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**Department of Defense  
Fiscal Year (FY) 2025 Budget Estimates**

March 2024



**Air Force**

*Justification Book Volume 2 of 4*

***Research, Development, Test & Evaluation, Air Force***

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Air Force • Budget Estimates FY 2025 • RDT&E Program

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## Fiscal Year (FY) 2025 President's Budget RDT&E Descriptive Summaries Budget Activities March 2024

### INTRODUCTION AND EXPLANATION OF CONTENTS

#### GENERAL

- This document has been prepared to provide information on the United States Air Force (USAF) Research, Development, Test and Evaluation (RDT&E) program elements and projects in the FY25 Budget Estimate Submission (BES).
  - All exhibits in this document have been assembled in accordance with DoD 7000.14R, Financial Management Regulation, Volume 2B, Chapter 5.
  - Other comments on exhibit contents in this document:
    - Exhibits R-2/2a and R-3 provide narrative information for all RDT&E program elements and projects within the USAF FY 2025 RDT&E program with the exception of classified program elements. The format and contents of this document are in accordance to the guidelines and requirements of the Congressional committees in so far as possible.
    - The “Other Program Funding Summary” portion of the R-2 includes, in addition to RDT&E funds, Procurement funds and quantities, Military Construction appropriation funds on specific development programs, Operations and Maintenance appropriation funds where they are essential to the development effort described, and where appropriate, Department of Energy (DOE) costs.

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### CLASSIFICATION

- All exhibits contained in Volumes I, II, and III are unclassified. Classified exhibits are not included in the submission due to the level of security classification and necessity of special security clearances.

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Department of the Air Force  
 FY 2025 President's Budget  
 Exhibit R-1 FY 2025 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

Mar 2024

Appropriation: 3600F Research, Development, Test and Evaluation, Air Force

Line No	Program Element Number	Item	Act	Sec	FY 2023	FY 2024 PB	FY 2025
					Actuals	Request with CR Adjustments'	Request
1	0601102F	Defense Research Sciences	01	U	377,616	401,486	361,930
2	0601103F	University Research Initiatives	01	U	191,797	182,372	143,372
<b>Basic Research</b>					<b>569,413</b>	<b>583,858</b>	<b>505,302</b>
3	0602020F	Future AF Capabilities Applied Research University Affiliated Research Center (UARC) - Tactical	02	U	93,684	90,713	85,477
4	0602022F	Autonomy	02	U		8,018	8,225
5	0602102F	Materials	02	U	266,944	142,325	142,336
6	0602201F	Aerospace Vehicle Technologies	02	U	188,407	161,268	5,235
7	0602202F	Human Effectiveness Applied Research	02	U	133,233	146,921	138,204
8	0602203F	Aerospace Propulsion	02	U	201,798	184,867	339,477
9	0602204F	Aerospace Sensors	02	U	249,300	216,269	193,029
10	0602212F	Defense Laboratories R&D Projects (10 U.S.C, Sec 2358) Science and Technology Management - Major Headquarters	02	U	107,281		
11	0602298F	Activities	02	U	8,856	10,303	9,662
12	0602602F	Conventional Munitions	02	U	136,169	160,599	138,497
13	0602605F	Directed Energy Technology	02	U	104,085	129,961	114,962
14	0602788F	Dominant Information Sciences and Methods	02	U	258,606	182,076	176,333
<b>Applied Research</b>					<b>1,748,363</b>	<b>1,433,320</b>	<b>1,351,437</b>
15	0603032F	Future AF Integrated Technology Demos	03	U	144,712	255,855	248,506
16	0603112F	Advanced Materials for Weapon Systems	03	U	53,164	30,372	29,661

\*A full-year FY 2024 appropriation for this account was not enacted at the time the budget was prepared; account is operating under the Further Additional Continuing Appropriations and Other Extensions Act, 2024 (Public Law 118-35). The amounts included for FY 2024 reflect the annualized level provided by the continuing resolution.

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17	0603199F	Sustainment Science and Technology (S&T)	03	U	17,907	10,478	12,558
18	0603203F	Advanced Aerospace Sensors	03	U	35,354	48,046	37,935
19	0603211F	Aerospace Technology Dev/Demo	03	U	95,428	51,896	102,529
20	0603216F	Aerospace Propulsion and Power Technology	03	U	91,041	56,789	
21	0603270F	Electronic Combat Technology	03	U	32,338	32,510	36,445
22	0603273F	Science & Technology for Nuclear Re-entry Systems	03	U	22,893	70,321	91,885
23	0603444F	Maui Space Surveillance System (MSSS)	03	U		2	
24	0603456F	Human Effectiveness Advanced Technology Development	03	U	29,250	15,593	19,568
25	0603601F	Conventional Weapons Technology	03	U	144,026	132,311	125,460
26	0603605F	Advanced Weapons Technology	03	U	81,040	102,997	25,050
27	0603680F	Manufacturing Technology Program	03	U	261,998	44,422	34,730
28	0603788F	Battlespace Knowledge Development and Demonstration	03	U	50,138	37,779	26,172
29	0604776F	Deployment & Distribution Enterprise R&D	03	U			27,762
30	0207412F	Control and Reporting Center (CRC)	03	U		2,005	2,012
<b>Advanced Technology Development</b>					<b>1,059,289</b>	<b>891,376</b>	<b>820,273</b>
31	0603036F	Modular Advanced Missile	04	U	73,250	105,238	
32	0603260F	Intelligence Advanced Development	04	U	7,401	6,237	3,820
33	0603742F	Combat Identification Technology	04	U	13,718	21,298	24,799
34	0603790F	NATO Research and Development	04	U	4,295	2,208	4,498
35	0603851F	Intercontinental Ballistic Missile - Dem/Val	04	U	44,751	45,319	119,197

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36	0604001F	NC3 Advanced Concepts	04	U	5,098	10,011	10,148
37	0604003F	Advanced Battle Management System (ABMS)	04	U	229,842	500,575	743,842
38	0604004F	Advanced Engine Development	04	U	212,586	595,352	562,337
39	0604005F	NC3 Commercial Development & Prototyping	04	U	93,485	78,799	68,124
40	0604006F	Dept of the Air Force Tech Architecture	04	U	48,808	2,620	
41	0604007F	E-7	04	U	411,704	681,039	418,513
42	0604009F	AFWERX Prime	04	U	164,648	83,336	20,580
43	0604015F	Long Range Strike - Bomber	04	U	3,037,499	2,984,143	2,654,073
44	0604025F	Rapid Defense Experimentation Reserve (RDER)	04	U	61,915	154,300	75,051
45	0604032F	Directed Energy Prototyping	04	U	4,202	1,246	3,712
46	0604033F	Hypersonics Prototyping	04	U	112,015	150,340	
47	0604183F	Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)	04	U	387,325	381,528	516,971
48	0604201F	PNT Resiliency, Mods, and Improvements	04	U	28,902	18,041	
49	0604257F	Advanced Technology and Sensors	04	U	12,311	27,650	24,204
50	0604288F	Survivable Airborne Operations Center (SAOC)	04	U	94,740	888,829	1,687,500
51	0604317F	Technology Transfer	04	U	34,986	26,638	3,485
52	0604327F	Hard and Deeply Buried Target Defeat System (HDBTDS) Program	04	U	113,552	19,266	154,417
53	0604414F	Cyber Resiliency of Weapon Systems-ACS	04	U	42,068	37,121	59,539
54	0604534F	Adaptive Engine Transition Program (AETP)	04	U	276,659		

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					Actuals	Request with CR Adjustments'	Request
55	0604609F	Requirements Analysis & Concept Maturation	04	U			22,667
56	0604668F	Joint Transportation Management System (JTMS)	04	U	27,758	37,026	174,723
57	0604776F	Deployment & Distribution Enterprise R&D	04	U	27,586	31,833	4,840
58	0604858F	Tech Transition Program	04	U	298,057	210,806	234,342
59	0604860F	Operational Energy and Installation Resilience	04	U	24,603	46,305	63,194
60	0605057F	Next Generation Air-refueling System	04	U			7,014
61	0605164F	Air Refueling Capability Modernization	04	U	11,281	19,400	13,661
62	0606005F	Digital Transformation Office	04	U			9,800
63	0201184F	Counter Narco-Terrorism Program Office	04	U	2		
64	0207110F	Next Generation Air Dominance	04	U	1,608,787	2,326,128	3,306,355
65	0207179F	Autonomous Collaborative Platforms	04	U	54,954	118,826	51,666
66	0207420F	Combat Identification	04	U	1,866	1,902	1,914
67	0207431F	Combat Air Intelligence System Activities	04	U			18,733
68	0207448F	C2ISR Tactical Data Link	04	U			42,371
69	0207455F	Three Dimensional Long-Range Radar (3DELRR)	04	U	13,959	19,763	8,100
70	0207522F	Airbase Air Defense Systems (ABADS)	04	U	48,252	78,867	17,273
71	0207606F	Joint Simulation Environment (JSE)	04	U			191,337
72	0208030F	War Reserve Materiel - Ammunition	04	U	10,288	8,175	5,226
73	0305236F	Common Data Link Executive Agent (CDL EA)	04	U	37,460	25,157	33,349
74	0305601F	Mission Partner Environments	04	U	16,741	17,727	22,028

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					Actuals	Request with CR Adjustments'	Request
75	0306250F	Cyber Operations Technology Support	04	U	272,583		
76	0306415F	Enabled Cyber Activities	04	U	16,728		
77	0708051F	Rapid Sustainment Modernization (RSM)	04	U	69,000	43,431	37,044
78	0808736F	Special Victim Accountability and Investigation	04	U			3,006
79	0808737F	Integrated Primary Prevention	04	U	8,973	9,364	5,364
80	0901410F	Contracting Information Technology System	04	U	13,630	28,294	28,995
81	1206415F	U.S. Space Command Research and Development Support	04	U	8,350	14,892	28,392
<b>Advanced Component Development &amp; Prototypes</b>					<b>8,086,618</b>	<b>9,859,030</b>	<b>11,486,204</b>
82	0604200F	Future Advanced Weapon Analysis & Programs	05	U	11,641	9,757	7,205
83	0604201F	PNT Resiliency, Mods, and Improvements	05	U	170,057	163,156	217,662
84	0604222F	Nuclear Weapons Support	05	U	61,736	45,884	70,823
85	0604270F	Electronic Warfare Development	05	U	8,352	13,804	19,264
86	0604281F	Tactical Data Networks Enterprise	05	U	120,186	74,023	78,480
87	0604287F	Physical Security Equipment Hard and Deeply Buried Target Defeat System (HDBTDS)	05	U	6,664	10,605	10,569
88	0604336F	Prototyping	05	U			39,079
89	0604602F	Armament/Ordnance Development	05	U	6,120	5,918	7,157
90	0604604F	Submunitions	05	U	3,273	3,345	3,427
91	0604617F	Agile Combat Support	05	U	18,677	21,967	24,178
92	0604706F	Life Support Systems	05	U	32,820	39,301	25,502

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					Actuals	Request with CR Adjustments'	Request
93	0604735F	Combat Training Ranges	05	U	100,322	152,569	224,783
94	0604932F	Long Range Standoff Weapon	05	U	921,891	911,406	623,491
95	0604933F	ICBM Fuze Modernization	05	U	97,499	71,732	10,408
96	0605030F	Joint Tactical Network Center (JTNC)	05	U	2,222	2,256	
97	0605031F	Joint Tactical Network (JTN)	05	U		452	
98	0605056F	Open Architecture Management	05	U	37,262	36,582	41,223
99	0605057F	Next Generation Air-refueling System	05	U		7,928	
100	0605223F	Advanced Pilot Training	05	U	32,513	77,252	83,985
101	0605229F	HH-60W	05	U	27,722	48,268	
102	0605238F	Ground Based Strategic Deterrent EMD	05	U	3,434,623	3,746,935	3,721,024
103	0207171F	F-15 EPAWSS	05	U	65,587	13,982	
104	0207279F	Isolated Personnel Survivability and Recovery	05	U	9,591	56,225	10,020
105	0207328F	Stand In Attack Weapon	05	U	243,076	298,585	375,528
106	0207701F	Full Combat Mission Training	05	U	12,528	7,597	7,754
107	0208036F	Medical C-CBRNE Programs	05	U		2,006	
108	0303267F	Auctioned Spectrum Relocation Fund	05	U	60,167		
109	0303667F	Citizen Broadband Radio System	05	U	8		
110	0303867F	AMBIT - Post-Auctioned SRF	05	U	14,851		
111	0305155F	Theater Nuclear Weapon Storage & Security System	05	U			9,018
112	0305205F	Endurance Unmanned Aerial Vehicles	05	U		30,000	

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					Actuals	Request with CR Adjustments'	Request
113	0401221F	KC-46A Tanker Squadrons	05	U	140,395	124,662	93,620
114	0401319F	VC-25B	05	U	79,623	490,701	433,943
115	0701212F	Automated Test Systems	05	U	16,657	12,911	26,640
116	0804772F	Training Developments	05	U	10,838	1,922	4,960
117	1203176F	Combat Survivor Evader Locator	05	U			2,269
<b>System Development &amp; Demonstration</b>					<b>5,746,901</b>	<b>6,481,731</b>	<b>6,172,012</b>
118	0604256F	Threat Simulator Development	06	U	20,835	16,626	19,927
119	0604759F	Major T&E Investment	06	U	169,432	31,143	74,228
120	0605101F	RAND Project Air Force	06	U	37,655	38,398	39,720
121	0605502F	Small Business Innovation Research	06	U	836,355	1,466	
122	0605712F	Initial Operational Test & Evaluation	06	U	13,926	13,736	14,247
123	0605807F	Test and Evaluation Support	06	U	842,401	913,213	936,913
124	0605827F	Acq Workforce- Global Vig & Combat Sys	06	U	288,812	317,901	316,924
125	0605828F	Acq Workforce- Global Reach	06	U	456,624	541,677	496,740
126	0605829F	Acq Workforce- Cyber, Network, & Bus Sys	06	U	471,073	551,213	521,987
127	0605830F	Acq Workforce- Global Battle Mgmt	06	U	3,696		
128	0605831F	Acq Workforce- Capability Integration	06	U	261,016	243,780	262,349
129	0605832F	Acq Workforce- Advanced Prgm Technology	06	U	64,081	109,030	69,319
130	0605833F	Acq Workforce- Nuclear Systems	06	U	236,382	336,788	343,180
131	0605898F	Management HQ - R&D	06	U	6,054	5,005	6,291

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					Actuals	Request with CR Adjustments'	Request
132	0605976F	Facilities Restoration and Modernization - Test and Evaluation Support	06	U	133,420	87,889	94,828
133	0605978F	Facilities Sustainment - Test and Evaluation Support	06	U	31,561	35,065	63,579
134	0606017F	Requirements Analysis and Maturation	06	U	106,454	89,956	41,550
135	0606398F	Management HQ - T&E	06	U	7,535	7,453	7,647
136	0303166F	Joint Information Operations Range	06	U	556		
137	0303255F	Command, Control, Communication, and Computers (C4) - STRATCOM	06	U	29,092	20,871	19,607
138	0308602F	ENTEPRISE INFORMATION SERVICES (EIS)	06	U	71,020	100,357	104,133
139	0702806F	Acquisition and Management Support	06	U	48,331	20,478	25,216
140	0804731F	General Skill Training	06	U	871	796	10
141	0804776F	Advanced Distributed Learning	06	U			1,652
142	0909999F	Financing for Cancelled Account Adjustments	06	U	1,887		
143	1001004F	International Activities	06	U	2,593	3,917	4,590
		<b>Management Support</b>			<b>4,141,662</b>	<b>3,486,758</b>	<b>3,464,637</b>
144	0604233F	Specialized Undergraduate Flight Training	07	U	16,729	41,464	39,667
145	0604281F	Tactical Data Networks Enterprise	07	U			22
146	0604283F	Battle Mgmt Com & Ctrl Sensor Development	07	U		40,000	100,183
147	0604445F	Wide Area Surveillance	07	U		8,018	21,443
148	0604617F	Agile Combat Support	07	U	7,937	5,645	
149	0604776F	Deployment & Distribution Enterprise R&D	07	U	156		

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150	0604840F	F-35 C2D2	07	U	994,924	1,275,268	1,124,207
151	0605018F	AF Integrated Personnel and Pay System (AF-IPPS)	07	U	41,872	40,203	49,739
152	0605024F	Anti-Tamper Technology Executive Agency	07	U	49,908	49,613	65,792
153	0605117F	Foreign Materiel Acquisition and Exploitation	07	U	117,838	93,881	94,188
154	0605229F	HH-60W	07	U			52,314
155	0605278F	HC/MC-130 Recap RDT&E	07	U	47,174	36,536	24,934
156	0606018F	NC3 Integration	07	U	24,317	22,910	21,864
157	0101113F	B-52 Squadrons	07	U	701,934	950,815	1,045,570
158	0101122F	Air-Launched Cruise Missile (ALCM)	07	U	571	290	542
159	0101126F	B-1B Squadrons	07	U	19,456	12,619	17,939
160	0101127F	B-2 Squadrons	07	U	100,590	87,623	41,212
161	0101213F	Minuteman Squadrons	07	U	71,339	33,237	62,550
162	0101316F	Worldwide Joint Strategic Communications	07	U	17,894	24,653	13,690
163	0101318F	Service Support to STRATCOM - Global Strike	07	U		7,562	7,330
164	0101324F	Integrated Strategic Planning & Analysis Network	07	U	31,043		
165	0101328F	ICBM Reentry Vehicles	07	U	112,282	475,415	629,928
167	0102110F	MH-139A	07	U	15,805	25,737	
168	0102326F	Region/Sector Operation Control Center Modernization Program	07	U	389	831	852
169	0102412F	North Warning System (NWS)	07	U	231,884	102	103

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170	0102417F	Over-the-Horizon Backscatter Radar	07	U	4,400	428,754	383,575
171	0202834F	Vehicles and Support Equipment - General	07	U	13,715	15,498	6,097
172	0205219F	MQ-9 UAV	07	U	144,827	81,123	7,074
173	0205671F	Joint Counter RCIED Electronic Warfare	07	U	3,901	2,303	3,372
174	0207040F	Multi-Platform Electronic Warfare Equipment	07	U	44,264	7,312	
175	0207131F	A-10 Squadrons	07	U	52,797		
176	0207133F	F-16 Squadrons	07	U	241,482	98,633	106,952
177	0207134F	F-15E Squadrons	07	U	193,307	50,965	178,603
178	0207136F	Manned Destructive Suppression	07	U	9,540	16,543	16,182
179	0207138F	F-22A Squadrons	07	U	542,659	725,889	768,561
180	0207142F	F-35 Squadrons	07	U	60,501	97,231	47,132
181	0207146F	F-15EX	07	U	91,178	100,006	56,228
182	0207161F	Tactical AIM Missiles	07	U	33,365	41,958	34,932
183	0207163F	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	U	36,055	53,679	53,593
184	0207227F	Combat Rescue - Pararescue	07	U	863	726	743
185	0207238F	E-11A	07	U		64,888	64,127
186	0207247F	AF TENCAP	07	U	28,809	25,749	50,263
187	0207249F	Precision Attack Systems Procurement	07	U	12,284	11,872	12,723
188	0207253F	Compass Call	07	U	54,758	66,932	132,475
189	0207268F	Aircraft Engine Component Improvement Program	07	U	131,325	55,223	68,743

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					Actuals	Request with CR Adjustments'	Request
190	0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	07	U	123,852	132,937	183,532
191	0207327F	Small Diameter Bomb (SDB)	07	U	37,988	37,518	29,910
192	0207410F	Air & Space Operations Center (AOC)	07	U	76,216	72,059	71,442
193	0207412F	Control and Reporting Center (CRC)	07	U	6,409	17,498	18,473
194	0207417F	Airborne Warning and Control System (AWACS)	07	U	11,191		
195	0207418F	AFSPECWAR - TACP	07	U	5,763	2,106	2,206
197	0207431F	Combat Air Intelligence System Activities	07	U	36,704	72,010	46,702
198	0207438F	Theater Battle Management (TBM) C4I	07	U	5,647	6,467	4,873
199	0207439F	Electronic Warfare Integrated Reprogramming (EWIR)	07	U	15,990	10,388	17,149
200	0207444F	Tactical Air Control Party-Mod	07	U	10,008	10,060	12,171
201	0207452F	DCAPES	07	U	7,754	8,233	8,431
202	0207521F	Air Force Calibration Programs	07	U	20,226	2,172	2,223
203	0207573F	National Technical Nuclear Forensics	07	U	2,039	2,049	2,060
204	0207590F	Seek Eagle	07	U	32,794	33,478	34,985
205	0207601F	USAF Modeling and Simulation	07	U	20,980		
206	0207605F	Wargaming and Simulation Centers	07	U	7,004	11,894	
207	0207697F	Distributed Training and Exercises	07	U	4,480	3,811	4,847
208	0207701F	Full Combat Mission Training	07	U			7,048
209	0208006F	Mission Planning Systems	07	U	96,492	96,272	92,566
210	0208007F	Tactical Deception	07	U	32,343	26,533	539

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					Actuals	Request with CR Adjustments'	Request
211	0208064F	OPERATIONAL HQ - CYBER	07	U	13,841		
212	0208087F	Distributed Cyber Warfare Operations	07	U	69,414	50,122	29,996
213	0208088F	AF Defensive Cyberspace Operations	07	U	16,220	113,064	113,218
214	0208097F	Joint Cyber Command and Control (JCC2)	07	U	86,631		
215	0208099F	Unified Platform (UP)	07	U	103,792		
219	0208288F	Intel Data Applications	07	U	1,026	967	988
220	0301025F	GeoBase	07	U	2,256	1,514	1,002
221	0301112F	Nuclear Planning and Execution System (NPES)	07	U	17,276		
222	0301113F	Cyber Security Intelligence Support	07	U	8,972	8,476	18,141
228	0301377F	Countering Advanced Conventional Weapons (CACW)	07	U			1,668
230	0301401F	AF Multi-Domain Non-Traditional ISR Battlespace Awareness	07	U	3,069	2,890	3,436
231	0302015F	E-4B National Airborne Operations Center (NAOC)	07	U	29,425	39,868	40,441
232	0302315F	Non-Kinetic Countermeasure Support	07	U			15,180
233	0303004F	EIT CONNECT	07	U		32,900	32,960
234	0303089F	Cyberspace and DoDIN Operations	07	U		4,881	9,776
235	0303131F	Minimum Essential Emergency Communications Network (MEECN)	07	U	32,876	33,567	25,500
236	0303133F	High Frequency Radio Systems	07	U	2,315	40,000	8,667
237	0303140F	Information Systems Security Program	07	U	63,048	95,523	94,424
238	0303248F	All Domain Common Platform	07	U	44,989	71,296	82,927

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					Actuals	Request with CR Adjustments'	Request
239	0303260F	Joint Military Deception Initiative	07	U	2,493	4,682	7,324
240	0304100F	Strategic Mission Planning & Execution System (SMPES)	07	U		64,944	69,441
243	0304260F	Airborne SIGINT Enterprise	07	U	98,297	108,947	85,284
244	0304310F	Commercial Economic Analysis	07	U	4,054	4,635	4,719
247	0305015F	C2 Air Operations Suite - C2 Info Services	07	U	7,499	13,751	13,524
248	0305020F	CCMD Intelligence Information Technology	07	U	1,821	1,660	1,836
249	0305022F	ISR Modernization & Automation Dvmt (IMAD)	07	U	15,138	18,680	22,909
250	0305099F	Global Air Traffic Management (GATM)	07	U	4,727	5,031	5,151
251	0305103F	Cyber Security Initiative	07	U	87	301	304
252	0305111F	Weather Service	07	U	52,060	26,329	31,372
253	0305114F	Air Traffic Control, Approach, and Landing System (ATCALs)	07	U	6,729	8,751	15,143
254	0305116F	Aerial Targets	07	U	1,316	6,915	7,685
257	0305128F	Security and Investigative Activities	07	U	214	352	481
258	0305146F	Defense Joint Counterintelligence Activities	07	U	8,328	6,930	6,387
259	0305158F	Tactical Terminal	07	U			1,002
260	0305179F	Integrated Broadcast Service (IBS)	07	U	14,123	21,588	16,006
261	0305202F	Dragon U-2	07	U	35,170	16,842	
262	0305206F	Airborne Reconnaissance Systems	07	U	76,139	43,158	84,363
263	0305207F	Manned Reconnaissance Systems	07	U	14,590	14,330	16,323

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					Actuals	Request with CR Adjustments'	Request
264	0305208F	Distributed Common Ground/Surface Systems	07	U	26,901	88,854	86,476
265	0305220F	RQ-4 UAV	07	U	36,791	1,242	9,516
266	0305221F	Network-Centric Collaborative Targeting	07	U	17,564	12,496	8,952
267	0305238F	NATO AGS	07	U	826	2	865
268	0305240F	Support to DCGS Enterprise	07	U	28,774	31,589	30,932
269	0305600F	International Intelligence Technology and Architectures	07	U	25,036	15,322	18,670
270	0305881F	Rapid Cyber Acquisition	07	U	3,636	8,830	
271	0305984F	Personnel Recovery Command & Ctrl (PRC2)	07	U	3,123	2,764	2,831
272	0307577F	Intelligence Mission Data (IMD)	07	U	6,332	7,090	3,658
273	0401115F	C-130 Airlift Squadron	07	U	392	5,427	
274	0401119F	C-5 Airlift Squadrons (IF)	07	U	3,095	29,502	33,003
275	0401130F	C-17 Aircraft (IF)	07	U	25,387	2,753	17,395
276	0401132F	C-130J Program	07	U	9,782	19,100	34,423
277	0401134F	Large Aircraft IR Countermeasures (LAIRCM)	07	U	2,820	5,982	7,768
278	0401218F	KC-135s	07	U	18,409	51,105	31,977
279	0401318F	CV-22	07	U	9,678	18,127	26,249
280	0408011F	Special Tactics / Combat Control	07	U	6,163	9,198	9,421
281	0708055F	Maintenance, Repair & Overhaul System	07	U	18,313		
282	0708610F	Logistics Information Technology (LOGIT)	07	U	15,882	17,520	11,895

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					Actuals	Request with CR Adjustments'	Request
283	0801380F	AF LVC Operational Training (LVC-OT)	07	U		25,144	29,815
284	0804743F	Other Flight Training	07	U	1,908	2,265	2,319
285	0901202F	Joint Personnel Recovery Agency	07	U	1,805	2,266	2,320
286	0901218F	Civilian Compensation Program	07	U	3,461	4,006	4,267
287	0901220F	Personnel Administration	07	U	2,883	3,078	3,163
288	0901226F	Air Force Studies and Analysis Agency	07	U	866	5,309	18,937
289	0901538F	Financial Management Information Systems Development	07	U	4,922	4,279	5,634
290	0901554F	Defense Enterprise Acntng and Mgt Sys (DEAMS)	07	U	43,111	45,925	57,689
291	1202140F	Service Support to SPACECOM Activities	07	U	13,418	9,778	
999	999999999	Classified Programs	07	U	17,634,854	16,814,245	18,038,552
	<b>Operational Systems Development</b>				<b>23,662,019</b>	<b>23,829,283</b>	<b>25,308,906</b>
293	0901560F	Continuing Resolution Programs	20	U		-1,651,372	
	<b>Undistributed</b>					<b>-1,651,372</b>	
<b>Total Research, Development, Test and Evaluation, Air Force</b>					<b>45,014,265</b>	<b>44,913,984</b>	<b>49,108,771</b>

\*A full-year FY 2024 appropriation for this account was not enacted at the time the budget was prepared; account is operating under the Further Additional Continuing Appropriations and Other Extensions Act, 2024 (Public Law 118-35). The amounts included for FY 2024 reflect the annualized level provided by the continuing resolution.

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					Request Overseas Operations Costs (OOC)*	Request Overseas Operations Costs (OOC)*
86	0604281F	Tactical Data Networks Enterprise	05	U	1,792	1,831
		<b>System Development &amp; Demonstration</b>			<b>1,792</b>	<b>1,831</b>
219	0208288F	Intel Data Applications	07	U	967	988
		<b>Operational Systems Development</b>			<b>967</b>	<b>988</b>
<b>Total Research, Development, Test and Evaluation, Air Force</b>					<b>2,759</b>	<b>2,819</b>

\*FY 2024 and FY 2025 Overseas Operations Costs (OOC) numbers are a subset of the baseline submission.

\*FY 2023 includes \$0K in Overseas Operations Costs (OOC) Actuals. FY 2024 includes \$2,759K in OOC Requested. FY 2025 includes \$2,819K for the OOC Budget Estimate. OOC were financed previously with former Overseas Contingency Operations (OCO) funding.

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Electronic Warfare Integrated Reprogramming (EWIR)	0207439F	199	07.....	Volume 4 - 27
Enabled Cyber Activities	0306415F	76	04.....	Volume 2 - 537
Endurance Unmanned Aerial Vehicles	0305205F	112	05.....	Volume 2 - 907
F-15 EPAWSS	0207171F	103	05.....	Volume 2 - 837
F-15E Squadrons	0207134F	177	07.....	Volume 3 - 629
F-15EX	0207146F	181	07.....	Volume 3 - 693
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Future Advanced Weapon Analysis & Programs	0604200F	82	05.....	Volume 2 - 589
GeoBase	0301025F	220	07.....	Volume 4 - 231
Global Air Traffic Management (GATM)	0305099F	250	07.....	Volume 4 - 429
Ground Based Strategic Deterrent EMD	0605238F	102	05.....	Volume 2 - 817
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Hypersonics Prototyping	0604033F	46	04.....	Volume 2 - 183
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ICBM Fuze Modernization	0604933F	95	05.....	Volume 2 - 757
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Integrated Primary Prevention	0808737F	79	04.....	Volume 2 - 559
Integrated Strategic Planning & Analysis Network	0101324F	164	07.....	Volume 3 - 493
Intel Data Applications	0208288F	219	07.....	Volume 4 - 225
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Joint Cyber Command and Control (JCC2)	0208097F	214	07.....	Volume 4 - 209
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Large Aircraft IR Countermeasures (LAIRCM)	0401134F	277	07.....	Volume 4 - 687
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Modular Advanced Missile	0603036F	31	04.....	Volume 2 - 1
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PNT Resiliency, Mods, and Improvements	0604201F	83	05.....	Volume 2 - 599
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Science and Technology Management - Major Headquarters Activities	0602298F	11	02.....	Volume 1 - 169
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Service Support to STRATCOM - Global Strike	0101318F	163	07.....	Volume 3 - 485
Small Business Innovation Research	0605502F	121	06.....	Volume 3 - 25
Small Diameter Bomb (SDB)	0207327F	191	07.....	Volume 3 - 791
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Strategic Mission Planning & Execution System (SMPES)	0304100F	240	07.....	Volume 4 - 361
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Tactical AIM Missiles	0207161F	182	07.....	Volume 3 - 701
Tactical Air Control Party-Mod	0207444F	200	07.....	Volume 4 - 35
Tactical Data Networks Enterprise	0604281F	86	05.....	Volume 2 - 647
Tactical Data Networks Enterprise	0604281F	145	07.....	Volume 3 - 161
Tactical Deception	0208007F	210	07.....	Volume 4 - 145
Tactical Terminal	0305158F	259	07.....	Volume 4 - 489
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Test and Evaluation Support	0605807F	123	06.....	Volume 3 - 35
Theater Battle Management (TBM) C4I	0207438F	198	07.....	Volume 4 - 21
Theater Nuclear Weapon Storage & Security System	0305155F	111	05.....	Volume 2 - 901
Threat Simulator Development	0604256F	118	06.....	Volume 3 - 1
Three Dimensional Long-Range Radar (3DELRR)	0207455F	69	04.....	Volume 2 - 475
Training Developments	0804772F	116	05.....	Volume 2 - 955
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Vehicles and Support Equipment - General	0202834F	171	07.....	Volume 3 - 563
War Reserve Materiel - Ammunition	0208030F	72	04.....	Volume 2 - 501
Wargaming and Simulation Centers	0207605F	206	07.....	Volume 4 - 99
Weather Service	0305111F	252	07.....	Volume 4 - 443
Wide Area Surveillance	0604445F	147	07.....	Volume 3 - 175
Worldwide Joint Strategic Communications	0101316F	162	07.....	Volume 3 - 475

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Department of Defense  
 FY 2025 President's Budget  
 Exhibit R-1 FY 2025 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

Mar 2024

	FY 2023 Actuals	FY 2024 PB Request with CR Adjustments*	FY 2025 Request
<b><u>Summary Recap of Budget Activities</u></b>			
Basic Research	622,674	583,858	541,382
Applied Research	2,117,867	1,639,516	1,596,401
Advanced Technology Development	1,648,354	1,473,902	1,383,709
Advanced Component Development & Prototypes	10,991,064	14,088,176	16,037,150
System Development & Demonstration	11,193,856	12,489,748	11,823,371
Management Support	5,100,989	4,049,779	4,032,006
Operational Systems Development	30,143,717	31,317,391	32,237,640
Software And Digital Technology Pilot Programs	191,980	122,326	157,265
Undistributed		-4,234,749	
<b>Total Research, Development, Test, &amp; Evaluation</b>	<b>62,010,501</b>	<b>61,529,947</b>	<b>67,808,924</b>
<b><u>Summary Recap of FYDP Programs</u></b>			
Strategic Forces	1,307,587	2,047,638	2,203,291
General Purpose Forces	4,609,324	5,160,229	6,329,448
Intelligence and Communications	1,215,200	1,061,042	1,073,411
Mobility Forces	295,744	756,557	687,799
Research and Development	19,717,934	20,470,919	20,509,040
Central Supply and Maintenance	168,183	94,340	100,795
Training Medical and Other	22,590	39,491	47,126
Administration and Associated Activities	74,312	-4,141,592	121,005

\*A full-year FY 2024 appropriation for this account was not enacted at the time the budget was prepared; account is operating under the Further Additional Continuing Appropriations and Other Extensions Act, 2024 (Public Law 118-35). The amounts included for FY 2024 reflect the annualized level provided by the continuing resolution.

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Department of the Air Force  
 FY 2025 President's Budget  
 Exhibit R-1 FY 2025 President's Budget  
 Total Obligational Authority  
 (Dollars in Thousands)

Mar 2024

	FY 2024 PB Request Overseas Operations Costs (OOC)*	FY 2025 Overseas Operations Costs (OOC)*
<b><u>Summary Recap of Budget Activities</u></b>		
System Development & Demonstration	1,792	1,831
Operational Systems Development	967	988
<b>Total Research, Development, Test, &amp; Evaluation</b>	<b>2,759</b>	<b>2,819</b>
<b><u>Summary Recap of FYDP Programs</u></b>		
General Purpose Forces	967	988
Research and Development	1,792	1,831
<b>Total Research, Development, Test, &amp; Evaluation</b>	<b>2,759</b>	<b>2,819</b>

\*FY 2024 and FY 2025 Overseas Operations Costs (OOC) numbers are a subset of the baseline submission.

\*FY 2023 includes \$0K in Overseas Operations Costs (OOC) Actuals. FY 2024 includes \$2,759K in OOC Requested. FY 2025 includes \$2,819K for the OOC Budget Estimate. OOC were financed previously with former Overseas Contingency Operations (OCO) funding.

Department of the Air Force  
 TOTAL CIVILIAN PERSONNEL COSTS  
 OP-8B: OP-8 (PB)  
 FY 2025 President's Budget Submission  
 (FY 2023)

	(S in Thousands)											d/c l Basic Comp	i/c m Total Comp	Rates k/c n Comp & Benefits	h/d o % BC Variables	j/d p % BC Benefits
	a Begin Strength	b End Strength	c FTEs	d Basic Comp	e Overtime Pay	f Holiday Pay	g Other O.C.11	e + f + g h Total Variables	d + h i Comp O.C.11	i Benefits O.C.12/13	i + j k Comp & Benefits					
<b>Direct Funded Personnel (includes OC 13)</b>	18,218	20,333	17,813	2,664,609	0	0	0	0	2,664,609	0	2,664,609	\$149,588	\$149,588	\$149,588	0.0%	0.0%
<b>D1. US Direct Hire (USDH)</b>	18,216	20,329	17,809	2,664,308	-	-	-	-	2,664,308	-	2,664,308	\$149,605	\$149,605	\$149,605	0.0%	0.0%
D1a. Senior Executive Schedule	13	23	23	3,547	-	-	-	-	3,547	-	3,547	\$154,217	\$154,217	\$154,217	0.0%	0.0%
D1b. General Schedule	15,110	19,425	16,905	2,434,670	-	-	-	-	2,434,670	-	2,434,670	\$144,021	\$144,021	\$144,021	0.0%	0.0%
D1c. Special Schedule	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D1d. Wage System	3,093	881	881	226,091	-	-	-	-	226,091	-	226,091	\$256,630	\$256,630	\$256,630	0.0%	0.0%
D1e. Highly Qualified Experts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D1f. Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>D2. Direct Hire Program Foreign Nationals (DHFN)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>D3. Total Direct Hire</b>	18,216	20,329	17,809	2,664,308	-	-	-	-	2,664,308	-	2,664,308	\$149,605	\$149,605	\$149,605	0.0%	0.0%
<b>D4. Indirect Hire Foreign Nationals (IHFN)</b>	2	4	4	301	-	-	-	-	301	-	301	\$75,250	\$75,250	\$75,250	0.0%	0.0%
Subtotal - Direct Funded (excludes OC 13)	18,218	20,333	17,813	2,664,609	-	-	-	-	2,664,609	-	2,664,609	\$149,588	\$149,588	\$149,588	0.0%	0.0%
<b>D5. Other Object Class 13 Benefits</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5a. USDH - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5b. DHFN - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5c. Voluntary Separation Incentive Pay (VSIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5d. Foreign National Separation Liability Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Reimbursable Funded Personnel (includes OC 13)</b>	4,153	2,788	2,788	329,323	0	0	0	0	329,323	0	329,323	\$118,122	\$118,122	\$118,122	0.0%	0.0%
<b>R1. US Direct Hire (USDH)</b>	4,153	2,788	2,788	329,323	-	-	-	-	329,323	-	329,323	\$118,122	\$118,122	\$118,122	0.0%	0.0%
R1a. Senior Executive Schedule	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1b. General Schedule	4,153	2,788	2,788	329,323	-	-	-	-	329,323	-	329,323	\$118,122	\$118,122	\$118,122	0.0%	0.0%
R1c. Special Schedule	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1d. Wage System	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1e. Highly Qualified Experts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1f. Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>R2. Direct Hire Program Foreign Nationals (DHFN)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>R3. Total Direct Hire</b>	4,153	2,788	2,788	329,323	-	-	-	-	329,323	-	329,323	\$118,122	\$118,122	\$118,122	0.0%	0.0%
<b>R4. Indirect Hire Foreign Nationals (IHFN)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal - Reimbursable Funded (excludes OC 13)	4,153	2,788	2,788	329,323	-	-	-	-	329,323	-	329,323	\$118,122	\$118,122	\$118,122	0.0%	0.0%
<b>R5. Other Object Class 13 Benefits</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5a. USDH - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5b. DHFN - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5c. Voluntary Separation Incentive Pay (VSIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5d. Foreign National Separation Liability Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Personnel (includes OC 13)</b>	22,371	23,121	20,601	2,993,932	0	0	0	0	2,993,932	0	2,993,932	\$145,329	\$145,329	\$145,329	0.0%	0.0%
<b>T1. US Direct Hire (USDH)</b>	22,369	23,117	20,597	2,993,631	-	-	-	-	2,993,631	-	2,993,631	\$145,343	\$145,343	\$145,343	0.0%	0.0%
T1a. Senior Executive Schedule	13	23	23	3,547	0	0	0	0	3,547	0	3,547	\$154,217	\$154,217	\$154,217	0.0%	0.0%
T1b. General Schedule	19,263	22,213	19,693	2,763,993	0	0	0	0	2,763,993	0	2,763,993	\$140,354	\$140,354	\$140,354	0.0%	0.0%
T1c. Special Schedule	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
T1d. Wage System	3,093	881	881	226,091	0	0	0	0	226,091	0	226,091	\$256,630	\$256,630	\$256,630	0.0%	0.0%
T1e. Highly Qualified Experts	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
T1f. Other	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
<b>T2. Direct Hire Program Foreign Nationals (DHFN)</b>	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
<b>T3. Total Direct Hire</b>	22,369	23,117	20,597	2,993,631	-	-	-	-	2,993,631	-	2,993,631	\$145,343	\$145,343	\$145,343	0.0%	0.0%
<b>T4. Indirect Hire Foreign Nationals (IHFN)</b>	2	4	4	301	0	0	0	0	301	0	301	\$75,250	\$75,250	\$75,250	0.0%	0.0%
Subtotal - Total Funded (excludes OC 13)	22,371	23,121	20,601	2,993,932	-	-	-	-	2,993,932	-	2,993,932	\$145,329	\$145,329	\$145,329	0.0%	0.0%
<b>T5. Other Object Class 13 Benefits</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5a. USDH - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5b. DHFN - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5c. Voluntary Separation Incentive Pay (VSIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5d. Foreign National Separation Liability Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Department of the Air Force  
 TOTAL CIVILIAN PERSONNEL COSTS  
 OP-8B: OP-8 (PB)  
 FY 2025 President's Budget Submission  
 (FY 2024)

	(S in Thousands)											d/c l Basic Comp	i/c m Total Comp	Rates k/c n Comp & Benefits	h/d o % BC Variables	j/d p % BC Benefits
	a Begin Strength	b End Strength	c FTEs	d Basic Comp	e Overtime Pay	f Holiday Pay	g Other O.C.11	e + f + g h Total Variables	d + h i Comp O.C.11	i Benefits O.C.12/13	i + j k Comp & Benefits					
<b>Direct Funded Personnel (includes OC 13)</b>	18,726	19,345	19,127	3,191,398	0	0	0	0	3,191,398	0	3,191,398	\$166,853	\$166,853	\$166,853	0.0%	0.0%
<b>D1. US Direct Hire (USDH)</b>	18,724	19,343	19,125	3,190,276	-	-	-	-	3,190,276	-	3,190,276	\$166,812	\$166,812	\$166,812	0.0%	0.0%
D1a. Senior Executive Schedule	13	75	75	11,567	-	-	-	-	11,567	-	11,567	\$154,227	\$154,227	\$154,227	0.0%	0.0%
D1b. General Schedule	15,455	16,012	15,794	2,952,618	-	-	-	-	2,952,618	-	2,952,618	\$186,946	\$186,946	\$186,946	0.0%	0.0%
D1c. Special Schedule	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D1d. Wage System	3,256	3,256	3,256	226,091	-	-	-	-	226,091	-	226,091	\$69,438	\$69,438	\$69,438	0.0%	0.0%
D1e. Highly Qualified Experts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D1f. Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>D2. Direct Hire Program Foreign Nationals (DHFN)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>D3. Total Direct Hire</b>	18,724	19,343	19,125	3,190,276	-	-	-	-	3,190,276	-	3,190,276	\$166,812	\$166,812	\$166,812	0.0%	0.0%
<b>D4. Indirect Hire Foreign Nationals (IHFN)</b>	2	2	2	1,122	-	-	-	-	1,122	-	1,122	\$561,000	\$561,000	\$561,000	0.0%	0.0%
<i>Subtotal - Direct Funded (excludes OC 13)</i>	18,726	19,345	19,127	3,191,398	-	-	-	-	3,191,398	-	3,191,398	\$166,853	\$166,853	\$166,853	0.0%	0.0%
<b>D5. Other Object Class 13 Benefits</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5a. USDH - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5b. DHFN - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5c. Voluntary Separation Incentive Pay (VSIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5d. Foreign National Separation Liability Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Reimbursable Funded Personnel (includes OC 13)</b>	4,591	4,591	4,591	608,639	0	0	0	0	608,639	0	608,639	\$132,572	\$132,572	\$132,572	0.0%	0.0%
<b>R1. US Direct Hire (USDH)</b>	4,591	4,591	4,591	608,639	-	-	-	-	608,639	-	608,639	\$132,572	\$132,572	\$132,572	0.0%	0.0%
R1a. Senior Executive Schedule	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1b. General Schedule	4,591	4,591	4,591	608,639	-	-	-	-	608,639	-	608,639	\$132,572	\$132,572	\$132,572	0.0%	0.0%
R1c. Special Schedule	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1d. Wage System	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1e. Highly Qualified Experts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1f. Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>R2. Direct Hire Program Foreign Nationals (DHFN)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>R3. Total Direct Hire</b>	4,591	4,591	4,591	608,639	-	-	-	-	608,639	-	608,639	\$132,572	\$132,572	\$132,572	0.0%	0.0%
<b>R4. Indirect Hire Foreign Nationals (IHFN)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Subtotal - Reimbursable Funded (excludes OC 13)</i>	4,591	4,591	4,591	608,639	-	-	-	-	608,639	-	608,639	\$132,572	\$132,572	\$132,572	0.0%	0.0%
<b>R5. Other Object Class 13 Benefits</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5a. USDH - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5b. DHFN - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5c. Voluntary Separation Incentive Pay (VSIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5d. Foreign National Separation Liability Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Personnel (includes OC 13)</b>	23,317	23,936	23,718	3,800,037	0	0	0	0	3,800,037	0	3,800,037	\$160,217	\$160,217	\$160,217	0.0%	0.0%
<b>T1. US Direct Hire (USDH)</b>	23,315	23,934	23,716	3,798,915	-	-	-	-	3,798,915	-	3,798,915	\$160,184	\$160,184	\$160,184	0.0%	0.0%
T1a. Senior Executive Schedule	13	75	75	11,567	0	0	0	0	11,567	0	11,567	\$154,227	\$154,227	\$154,227	0.0%	0.0%
T1b. General Schedule	20,046	20,603	20,385	3,561,257	0	0	0	0	3,561,257	0	3,561,257	\$174,700	\$174,700	\$174,700	0.0%	0.0%
T1c. Special Schedule	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
T1d. Wage System	3,256	3,256	3,256	226,091	0	0	0	0	226,091	0	226,091	\$69,438	\$69,438	\$69,438	0.0%	0.0%
T1e. Highly Qualified Experts	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
T1f. Other	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
<b>T2. Direct Hire Program Foreign Nationals (DHFN)</b>	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
<b>T3. Total Direct Hire</b>	23,315	23,934	23,716	3,798,915	-	-	-	-	3,798,915	-	3,798,915	\$160,184	\$160,184	\$160,184	0.0%	0.0%
<b>T4. Indirect Hire Foreign Nationals (IHFN)</b>	2	2	2	1,122	0	0	0	0	1,122	0	1,122	\$561,000	\$561,000	\$561,000	0.0%	0.0%
<i>Subtotal - Total Funded (excludes OC 13)</i>	23,317	23,936	23,718	3,800,037	-	-	-	-	3,800,037	-	3,800,037	\$160,217	\$160,217	\$160,217	0.0%	0.0%
<b>T5. Other Object Class 13 Benefits</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5a. USDH - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5b. DHFN - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5c. Voluntary Separation Incentive Pay (VSIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5d. Foreign National Separation Liability Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Department of the Air Force  
 TOTAL CIVILIAN PERSONNEL COSTS  
 OP-8B: OP-8 (PB)  
 FY 2025 President's Budget Submission  
 (FY 2025)

	(S in Thousands)											d/c l Basic Comp	i/c m Total Comp	Rates k/c n Comp & Benefits	h/d o % BC Variables	j/d p % BC Benefits
	a Begin Strength	b End Strength	c FTEs	d Basic Comp	e Overtime Pay	f Holiday Pay	g Other O.C.11	e + f + g h Total Variables	d + h i Comp O.C.11	i Benefits O.C.12/13	i + j k Comp & Benefits					
<b>Direct Funded Personnel (includes OC 13)</b>	19,345	19,949	19,949	2,226,320	0	0	0	0	2,226,320	876,094	3,102,414	\$111,601	\$111,601	\$155,517	0.0%	39.4%
<b>D1. US Direct Hire (USDH)</b>	19,343	19,947	19,947	2,225,988	-	-	-	-	2,225,988	876,094	3,102,082	\$111,595	\$111,595	\$155,516	0.0%	39.4%
D1a. Senior Executive Schedule	75	75	75	13,500	-	-	-	-	13,500	4,860	18,360	\$180,000	\$180,000	\$244,800	0.0%	36.0%
D1b. General Schedule	16,012	16,616	16,616	1,965,032	-	-	-	-	1,965,032	782,150	2,747,182	\$118,261	\$118,261	\$165,334	0.0%	39.8%
D1c. Special Schedule	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D1d. Wage System	3,256	3,256	3,256	247,456	-	-	-	-	247,456	89,084	336,540	\$76,000	\$76,000	\$103,360	0.0%	36.0%
D1e. Highly Qualified Experts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D1f. Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>D2. Direct Hire Program Foreign Nationals (DHFN)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>D3. Total Direct Hire</b>	19,343	19,947	19,947	2,225,988	-	-	-	-	2,225,988	876,094	3,102,082	\$111,595	\$111,595	\$155,516	0.0%	39.4%
<b>D4. Indirect Hire Foreign Nationals (IHFN)</b>	2	2	2	332	-	-	-	-	332	-	332	\$166,000	\$166,000	\$166,000	0.0%	0.0%
Subtotal - Direct Funded (excludes OC 13)	19,345	19,949	19,949	2,226,320	-	-	-	-	2,226,320	876,094	3,102,414	\$111,601	\$111,601	\$155,517	0.0%	39.4%
<b>D5. Other Object Class 13 Benefits</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5a. USDH - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5b. DHFN - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5c. Voluntary Separation Incentive Pay (VSIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D5d. Foreign National Separation Liability Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Reimbursable Funded Personnel (includes OC 13)</b>	4,591	4,591	4,591	565,802	0	0	0	0	565,802	0	565,802	\$123,242	\$123,242	\$123,242	0.0%	0.0%
<b>R1. US Direct Hire (USDH)</b>	4,591	4,591	4,591	565,802	-	-	-	-	565,802	-	565,802	\$123,242	\$123,242	\$123,242	0.0%	0.0%
R1a. Senior Executive Schedule	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1b. General Schedule	4,591	4,591	4,591	565,802	-	-	-	-	565,802	-	565,802	\$123,242	\$123,242	\$123,242	0.0%	0.0%
R1c. Special Schedule	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1d. Wage System	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1e. Highly Qualified Experts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R1f. Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>R2. Direct Hire Program Foreign Nationals (DHFN)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>R3. Total Direct Hire</b>	4,591	4,591	4,591	565,802	-	-	-	-	565,802	-	565,802	\$123,242	\$123,242	\$123,242	0.0%	0.0%
<b>R4. Indirect Hire Foreign Nationals (IHFN)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal - Reimbursable Funded (excludes OC 13)	4,591	4,591	4,591	565,802	-	-	-	-	565,802	-	565,802	\$123,242	\$123,242	\$123,242	0.0%	0.0%
<b>R5. Other Object Class 13 Benefits</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5a. USDH - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5b. DHFN - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5c. Voluntary Separation Incentive Pay (VSIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
R5d. Foreign National Separation Liability Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Personnel (includes OC 13)</b>	23,936	24,540	24,540	2,792,122	0	0	0	0	2,792,122	876,094	3,668,216	\$113,778	\$113,778	\$149,479	0.0%	31.4%
<b>T1. US Direct Hire (USDH)</b>	23,934	24,538	24,538	2,791,790	-	-	-	-	2,791,790	876,094	3,667,884	\$113,774	\$113,774	\$149,478	0.0%	31.4%
T1a. Senior Executive Schedule	75	75	75	13,500	0	0	0	0	13,500	4,860	18,360	\$180,000	\$180,000	\$244,800	0.0%	36.0%
T1b. General Schedule	20,603	21,207	21,207	2,530,834	0	0	0	0	2,530,834	782,150	3,312,984	\$119,340	\$119,340	\$156,221	0.0%	30.9%
T1c. Special Schedule	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
T1d. Wage System	3,256	3,256	3,256	247,456	0	0	0	0	247,456	89,084	336,540	\$76,000	\$76,000	\$103,360	0.0%	36.0%
T1e. Highly Qualified Experts	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
T1f. Other	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
<b>T2. Direct Hire Program Foreign Nationals (DHFN)</b>	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
<b>T3. Total Direct Hire</b>	23,934	24,538	24,538	2,791,790	-	-	-	-	2,791,790	876,094	3,667,884	\$113,774	\$113,774	\$149,478	0.0%	31.4%
<b>T4. Indirect Hire Foreign Nationals (IHFN)</b>	2	2	2	332	0	0	0	0	332	0	332	\$166,000	\$166,000	\$166,000	0.0%	0.0%
Subtotal - Total Funded (excludes OC 13)	23,936	24,540	24,540	2,792,122	-	-	-	-	2,792,122	876,094	3,668,216	\$113,778	\$113,778	\$149,479	0.0%	31.4%
<b>T5. Other Object Class 13 Benefits</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5a. USDH - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5b. DHFN - Benefits for Former Employees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5c. Voluntary Separation Incentive Pay (VSIP)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5d. Foreign National Separation Liability Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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## ACRONYMS

### *GENERAL ACRONYMS*

A&AS	- Advisory & Assistance Services
ABIDES	- Automated Budget Interactive Data Environment System
ACAT	- Acquisition Category
ACTD	- Advanced Concept Technology Demonstration
AGM	- Air-to-Ground Missile
AIM	- Air Intercept Missile
AIS	- Avionics Intermediate Shop
ACMI	- Aircraft Combat Maneuvering Instrumentation
AMRAAM	- Advanced Medium-Range Air-to-Air Missile
APPN	- Appropriation
ATD	- Advanced Technology Development
BA	- Budget Activity
BES	- Budget Estimate Submission
BY	- Budget Year
C3	- Command, Control, and Communication System
CFE	- Contractor Furnished Equipment
CONOPS	- Concept of Operation
CONUS	- Continental United States
CPMS	- Comprehensive Power Management System
CPT	- Cockpit Procedures Trainer
CRA	- Continuing Resolution Authority
CTS	- Countermeasures Test Set
CY	- Current Year
ECCM	- Electronic Counter Counter-Measures
ECM	- Electronic Counter Measures
ECO	- Engineering Change Orders
EOQ	- Economic Order Quantity
ECP	- Engineering Change Proposal
EPA	- Economic Price Adjustment
EW	- Electronic Warfare
EWAISP	- Electronic Warfare Avionics Integration Support Facility
FLIR	- Forward Looking Infra Red

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FOT&E	- Follow-on Test and Evaluation
FOC	- Fully Operational Capability
FLTS	- Flight Line Test Set
FPIF	- Fixed Price Incentive Firm
FPIS	- Fixed Price Incentive Fee, Successive Targets
FY	- Fiscal Year
GANS	- Global Access Navigation & Safety
GATM	- Global Air Traffic Management
GFE	- Government Furnished Equipment
GFP	- Government Furnished Property
GPS	- Global Positioning System
GSE	- Ground Support Equipment
ICS	- Interim Contractor Support
IOC	- Initial Operating Capability
IT	- Information Technology
JUON	- Joint Urgent Operational Need
MAIS	- Major Automated Information System Program
MDAP	- Major Defense Acquisition Program
METS	- Mobile Electronic Test Stations
MYP	- Multiyear Procurement
NAVWAR	- Navigation Warfare
NMC Rate	- Not Mission Capable Rate
OCO	- Overseas Contingency Operations
OOC	- Overseas Operations Costs
OT&E	- Operational Test and Evaluation
OWRM	- Other War Reserve Material
PAGEL	- Priced Aerospace Ground Equipment List
PB	- President's Budget
PBR	- Program Budget Review
PMA	- Program Management Administration
PMC	- Procurement Method Code
PNO	- Acquisition Program Number (MDAP Codes)
PR	- Purchase Request
PRCP	- Program Resource Collection Process
PTT	- Part Task Trainer
PY	- Prior Year

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R&M	- Reliability and Maintainability
RAA	- Rapid Acquisition Authority
RDT&E	- Research, Development, Test and Evaluation
RWR	- Radar Warning Receiver
ROM	- Rough Order of Magnitude
SS	- Sole Source
SOF	- Special Operation Force
TAF	- Tactical Air Force
TCAS	- Traffic Collision Alert and Avoidance System
TEWS	- Tactical Electronic Warfare System
TISS	- TEWS Intermediate Support System
TOA	- Total Obligation Authority
WCF	- Working Capital Fund
WRM	- War Reserve Material
WST	- Weapon System Trainer
UAV	- Unmanned Aerial Vehicle
XML	- Extensible Markup Language

### ***BASE / ORGANIZATIONAL ACRONYMS***

ACC	- Air Combat Command
AETC	- Air Education & Training Command
AFCAO	- Air Force Computer Acquisition Office
AFCEA	- Air Force Civil Engineering Support Agency
AFCIC	- AF Communications & Information Center
AFCSC	- Air Force Cryptologic Service Center
AFESC	- Air Force Engineering Services Center
AFGWC	- Air Force Global Weather Central
AFIT	- Air Force Institute of Technology
AFLCMC	- Air Force Life Cycle Management Center
AFMC	- Air Force Materiel Command
AFMETCAL	- Air Force Metrology and Calibration Office
AFMLO	- Air Force Medical Logistics Office
AFOSI	- Air Force Office of Special Investigation
AFOTEC	- Air Force Operational Test & Evaluation Center
AFPC	- Air Force Personnel Center

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AFPSL	- AF Primary Standards Lab
AFR	- Air Force Reserve
AFSOC	- AF Special Operations Command
AFSPC	- Air Force Space Command
AIA	- Air Intelligence Agency
ALC	- Air Logistics Center
AMC	- Air Mobility Command
ANG	- Air National Guard
ASC	- Aeronautical Systems Center
AETC	- Air Education Training Command
AU	- Air University
AWS	- Air Weather Service
CIA	- Central Intelligence Agency
DGSC	- Defense General Support Center
DLA	- Defense Logistics Center
DOE	- Department of Energy
DPSC	- Defense Personnel Support Center
DSCC	- Defense Supply Center, Columbus
DTIC	- Defense Technical Information Center
ER	- Eastern Range
ESC	- Electronic Systems Center
FAA	- Federal Aviation Agency
FBI	- Federal Bureau of Investigation
GSA	- General Services Administration
JCS	- Joint Chiefs of Staff
NATO	- North Atlantic Treaty Organization
OSD	- Office of the Secretary of Defense
PACAF	- Pacific Air Forces
USAF	- United States Air Force
USAFA	- United States Air Force Academy
USAFE	- United States Air Force Europe
USCENTCOM	- United States Central Command
USEUCOM	- United States European Command
USMC	- United States Marine Corps
USSTRATCOM	- United States Strategic Command
WP AFB	- Wright-Patterson AFB, OH

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### ***CONTRACT METHOD / TYPE ACRONYMS***

C	- Competitive
BA	- Basic Agreement
BOA	- Basic Ordering Agreement
BPA	- Blanket Purchasing Agreement
CS	- Cost Sharing
IDDQ	- Indefinite Delivery, Definite Quantity
IDIQ	- Indefinite Delivery, Indefinite Quantity
IDRT	- Indefinite Delivery, Requirements
Letter	- Letter
LH	- Labor-hour
MIPR	- Military Interdepartmental Purchase Request
MIPR-C	- Military Interdepartmental Purchase Request - Competitive
MIPR-OPT	- Military Interdepartmental Purchase Request - Option
MIPR-OTH	- Military Interdepartmental Purchase Request – Other
MIPR-SS	- Military Interdepartmental Purchase Request - Sole Source
OPT	- Option
OTH	- Other
PO	- Project Order
REQN	- Requisition
SS	- Sole Source
T&M	- Time and Materials
UCA	- Undefinitized Contract Action
WP	- Work Project

### ***CONTRACTED BY ACRONYMS***

11 WING	- 11th Support Wing, Washington, DC
ACC	- Air Combat Command, Langley AFB, VA
AEDC	- Arnold Engineering Development Center, Arnold AFB, TN
AAC	- Air Armament Center, Eglin AFB, FL
AEDC	- Arnold Engineering Development Center, Arnold AFB, TN
AETC	- Air Education and Training Command, Randolph AFB, TX
AFCIC	- Air Force Communications and Information Center, Washington, DC
AFCESA	- Air Force Civil Engineering Support Agency, Tyndall AFB, FL

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AFFTC	- Air Force Flight Test Center, Edwards AFB, CA
AFLCMC	- Air Force Life Cycle Management Center, Wright-Patterson AFB, OH
AFMC	- Air Force Materiel Command, Wright-Patterson AFB, OH
AFMETCAL	- Air Force Metrology and Calibration Office, Heath, Ohio
AFMLO	- Air Force Medical Logistics Office, Ft Detrick, MD
AIA	- Air Intelligence Agency, Kelly AFB, TX
AMC	- Air Mobility Command, Scott AFB, IL
ASC	- Aeronautical Systems Center, Wright-Patterson AFB, OH & Eglin AFB, FL
AFWA	- Air Force Weather Agency, Offutt AFB, NE
DGSC	- Defense General Support Center, Richmond, VA
DPSC	- Defense Personnel Support Center, Philadelphia, PA
ER	- Eastern Range, Patrick SFB, FL
ESC	- Electronic Systems Center, Hanscom AFB, MA
HSC	- Human Services Center, Brook AFB, TX
OC-ALC	- Oklahoma City Air Logistics Center, Tinker AFB, OK
OO-ALC	- Ogden Air Logistics Center, Hill AFB, UT
SMC	- Space & Missile Systems Center, Los Angeles AFB, CA
US STRATCOM	- US Strategic Command, Offutt AFB, NE
WACC	- Washington Area Contracting Center, Washington DC
WR	- Western Range, Vandenberg SFB, CA
WR-ALC	- Warner-Robins Air Logistics Center, Robins AFB, GA
AFSPC	- Air Force Space Command, Peterson AFB, CO
HQ ANG	- Headquarters, Air National Guard, Washington, DC
USAFE	- United States Air Force Europe, Ramstein AB, GE
USAFA	- United States Air Force Academy, Colorado Springs, CO

### ***IDENTIFICATION CODES***

Code "A"	- Line items of material which have been approved for Air Force service use.
Code "B"	- Line items of material that have not been approved for Service use
OBAN	- Operating Budget Account Number, 2-digit code for unit allocated funds

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603036F / <i>Modular Advanced Missile</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	73.250	105.238	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	178.488
643036: <i>Armament Demonstration and Validation</i>	-	73.250	105.238	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	178.488
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

This program, BA 4, PE 0603036F Armament Demonstration and Validation, project 643036, Modular Advanced Missile (MAM) is not a new start. This project has transitioned to another program element

The Armament Demonstration and Validation Program Element provides key linkage between Research and Development, and fielding of advanced capabilities. It will develop, mature, and demonstrate new or emerging armament technologies, processes, interfaces, mission planning, special test equipment, and resources. Armament Demonstration and Validation will design, develop, and perform demonstrations of prototypes and technologies to inform future acquisition and production decisions. Efforts are focused on current and future requirements and technologies, reduce life-cycle costs, and increased competition for system capability upgrades. Activities leverage the efforts of the Science and Technology community. This effort will include lab, bench, integration, ground and air demonstrations and validation of emerging/evolving technologies and systems via weapon scalable/modular architecture and Weapon Government Reference Architecture (GRA) compliant system performance.

This effort will mature and demonstrate the tenants of model based systems engineering, modular open systems architecture, agile software development, modeling, simulation and analysis, and extend these tenants to improve manufacturing processes.

This effort implements Digital Acquisition tenants of Open, Agile, and Digital; builds and establishes industrial base innovation around the program's enterprise for modularity and adaptability for the life cycle of the weapons system. Leverages common component development, in collaboration with other weapon systems, to reduce redundant costs between systems with similar subsystems requirements. Invests in analytical, data management, digital environments, networks, facilities, and security infrastructure upgrades supporting development of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions. Expands program office staff, facilities, and security infrastructure to support the required classification levels for this program's activities. Engages with DoD, DAF, and industry stakeholders to refine threat analysis, refine inventory requirements, and plan upgrade requirements. Capitalizes on and incorporates successful laboratory research and development efforts applicable to this program's capability.

"This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. "

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603036F / <i>Modular Advanced Missile</i>
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This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	75.688	105.238	130.767	0.000	130.767
Current President's Budget	73.250	105.238	0.000	0.000	0.000
Total Adjustments	-2.438	0.000	-130.767	0.000	-130.767
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-2.438	0.000	-130.767	0.000	-130.767

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Title:</b> Modular Advanced Missile (MAM)</p> <p><b>Description:</b> The Modular Advanced Missile (MAM) project will develop, mature, and demonstrate air launched modular missile technologies, processes, and resources. MAM will reduce risk to future air launched missile programs by designing, developing, integrating, and testing various modular missile subsystems and tools to inform future missile acquisition and production decisions.</p> <p><b>FY 2024 Plans:</b> In FY24 funding realigned to a different PE.</p> <p><b>FY 2025 Plans:</b> No planned work on this project under this PE</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> No planned work on this project under this PE</p>	73.250	105.238	0.000
<p><b>Title:</b> Emerging &amp; Enabling Armament Technology</p> <p><b>Description:</b> Conduct risk reduction and prototyping activities on emerging and enabling technologies to inform future acquisition and production decisions for the armament portfolio, informed by internal and external stakeholders.</p>	0.000	0.000	0.000

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603036F / <i>Modular Advanced Missile</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b><i>FY 2024 Plans:</i></b> No planned work on this project under this PE			
<b><i>FY 2025 Plans:</i></b> No planned work on this project under this PE			
<b>Accomplishments/Planned Programs Subtotals</b>	73.250	105.238	0.000

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
Accomplish studies, analysis, concept demonstration, prototyping and engineering; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive contracts and/or other obligating documentation considered most appropriate by the obligating and performing agencies involved.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603036F / <i>Modular Advanced Missile</i>	<b>Project (Number/Name)</b> 643036 / <i>Armament Demonstration and Validation</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Risk Reduction	C/FPIF	Various : TBD	-	61.967	Jun 2023	105.238		-		-		-	Continuing	Continuing	-
Emerging & Enabling Armament Technology	C/Various	Various : TBD	-	1.000	May 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	62.967		105.238		-		-		-	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Other Government Costs	TBD	TBD : TBD	-	3.271	Jun 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	3.271		-		-		-		-	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration	Various	Various : Various	-	7.012	May 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	7.012		-		-		-		-	Continuing	Continuing	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	73.250	105.238	-	-	-	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603036F / <i>Modular Advanced Missile</i>	<b>Project (Number/Name)</b> 643036 / <i>Armament Demonstration and Validation</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Modular Advanced Missile</i></b>	
Risk Reduction	
Other Government Costs	
Program Management Administration	
<b><i>Emerging &amp; Enabling Armament Technology</i></b>	
Emerging Technology	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603036F / <i>Modular Advanced Missile</i>	<b>Project (Number/Name)</b> 643036 / <i>Armament Demonstration and Validation</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Modular Advanced Missile</i></b>				
Risk Reduction	3	2023	2	2025
Other Government Costs	3	2023	2	2025
Program Management Administration	2	2023	2	2025
<b><i>Emerging &amp; Enabling Armament Technology</i></b>				
Emerging Technology	3	2023	4	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	7.401	6.237	3.820	0.000	3.820	3.914	3.996	4.141	4.222	Continuing	Continuing
64536A: <i>INTELLIGENCE EXPLOITATION TOOLS (IET)</i>	-	4.842	4.950	2.500	0.000	2.500	2.562	2.616	2.711	2.764	Continuing	Continuing
64537A: <i>INTELLIGENCE ANALYSIS CAPABILITIES (IAC)</i>	-	2.559	1.287	1.320	0.000	1.320	1.352	1.380	1.430	1.458	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

Intelligence Advanced Development (IAD) develops and demonstrates technology required to support warfighter needs for timely all source intelligence information. IAD supports global awareness, consistent battlespace knowledge, precision information, and the execution of time critical missions. IAD focuses on enhancing defense intelligence capabilities through exploration and development of innovative tools including data analytics for mining and exploitation, machine-learning, and software automation. IAD projects provide improved on-time information to the warfighter using new and existing data sources, streamlining data analysis, thus reducing the footprint required, and enhancing performance.

IAD requirements reflect specific warfighter and intelligence organization deficiencies at the tactical and operational levels as identified and prioritized by Air Combat Command (ACC). The Air Force Research Lab, Rome Research Site, Information Intelligence Systems and Analysis Division (AFRL/RIE), then works directly with users to meet the requirements, employing evolutionary approaches and integrating finished modules directly into the field. This PE expedites technology transition from the laboratory to operational users via rapid prototyping. IAD may also reallocate existing resources to support out-of-cycle new/updated warfighter requirements.

This program element received \$1.300M Ukraine Supplemental Funds in FY23.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$00.451M was expended for civilian pay expenses in this program element, and in FY24 \$00.466M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	7.401	6.237	3.813	0.000	3.813
Current President's Budget	7.401	6.237	3.820	0.000	3.820
Total Adjustments	0.000	0.000	0.007	0.000	0.007
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.007	0.000	0.007

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>			<b>Project (Number/Name)</b> 64536A / <i>INTELLIGENCE EXPLOITATION TOOLS (IET)</i>				
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
64536A: <i>INTELLIGENCE EXPLOITATION TOOLS (IET)</i>	-	4.842	4.950	2.500	0.000	2.500	2.562	2.616	2.711	2.764	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The mission is to develop prototypes which encompass several areas of intelligence exploitation including the advancement of all source correlation and fusion for the intelligence analyst. Projects include development of innovative data analytics, machine-learning, and automated software tools. The intent is to enhance the overall situational awareness for Air Force, DoD, and Coalition groups which have requirements to correlate various sources of intelligence information, including Communications Intelligence (COMINT), Electronics Intelligence (ELINT), Imagery Intelligence (IMINT), Geospatial Intelligence (GEOINT), Measurement and Signature Intelligence (MASINT), Signals Intelligence (SIGINT), Publicly Available Information (PAI) and others, in a timely manner. IET may reallocate existing resources to support out-of-cycle new/updated warfighter requirements.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Intelligence Exploitation Tools (IET)	4.842	4.950	2.500
<b>Description:</b> IET addresses the accurate and timely interpretation of various Intelligence data sources (such as digital imagery, video, documents, signals) by developing and evaluating methods to index, exploit, and manipulate disparate data products using analytics, machine-learning, and software automation. This provides the analyst with the ability to rapidly search and fuse multiple intelligence sources for improved situational awareness and to better detect anomalies. Cross domain tools enable data exploitation at multiple classification levels. In addition, methods to improve analysis of current and future foreign weapon systems are developed. IET provides enhanced warning and accuracy to allow national and military authorities a greater range of options to avert, diminish or control a crisis.			
<b>FY 2024 Plans:</b>			
- Completes tools to enhance, automate, correlate, & fuse multi-source, multi-domain intelligence, surveillance, and reconnaissance (ISR) data for National Air and Space Intelligence System (NASIC) situational awareness & threat assessment			
- Continues development of knowledge representation and reasoning tools for intelligent systems to gain ability to solve complex tasks associated with audio/video (A/V) data clustering/filtering using semantic embedding techniques			
- Continues development of the prediction of aircraft trajectory and behavior w/out real-time positioning information while assessing future behavior based on complex models derived from training data			
<b>FY 2025 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>	<b>Project (Number/Name)</b> 64536A / <i>INTELLIGENCE EXPLOITATION TOOLS (IET)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- Will complete the development and demonstration of the knowledge representation and reasoning tools for intelligent systems to gain ability to solve complex tasks associated with A/V data clustering/filtering using semantic embedding techniques</li> <li>- Will complete the development and demonstration of the prediction of aircraft trajectory and behavior w/out real-time positioning information while assessing future behavior based on complex models derived from training data</li> <li>- Will develop and integrate modernized, automated Battle Damage Assessment processes to rapidly collate data for intel analyst physical and functional damage assessment</li> </ul> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding decreased due to FY24 completion of one project and due to lifecycle transition of two projects from development to demonstration and transition.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	4.842	4.950	2.500

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Requirements for new/improved techniques for operational employment of simulation models are identified and prioritized by ACC. Development of the new/improved capabilities to meet these requirements is managed by Air Force Research Laboratory (AFRL) Rome Research Site. Prototype products (usually software), once evaluated by the users, are transitioned from the laboratory to the operational community in spirals. All major contracts within this project are awarded after full and open competition.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>	<b>Project (Number/Name)</b> 64536A / <i>INTELLIGENCE EXPLOITATION TOOLS (IET)</i>

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>IET</b>																												
Multi-source, multi-domain info fusion tool	████████████████████																											
Audio/video exploitation enhancements	████████████████████																											
Air traffic behavior prediction	████████████████████																											
Rapid Battle Damage Assessment									████████████████																			
FY24 IET Development, Evaluation & Prototype Release					████████████████																							
FY25 IET Development, Evaluation & Prototype Release									████████████████																			
FY26 IET Development, Evaluation & Prototype Release													████████████████															
FY27 IET Development, Evaluation & Prototype Release																	████████████████											
FY28 IET Development, Evaluation & Prototype Release																					████████████████							
FY29 IET Development, Evaluation & Prototype Release																									████████████████			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>	<b>Project (Number/Name)</b> 64536A / <i>INTELLIGENCE EXPLOITATION TOOLS (IET)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>IET</i></b>				
Multi-source, multi-domain info fusion tool	1	2023	4	2024
Audio/video exploitation enhancements	2	2023	4	2025
Air traffic behavior prediction	2	2023	4	2025
Rapid Battle Damage Assessment	2	2025	2	2026
FY24 IET Development, Evaluation & Prototype Release	1	2024	1	2026
FY25 IET Development, Evaluation & Prototype Release	1	2025	1	2027
FY26 IET Development, Evaluation & Prototype Release	1	2026	1	2028
FY27 IET Development, Evaluation & Prototype Release	1	2027	1	2029
FY28 IET Development, Evaluation & Prototype Release	1	2028	4	2029
FY29 IET Development, Evaluation & Prototype Release	1	2029	4	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>				<b>Project (Number/Name)</b> 64537A / <i>INTELLIGENCE ANALYSIS CAPABILITIES (IAC)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
64537A: <i>INTELLIGENCE ANALYSIS CAPABILITIES (IAC)</i>	-	2.559	1.287	1.320	0.000	1.320	1.352	1.380	1.430	1.458	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The mission is to provide continuing development and upgrades of threat analysis capabilities to produce integrated, predictive air and space intelligence to enable military operations, force modernization decisions, and policy making. Products from IAC allow the Intelligence Analyst to accelerate and increase the accuracy of threat estimates and system descriptions to deployed operational forces. Each of the development projects within the IAC program portfolio transition technologies to the operational communities through the incremental release of upgraded versions over a period of years as development projects progress towards the final configuration. IAC may reallocate existing resources to support out-of-cycle new/ updated warfighter requirements.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Intelligence Analysis Capabilities (IAC) Development	2.559	1.287	1.320
<b>Description:</b> IAC develops tools and algorithms for Intelligence Analysts with the ability to produce accurate, predictive, relevant, and timely intelligence that supports client processes, operational planning, and mission execution. Methods include data analytics techniques, machine-learning, and software automation. IAC develops new and upgraded analysis, modeling and simulation tools focused on intelligence production supporting AF operational and developmental all source analysis functions.			
<b>FY 2024 Plans:</b>			
- Continues development of analysis of geospatial features for DCGS making AI/ML models, datasets, predictions geospatially discoverable			
- Continues development of object detection algorithms within AI collaboration environment (Red Force) and enabling models on ground and aerial-based software platforms			
- Continues development of the NASIC C4ISR intel database w/ graphical visualization, discovery, and editing capabilities, to facilitate volume, quality, and timeliness of C4ISR support			
<b>FY 2025 Plans:</b>			
- Will complete development of analysis of geospatial features for DCGS making AI/ML models, datasets, predictions geospatially discoverable			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>	<b>Project (Number/Name)</b> 64537A / <i>INTELLIGENCE ANALYSIS CAPABILITIES (IAC)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
<p>- Will complete object detection algorithms within AI collaboration environment (Red Force) and enabling models on ground and aerial-based software platforms</p> <p>- Will continue development of NASIC C4ISR intel database w/ graphical visualization, discovery, and editing capabilities, to facilitate volume, quality, and timeliness of C4ISR support.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased due to inflation.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	2.559	1.287	1.320

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Requirements of new/upgraded intelligence analysis tools are identified and prioritized by the ACC. Development of capabilities to meet these requirements is managed by AFRL Rome Research Site. Prototype products (usually software), once evaluated by the users, are fielded in incremental capability spirals. All major contracts within this project are awarded after full and open competition.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force			<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>	<b>Project (Number/Name)</b> 64537A / <i>INTELLIGENCE ANALYSIS CAPABILITIES (IAC)</i>	

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>IAC</b>	
Tools to make AI/ML models, datasets, and predictions geospatially discoverable	
RedForce-compatible obj detection	
C4ISR intel database w/advanced capabilities	
Development and Integration of GMTI-related applications with NRO's Thresher	
FY24 IAC Development, Evaluation & Prototype Release	
FY25 IAC Development, Evaluation & Prototype Release	
FY26 IAC Development, Evaluation & Prototype Release	
FY27 IAC Development, Evaluation & Prototype Release	
FY28 IAC Development, Evaluation & Prototype Release	
FY29 IAC Development, Evaluation & Prototype Release	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603260F / <i>Intelligence Advanced Development</i>	<b>Project (Number/Name)</b> 64537A / <i>INTELLIGENCE ANALYSIS CAPABILITIES (IAC)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>IAC</b>				
Tools to make AI/ML models, datasets, and predictions geospatially discoverable	2	2023	4	2025
RedForce-compatible obj detection	2	2023	4	2025
C4ISR intel database w/advanced capabilities	2	2023	4	2025
Development and Integration of GMTI-related applications with NRO's Thresher	2	2023	4	2024
FY24 IAC Development, Evaluation & Prototype Release	1	2024	1	2026
FY25 IAC Development, Evaluation & Prototype Release	1	2025	1	2027
FY26 IAC Development, Evaluation & Prototype Release	1	2026	1	2028
FY27 IAC Development, Evaluation & Prototype Release	1	2027	1	2029
FY28 IAC Development, Evaluation & Prototype Release	1	2028	4	2029
FY29 IAC Development, Evaluation & Prototype Release	1	2029	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	13.718	21.298	24.799	0.000	24.799	25.381	25.901	25.834	26.345	Continuing	Continuing
642597: <i>Noncooperative Identification Subsystems</i>	-	11.613	18.565	21.957	0.000	21.957	22.507	22.968	22.908	23.360	0.000	143.878
642599: <i>Cooperative Identification Techniques</i>	-	0.069	0.076	0.120	0.000	0.120	0.084	0.086	0.086	0.088	0.000	0.609
643420: <i>Combat ID Database Development</i>	-	2.036	2.657	2.722	0.000	2.722	2.790	2.847	2.840	2.897	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

Combat Identification is the process of characterizing an entity in the battlespace. It is essential to determine if a battlespace entity is a friend, enemy, or neutral; this information provides battlespace commanders and aircrew with options, ranging from avoiding and monitoring to engagement. The Combat Identification team's mission is to identify new and promising technology candidates, evaluate the usefulness of the technologies, conduct demonstrations in operationally relevant environments, and coordinate strategies that expedite transition to more than one platform. This Program Element aims to integrate and transition new capabilities into fielded systems, and improve existing capabilities. The mission area consists of three projects: non-cooperative Combat Identification, cooperative Combat Identification, and Combat Identification database development.

Non-cooperative Combat Identification techniques do not depend on a response from the targeted platform - such as high range resolution radar that measures the length of a target. Cooperative Combat Identification systems require communication between two participating platforms. Combat Identification database development continues the maturation of target representations in all databases that enable non-cooperative and cooperative algorithms to perform correctly. Both non-cooperative and cooperative Combat Identification techniques are currently in the field, and are necessary elements of the kill chain that ensure mission success and reduce fratricide. Air Combat Command (ACC) established a Senior Advisory Group (SAG) as the governing authority to guide these efforts in partnership with AFRL/RV and SAF/AQR.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.0M was expended for civilian pay expenses in this program element and in FY24 0.0M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	13.718	21.298	24.756	0.000	24.756
Current President's Budget	13.718	21.298	24.799	0.000	24.799
Total Adjustments	0.000	0.000	0.043	0.000	0.043
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.043	0.000	0.043

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>				<b>Project (Number/Name)</b> 642597 / <i>Noncooperative Identification Subsystems</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
642597: <i>Noncooperative Identification Subsystems</i>	-	11.613	18.565	21.957	0.000	21.957	22.507	22.968	22.908	23.360	0.000	143.878
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Non-cooperative combat identification (CID) employs a number of sensing technologies and signal processing techniques designed to extract discriminating features from a battlespace entity (target). Specifically designed algorithms compare those extracted features to a tailored database to identify those targets. These technologies include: (A) non-cooperative Air Target Identification (ATID) technologies, (B) non-cooperative Ground Target Identification (GTID) technologies, and (C) Studies and Analysis, evaluating potential new technologies.

ATID technology development focuses on platform centric CID technologies that enhance capability to determine enemy air threats. A primary area of focus is in the development/implementation of the Joint Multi-platform Advanced Combat identification (JMAC) architecture, which is a framework that allows multiple sensors (on-board and off-board) to provide a robust combat identification solution; and efforts aimed at the discovery and generation of features from fielded sensors to supply data to JMAC. JMAC is evolving into the primary Department of Defense air target identification architecture. Other areas of focus include combat identification technologies that broaden the application of CID across air platforms utilizing larger air kill-webs planned for employment by the United States Air Force (USAF) and utilize assets in unmanned aerial system and space to improve and enable CID in future threat air engagements.

GTID development focuses on platform centric CID technologies that enhance capability to determine enemy ground threats. Primary areas of focus include transitioning CID capability for denied access environments using passive radio frequency and electronic warfare information, integrating radio-based technologies into the cockpit to increase confidence of target identification and situational awareness as well as reduce fratricides, and to demonstrate weapon-based combat identification back to the launch platform using a communication link from that launched weapon. GTID is also focused on developing technology to address efficiency and sustainability issues associated with the development, operation and maintenance of non-cooperative monostatic and bi-static synthetic aperture radar aided target recognition algorithms and databases. Other areas of focus include combat identification technologies that broaden the application of CID across air platforms utilizing larger air kill-webs planned for employment by the United States Air Force and utilize assets in unmanned aerial system and space to improve and enable CID in future threat ground engagements.

Studies and Analysis discovers novel technologies that are ready become transition-able projects, and includes Enhanced Combat ID (ECID), an activity to develop a robust ability to quantitatively evaluate promising combat identification technologies using enhanced modeling and simulation capabilities, database generation, database enhancement/employment (machine learning, deep learning, and artificial intelligence) to employ CID technologies in an operationally useful manner. The Studies and Analysis effort also performs early assessments of promising technologies through Concept Calls to determine if the program should incorporate them as a formal project within the CID portfolio.

Activities also include studies and analysis to support both current program planning and execution and future program planning.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642597 / <i>Noncooperative Identification Subsystems</i>

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.0M was expended for civilian pay expenses in this program element and in FY24 0.0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Title:</b> Studies</p> <p><b>Description:</b> The studies effort serves to analyze all aspects of Air Target Identification and Ground Target Identification projects to mature combat identification (CID) technologies within the CID investment strategy. The studies effort covers low Technology Readiness Level (TRL 4) efforts which are funded through CID concept call. Areas include but are not limited to automatic target recognition, denied area access CID, CID sensor feature extraction, CID database use optimization, rapid database creation/employment for CID, synthetic data, CID focused training, off-board sensor feature employment, on-board sensor feature employment, United States Air Force CID architecture enhancements.</p> <p><b>FY 2024 Plans:</b> Continue to conduct CID related studies. Continue modeling, simulation and analysis of CID technologies and also new Concept Call technology development. Continue machine learning and synthetic/real data operational use. Continue planning demonstrations in relevant operational environment. Continue development of a technical roadmap for CID Technologies to inform future studies.</p> <p><b>FY 2025 Plans:</b> - Continue to conduct CID related studies. - Continue modeling, simulation and analysis of CID technologies and also new Concept Call technology development. - Continue machine learning and synthetic/real data operational use. - Continue planning demonstrations in relevant operational environment. - Continue development of a technical roadmap for CID Technologies to inform future studies.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 increased compared to FY 2024 by \$1.166 million. Justification for this increase is due to an increased emphasis in Next Generation applications.</p>	1.250	1.200	2.366
<p><b>Title:</b> Air Target Identification</p> <p><b>Description:</b> The Air Target Identification (ATID) project discovers, matures and integrates features collected from any battlespace sensor into the Joint Multiplatform Advanced Combat Identification (JMAC) air target data-fusion architecture, and transitions the mode to tactical aircraft. Air Target Identification efforts include: (1) ATID Algorithm development, developing methods to extract and exploit features from fielded sensors to provide data to Joint Multiplatform Advanced Combat Identification;</p>	4.670	10.149	11.670

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642597 / <i>Noncooperative Identification Subsystems</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>(2) ATID Integration for combat platforms, F-16 Joint Multiplatform Advanced Combat Identification Open Mission System (OMS) Rapid Development (FJORD), the effort to demonstrate Joint Multiplatform Advanced Combat Identification on the F-16; the effort includes feature extraction/incorporation from the F-16 electronic warfare suite to enhance the JMAC. (3) ATID Integration for combat platforms, F-15 Joint Multiplatform Advanced Combat Identification (JMAC-15), investigating transition of JMAC into the F-15E/EX fleet. (4) ATID Algorithm development, exploration of sensor feature extraction for use within the JMAC architecture.</p> <p><b>FY 2024 Plans:</b> Continue maturation of sensor feature extraction algorithms. Continue maturation and effectiveness testing of the Joint Multiplatform Advanced Combat Identification algorithms on both F-16 and F-15; algorithm optimization on 4th generation air dominance platforms through software and hardware laboratory testing. Continue feature extraction use and database incorporation of extracted features. Continue flight demonstration and data analysis of feature extraction algorithms. Initiate JMAC integration efforts on 5th generation air dominance platforms. Continue integration planning for JMAC and non-JMAC CID on unmanned and space assets.</p> <p><b>FY 2025 Plans:</b> - Continue maturation of sensor feature extraction algorithms. - Complete maturation and effectiveness testing of the Joint Multiplatform Advanced Combat Identification algorithms on both F-16 and F-15. - Continue feature extraction use and database incorporation of extracted features. - Continue flight demonstration and data analysis of feature extraction algorithms. - Continue JMAC integration efforts on 5th generation air dominance platforms. - Continue integration planning for JMAC and non-JMAC CID on unmanned and space assets. - Initiate JMAC integration efforts on Air Force Command and Control Platforms</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 increased compared to FY 2024 by \$1.521 million. Justification for this increase is due to an increased emphasis in integration efforts on Command and Control Platforms.</p>			
<p><b>Title:</b> Ground Target Identification</p> <p><b>Description:</b> Ground Target Identification (GTID) technologies consist of (1) GTID Algorithm development, effective, affordable implementation of machine learning, artificial intelligence, and deep learning for tailored algorithms for synthetic aperture radar (SAR) automatic target recognition (ATR). (2) GTID Algorithm development for the use of synthetic databases to enhance SAR ATR use, training, expansion across combat platforms. (3) GTID Integration for combat platforms, Passive Radio-frequency Identification Environment (PRIDE), an effort to develop a bistatic synthetic aperture radar (SAR) automatic target recognition (ATR) capability useful in a denied access environment; (4) GTID Integration for combat platforms, Radio Identification (RID),</p>	5.693	7.216	7.921

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642597 / <i>Noncooperative Identification Subsystems</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>an effort to develop methods (including machine learning and artificial intelligence algorithms) paired with advances in software defined radios to provide ground emitter ID to improve aircrew situational awareness; and (5) GTID Integration for combat platforms, Kill-chain Weapon Integrated CID (KWIC), an effort that will use information from launched weapons through a back channel communication link to provide CID from within the hot battlespace. (6) GTID Algorithm development Exploration of sensor feature extraction for use within the Joint Multiplatform Advanced Combat Identification (JMAC) architecture.</p> <p><b>FY 2024 Plans:</b> Initiate development efforts toward identification of enemy targets in an actively denied ground environment (camouflage, concealment, denial and decoy conditions). This effort will look at sensor modes and sensor fusion to provide technical solutions to this critical challenge. Continue PRIDE efforts; finish Phase 2 efforts with an offline demonstration in Phase 2 and will ramp up for Phase 3. Continue CASE efforts; complete algorithm and database use optimization as new feature use cases are developed. Initiate integration of Kill-chain Weapon Integrated CID into program of record with potential for use application to be applied to other weapon systems. Continue planning for on-board/off-board sensor employment for JMAC and non-JMAC instantiations of CID on assets within United States Air Force planned kill-web to include both unmanned and space assets. Initiate ground components of JMAC architecture activity.</p> <p><b>FY 2025 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue development efforts toward identification of enemy targets in an actively denied ground environment (camouflage, concealment, denial and decoy conditions).</li> <li>- Continue PRIDE efforts; Phase 3 will demonstrate integrated capabilities.</li> <li>- Complete CASE efforts; transition technical projects to Air to Ground Analyst.</li> <li>- Continue integration of Kill-chain Weapon Integrated CID into program of record with potential for use application to be applied to other weapon systems.</li> <li>- Continue effort for on-board/off-board sensor employment for JMAC and non-JMAC instantiations of CID on assets within United States Air Force planned kill-web to include multidomain assets; demonstration of concepts.</li> <li>- Continue ground components of JMAC architecture activity.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 increased compared to FY 2024 by \$0.705 million. Justification for this increase is described in the plans above.</p>				
<b>Accomplishments/Planned Programs Subtotals</b>		11.613	18.565	21.957
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642597 / <i>Noncooperative Identification Subsystems</i>

**D. Acquisition Strategy**

Combat Identification develops technologies for exploitation by the United States Air Force (USAF) and other services. Award multiple, competitive contract vehicles emphasizing the use of government owned technologies, government off-the-shelf technology (GOTS), commercial off-the-shelf (COTS), and maximize the use of non-developmental items (NDIs). Management develops a technology to a point it can be demonstrated in a relevant operational environment.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642597 / <i>Noncooperative Identification Subsystems</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Concept Call - Low Shot Learning for SAR ATR	MIPR	Sandia Ntrl Laboratory : Albuquerque, NM	-	0.120		0.000		0.000		-		0.000	0.000	0.120	-
Air Target Identification (ATID) - ID Algorithm / JMAC Features	C/CPFF	Various : Various	-	2.512	Feb 2023	6.017	Feb 2024	6.696		-		6.696	Continuing	Continuing	-
Air Target Identification (ATID) - Air Platform (F16/F15/F35/F22) JMAC Integration	C/CPFF	Multiple : Various	-	2.087	Dec 2022	2.217	Dec 2023	2.470		-		2.470	Continuing	Continuing	-
Air Target Identification (ATID) - Study 1	C/CPFF	Not specified. : TBD	-	0.200	Jan 2023	0.450	Jan 2024	0.500		-		0.500	Continuing	Continuing	-
Air Target Identification (ATID) - Study 2	C/CPFF	Not specified. : TBD	-	0.271	Nov 2023	0.168	Nov 2024	0.186		-		0.186	Continuing	Continuing	-
Air Target Identification (ATID) - Study 3	MIPR	Not specified. : TBD	-	-		0.350	Aug 2024	0.400		-		0.400	Continuing	Continuing	-
Ground Target Identification (GTID) - ID Algorithm / JMAC Features	C/CPFF	Various : Various	-	2.700	Apr 2023	4.700	Apr 2024	5.230		-		5.230	Continuing	Continuing	-
Ground Target Identification (GTID) - PRIDE	C/CPFF	Multiple : Various	-	1.319	Jun 2023	0.000		1.164		-		1.164	Continuing	Continuing	-
Ground Target Identification (GTID) - KWIC	C/CPFF	Multiple : Various	-	-		0.943	Dec 2023	1.020		-		1.020	Continuing	Continuing	-
Ground Target Identification (GTID) - Study 1	C/CPFF	Not specified. : TBD	-	0.283	Feb 2023	0.400	Feb 2024	0.450		-		0.450	Continuing	Continuing	-
Ground Target Identification (GTID) - Study 2	C/CPFF	Not specified. : TBD	-	0.271	Nov 2023	0.168	Nov 2024	0.190		-		0.190	Continuing	Continuing	-
Ground Target Identification (GTID) - Study 3	MIPR	Not specified. : TBD	-	-		0.300	Aug 2024	0.000		-		0.000	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642597 / <i>Noncooperative Identification Subsystems</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>				-	9.763	-	15.713	-	18.306	-	-	18.306	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ECID MS&A	C/CPFF	ACC : Langley, AFB, VA	-	0.250		0.700		0.000		-		0.000	0.000	0.950	-
ATID/GTID MS&A	Various	Various : Various	-	0.000		0.400		0.500		-		0.500	0.000	0.900	-
ATID/GTID JMAC	C/Various	Various : Various	-	0.600		0.000		0.900		-		0.900	0.000	1.500	-
<b>Subtotal</b>				-	0.850	-	1.100	-	1.400	-	-	1.400	0.000	3.350	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Data Collection	MIPR	TBD : TBD	-	0.400		1.152		1.360		-		1.360	0.000	2.912	-
<b>Subtotal</b>				-	0.400	-	1.152	-	1.360	-	-	1.360	0.000	2.912	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFRL PMA	Various	Various : Various, OH	-	0.600		0.500		0.891		-		0.891	0.000	1.991	0.000
Management Services	C/CPFF	TBD : TBD	-	-		0.100		-		-		-	0.000	0.100	-
<b>Subtotal</b>				-	0.600	-	0.600	-	0.891	-	-	0.891	0.000	2.091	N/A





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642597 / <i>Noncooperative Identification Subsystems</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Studies</b>				
ATID/GTID Study - CID DE	1	2023	4	2023
ATID Study - eJMAC	1	2023	2	2024
GTID Study - Low Shot	1	2023	3	2023
GTID Study - Multi-Look	1	2023	3	2023
GTID Study - ePRIDE	1	2023	2	2024
GTID Study - Rare Targets	3	2023	4	2024
ATID/GTID Study - TBD 1	1	2024	2	2025
ATID/GTID Study - TBD 2	3	2024	4	2025
<b>Air Target Identification</b>				
ATID Algorithm DRAGON	1	2023	4	2028
ATID Integration - JMPS Demo	1	2023	4	2023
ATID Integration - FJORD	1	2023	4	2024
ATID Integration - JMAC15	1	2023	3	2025
ATID Integration - Next Gen	3	2024	2	2029
ATID Integration - C2 Platforms	4	2024	4	2027
<b>Ground Target Identification</b>				
GTID Algorithm AGHAST	1	2023	4	2028
GTID Integration - PRIDE	1	2023	4	2025
GTID Integration - RID	1	2023	4	2024
GTID Integration - KWIC	1	2024	2	2027
GTID Integration - Next Gen	1	2026	4	2029

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force			<b>Date:</b> March 2024	
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642597 / <i>Noncooperative Identification Subsystems</i>		

<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
GTID Integration - UAV Platforms	1	2026	4	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>				<b>Project (Number/Name)</b> 642599 / <i>Cooperative Identification Techniques</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
642599: <i>Cooperative Identification Techniques</i>	-	0.069	0.076	0.120	0.000	0.120	0.084	0.086	0.086	0.088	0.000	0.609
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Cooperative Combat Identification (CID) employs technologies required to rapidly identify friendly platforms. The program develops, integrates and evaluates technologies that provide Air Force platforms with a means of positively identifying an air or ground platform as a friendly, via active or passive cooperative identification capabilities. The recent major effort funded by this project ensures availability of a Mode 5 upgrade path for implementing ground and air platforms across the Air Force fleet. The Department of Defense International Air Traffic Control Radar Beacon System (ATCRBS) Identification Friend or Foe (IFF) Mark XIIA/B System Program Office (AIMSPO) has system level interoperability testing and certification responsibilities for the present Mark XIIB system, development and integration of new Identification Friend or Foe (IFF) system capabilities, and development/integration of civil Mode S capabilities into Mark XIIB Identification Friend or Foe equipment. The AIMSPO ensures Identification Friend or Foe equipment/platform functionality in accordance with established standards and ensures total system interoperability to meet Department of Defense/Service mission areas (e.g. Offensive Counter Air, Defensive Counter Air, and Integrated Air and Missile Defense). This project transitioned to PE 0207420F at the end of FY 2021; all FY 2022 and beyond funding for the maturation and fielding of the Mark IIB system (Mode 5 Level 2B) moved to the above PE. This Project (642599) is preserved to initiate work on a follow-on cooperative system (Mode 6), and as such will remain in PE 0603742F. Initial studies related to Mode 6 began in FY 2023

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.0M was expended for civilian pay expenses in this program element and in FY24 0.0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Cooperative Follow-on System	0.069	0.076	0.120
<b>Description:</b> Perform studies to identify potential paths forward for a new Identification Friend or Foe (IFF) system. Evaluate weakness in the current Mode 5 Identification Friend or Foe (IFF) system to inform required research areas. Establish transition path for current production/support to next generation cooperative system or systems. Continue evaluation of technologies necessary to employ operational useful next generation cooperative identification systems in conjunction with current system.			
<b>FY 2024 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642599 / <i>Cooperative Identification Techniques</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Continue studies for identifying the technologies necessary for next generation cooperative IFF. Initiate transition path planning for technology incorporation of USAF platforms.  <b>FY 2025 Plans:</b> - Continue studies for identifying the technologies necessary for next generation cooperative IFF. - Continue transition path planning for technology incorporation of USAF platforms.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> - FY 2025 increased compared to FY 2024 by \$0.044 million. Justification for this increase is described in plans above.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.069	0.076	0.120

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Combat Identification develops technologies for exploitation by the United States Air Force (USAF) and other services. Award multiple, competitive contract vehicles emphasizing the use of government owned technologies, government off-the-shelf technology (GOTS), commercial off-the-shelf (COTS), and maximize the use of non-developmental items (NDIs). Management develops a technology to a point it can be demonstrated in a relevant operational environment.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642599 / <i>Cooperative Identification Techniques</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Cooperative Identification Techniques</i></b>	
Studies	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 642599 / <i>Cooperative Identification Techniques</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Cooperative Identification Techniques</i></b>				
Studies	1	2023	4	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>				<b>Project (Number/Name)</b> 643420 / <i>Combat ID Database Development</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
643420: <i>Combat ID Database Development</i>	-	2.036	2.657	2.722	0.000	2.722	2.790	2.847	2.840	2.897	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Database Initiative (DBI) is a project designed to remove the "hard-coded" static identification (ID) parameters (typically updated every 4-5 years) from the host platform's sensor(s) and replace them with parameterized values that are more easily and rapidly updated when new intelligence inputs come available (this allows maximum flexibility to tailor each aircraft's Combat Identification (CID) database(s) based on assigned theater of operation, threat country of interest, and assigned mission tasks).

This project primarily consists of four objectives: A.) determining a sensor's capability to capture target features for CID, B) designing and developing a database to contain the CID features identified in Objective A, C) developing techniques to generate the requisite features, and D) provide CID features developed from measured or modeled data. This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification technologies.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Combat Identification capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.0M was expended for civilian pay expenses in this program element and in FY24 0.0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Database Development	2.036	2.657	2.722
<b>Description:</b> Develop techniques to remove the "hard-coded" static ID parameters from the host platform's sensor and replace them with parameterized values that are dynamic.			
<b>FY 2024 Plans:</b> Continue collecting data to populate the databases for developmental test/debug. Continue developing techniques to remove the "hard-coded" static ID parameters from the host platform's sensor and replace them with parameterized values for Joint Multi-sensor Advanced Combat Identification (JMAC) architecture. Add additional supported sensor modalities into the JMAC architecture.			
<b>FY 2025 Plans:</b> - Continue collecting data to populate the databases for developmental test/debug.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 643420 / <i>Combat ID Database Development</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
- Continue developing techniques to remove the "hard-coded" static ID parameters from the host platform's sensor and replace them with parameterized values for Joint Multi-sensor Advanced Combat Identification (JMAC) architecture; adding additional supported sensor modalities into the JMAC architecture.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> - FY 2025 increased compared to FY 2024 by \$0.065 million. Justification for this increase is described in plans above.			
<b>Accomplishments/Planned Programs Subtotals</b>	2.036	2.657	2.722

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Combat Identification develops technologies for exploitation by the United States Air Force (USAF) and other services. Implement end product investment in government organizations that will maintain database infrastructures and utilize information to inform combat identification (CID) across all USAF platforms. Use of competitive contract awards and existing contract vehicles emphasizing the use of government owned technologies, government off-the-shelf technology (GOTS), commercial off-the-shelf (COTS), and maximize the use of non-developmental items (NDIs). Management develops a technology to a point it can be demonstrated in a relevant operational environment.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 643420 / <i>Combat ID Database Development</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Combat ID Database Development</i></b>	
Combat ID Feature Development	
Combat ID Database Development	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603742F / <i>Combat Identification Technology</i>	<b>Project (Number/Name)</b> 643420 / <i>Combat ID Database Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Combat ID Database Development</i></b>				
Combat ID Feature Development	1	2023	4	2029
Combat ID Database Development	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603790F / NATO Research and Development
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	4.295	2.208	4.498	0.000	4.498	4.610	4.706	4.876	4.972	0.000	30.165
64NATO: <i>Nato Coop R&amp;D</i>	-	4.295	2.208	4.498	0.000	4.498	4.610	4.706	4.876	4.972	0.000	30.165
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Funds are used for air, space, and cyber international cooperative research, and development (ICR&D) agreements with North Atlantic Treaty Organization (NATO) member states, major non-NATO allies and friendly foreign countries. Each of the approved ICR&D projects are required to have a concluded international agreement (IA), prior to funds being released, that implements the provisions of Title 10 U.S. Code, Section 2350a. This legislation (Title 10 U.S. Code, Section 2350a) authorizes funds to significantly improve U.S. and allied conventional defense capabilities by leveraging the best defense technologies, eliminating costly duplication of R&D efforts, accelerating the availability of defense systems, and promoting US and allied interoperability or commonality. These funds will not be used for government civilian salaries, permanent construction, or spent overseas. This program element funds the implementation of DAF ICR&D agreements in (1) Basic Research (2) Applied Research (3) Advanced Technology Development (4) Advanced Component Development and Prototypes (5) System Development and Demonstration and (6) RDT&E Management Support.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	4.295	2.208	4.490	0.000	4.490
Current President's Budget	4.295	2.208	4.498	0.000	4.498
Total Adjustments	0.000	0.000	0.008	0.000	0.008
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.008	0.000	0.008

**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<b>Title:</b> International Cooperative Research and Development	4.295	2.208	4.498	0.000	4.498

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603790F / NATO Research and Development
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**C. Accomplishments/Planned Programs (\$ in Millions)**

**Description:** Supports bi- and multi-lateral international agreements that meet DAF RDT&E objectives and goals. Each of the projects receiving NATO R&D funding must meet 2 or more of the following requirements: enhance warfighter capabilities; increase coalition interoperability; accelerate the availability of defense systems; strengthen coalition partnerships; gain access to the best technologies, capabilities, techniques, and/or facilities/ test ranges; build or sustain partnerships/influence with strategically important nations; and eliminate duplication of R&D efforts.

**FY 2024 Plans:**

FY2024 ICR&D projects involved RDT&E in the areas of: directed energy; hypersonics; autonomy; human performance; information systems; aerospace systems; munitions; materials and manufacturing; sensors; machine learning; space situational awareness; missile warning; military satellite communications; global positioning systems; responsive space capabilities; cyber network defense; quantum communication; deep space imaging; synthetic aviation fuel; information assurance; and space vehicles. Bilateral and multilateral cooperative agreements, in the above areas, are with the following countries: Australia, Canada, Estonia, France, Germany, India, Israel, Netherlands, Norway, Singapore, South Korea, Spain, Sweden, and the United Kingdom.

**FY 2025 Base Plans:**

Continue FY2024 ICR&D projects in: directed energy; hypersonics; autonomy; information systems; munitions; materials and manufacturing; sensors; space situational awareness; military satellite communications; global positioning systems; responsive space capabilities; cyber network defense; quantum communication; deep space imaging; synthetic aviation fuel; and space vehicles. FY2025 will focus on: artificial intelligence; positioning, navigation, and timing; non-chrome engine coating; unmanned aerial vehicles; collision avoidance; counter agile radar; small scalable kinetic weapons; fabrication; 3D printing; mission resilience; wearable sensors; deep space radars, and compact high power microwave. Bilateral and multilateral cooperative agreements, in the above areas, are with the following countries: Australia, Canada, Denmark, Estonia, Germany, India, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Singapore, South Korea, Sweden, and the United Kingdom.

**FY 2025 OCO Plans:**

\$0 are planned for FY 2024 OCO Plan.

**FY 2024 to FY 2025 Increase/Decrease Statement:**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603790F / NATO Research and Development
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Funding increase will return the ICR&D effort to full funding ensuring the DAF can strengthen strategically important global partnerships and meet wafighter needs for the best capabilities to meet national security objectives.					
<b>Accomplishments/Planned Programs Subtotals</b>	4.295	2.208	4.498	0.000	4.498

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDTE 04 0603790F: <i>NATO Research and Development</i>	-	-	0.000	0.000	0.000	-	-	-	-	0.000	0.000

**Remarks**

**E. Acquisition Strategy**  
 A principal goal of the NATO Cooperative R&D program is to effectively utilize the resources invested by the US and our allies in air, space, and cyber ICR&D projects. This program element provides the critical funding incentive needed to pursue air, space and cyber related ICR&D agreements and helps to (a) leverage USAF and allied resources through cost sharing and economies of scale; (b) exploit the best US and allied technologies for equipping coalition forces; (c) demonstrate areas of commonality or interoperability with our allies; and (d) accelerate the availability of defense technology and systems. Candidate projects are reviewed against DAF goals, DoD objectives, and warfighter needs prior to being approved. An international agreement defining project objectives, responsibilities, and costs is required prior to release of funds. To obtain these funds and ensure service commitment, projects are selected from existing or new RDT&E programs funded in the Future Years Defense Plan (FYDP). At a minimum, approved ICR&D projects must show that the project office is matching approved funding and allied funding will be equal to the total US DoD funding. Additional funding outside NATO Cooperative R&D program is the responsibility of the project/program office.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603790F / NATO Research and Development	<b>Project (Number/Name)</b> 64NATO / Nato Coop R&D

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b><i>NATO Coop R&amp;D</i></b>																												
FY 2025 Projects - Call Letter																												
FY 2025 Projects - Initial Project Review																												
FY 2025 Projects - Agreement development																												
FY 2025 Projects - DAF Project Review Panel																												
FY 2025 Projects - International Agreement is staffed, negotiated, and concluded																												
FY 2025 Projects - RDT&E cooperative project work																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603790F / NATO Research and Development	<b>Project (Number/Name)</b> 64NATO / Nato Coop R&D

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>NATO Coop R&amp;D</b>				
FY 2025 Projects - Call Letter	1	2023	2	2023
FY 2025 Projects - Initial Project Review	2	2023	3	2023
FY 2025 Projects - Agreement developent	3	2023	1	2024
FY 2025 Projects - DAF Project Review Panel	1	2024	1	2024
FY 2025 Projects - International Agreement is staffed, negotiated, and concluded	1	2024	4	2024
FY 2025 Projects - RDT&E cooperative project work	1	2025	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Missile - Dem/Val</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	44.751	45.319	119.197	0.000	119.197	91.584	73.250	136.982	126.651	0.000	637.734
641020: <i>ICBM Guidance Applications</i>	-	1.500	0.000	39.757	0.000	39.757	44.480	44.299	25.306	10.563	0.000	165.905
641022: <i>ICBM Reentry Vehicle Applications</i>	-	15.766	0.000	62.044	0.000	62.044	42.289	25.789	97.905	101.950	0.000	345.743
641024: <i>ICBM Command &amp; Control (C2) Applications</i>	-	0.000	0.000	10.044	0.000	10.044	4.008	1.002	0.000	0.000	0.000	15.054
644209: <i>Long Range Planning (LRP)</i>	-	27.485	45.319	7.352	0.000	7.352	0.807	2.160	13.771	14.138	0.000	111.032

**A. Mission Description and Budget Item Justification**

The Intercontinental Ballistic Missile (ICBM) Demonstration/Validation (Dem/Val) program ensures the development of strategic capability in response to the Nuclear Posture Review, recommendations of the United States Strategic Command (USSTRATCOM) Strategic Advisory Group, USSTRATCOM Commander Guidance, and the Defense Science Board Task Force on Nuclear Deterrence.

ICBM Dem/Val provides responsive solutions to address emerging threats and issues through technology insertion and technology application for legacy and future ICBM systems, and other common strategic deterrent mission areas. The ICBM Dem/Val program conducts technology maturation and risk reduction activities for new capabilities to support Minuteman (MM) III sustainment, MM III-to-LGM-35A Sentinel weapon system transition, and future ICBM systems development. ICBM Dem/Val conducts advanced component development and prototyping to validate emerging strategic technologies and future upgrades to the ICBM enterprise. Efforts will identify methods to improve system performance, develop potential future Reentry Vehicle (RV) designs, mitigate evolving threats, reduce life-cycle costs, and develop/expand modeling and simulation. Additionally, ICBM Dem/Val will provide experimental platforms for weapon qualification activities, improve nuclear safety and surety, ensuring both the viability and durability of strategic missile systems.

The ICBM Dem/Val program will develop key enabling engineering tools for the ICBM mission to include Model Based Systems Engineering (MBSE), test software, and modernization of existing analytical tools. This program will leverage modular system, open architecture, and agile software development to build key enabling engineering tools and future upgrades to ICBMs.

Please note: All FY24 funding in ICBM Dem/Val in the FY24 PB was consolidated into the Long Range Planning (LRP) Project 644209. In this FY25 PB budget submission, the Air Force has distributed funding across all Projects within this PE to support ongoing activities and better align projects to their purpose and increase clarity in this portfolio for FY25.

The FY 2025 funding request was reduced by \$1.685M to account for the availability of prior year execution balances.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0603851F / <i>Intercontinental Ballistic Missile - Dem/Val</i>

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2023, 0.000M was expended for civilian pay expenses in this program element, and in FY 2024, 0.000M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	46.100	45.319	56.756	0.000	56.756
Current President's Budget	44.751	45.319	119.197	0.000	119.197
Total Adjustments	-1.349	0.000	62.441	0.000	62.441
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.341	0.000			
• Other Adjustments	-0.008	0.000	62.441	0.000	62.441

**Change Summary Explanation**

FY25 budget increase reflects investment in this portfolio's technology maturation efforts to deliver future ICBM capabilities.

FY25 funding request was reduced by \$1.685M to account for the availability of prior year execution balances.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>				<b>Project (Number/Name)</b> 641020 / <i>ICBM Guidance Applications</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
641020: <i>ICBM Guidance Applications</i>	-	1.500	0.000	39.757	0.000	39.757	44.480	44.299	25.306	10.563	0.000	165.905
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Guidance Applications Program (GAP) any necessary studies and assesses both legacy and future ICBM Guidance System technology applications. Efforts are focused on current and future requirements and technologies, reduced life-cycle costs, and increased nuclear safety and surety. Activities leverage the efforts of the science and technology community and are coordinated with the Navy strategic applications program to enhance synergy and avoid duplication. Key elements include developing responsive technologies with common applications for future strategic guidance capabilities. This program also includes any needed nuclear surety, certification, and system vulnerability assessments.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2023, 0.000M was expended for civilian pay expenses in this program element, and in FY 2024, 0.000M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Guidance Applications Program	1.500	0.000	39.757
<b>Description:</b> Develop and mature advanced guidance technologies and concepts, including improved inertial measurement units, other sensors, and associated electronics to support future ICBM guidance requirements.			
<b>FY 2024 Plans:</b> The following projects were executed out of LRP (644209) for FY24, but are applicable to Guidance Applications: <ul style="list-style-type: none"> <li>•Continue Revolutionary Radar research for prototyping and test navigation aids.</li> <li>•Continue radiation-hardened advanced microelectronics to ensure availability of electronics that can provide state-of-the-art performance and survive strategic radiation environments.</li> <li>•Continue development of a micro-electro mechanical system for potential insertion into the future ICBM systems.</li> </ul>			
<b>FY 2025 Plans:</b> <ul style="list-style-type: none"> <li>•Continue Revolutionary Radar research for prototyping and test navigation aids.</li> <li>•Continue radiation-hardened advanced microelectronics to ensure availability of electronics that can provide state-of-the-art performance and survive strategic radiation environments.</li> <li>•Continue development of a micro-electro mechanical system for potential insertion into the future ICBM systems.</li> </ul>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 641020 / <i>ICBM Guidance Applications</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>•Begin Experimental Flight Test (EFT3) efforts to provide ICBM launches for testing experimental guidance technologies to support tech maturation.</li> <li>•Respond to evolving warfighter priorities and emerging requirements.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to Air Force realignment of funding between Projects to better align efforts within the Dem/Val portfolio.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	1.500	0.000	39.757

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 05 PE 0605238F: <i>Ground Based Strategic Deterrent EMD</i>	3,434.623	3,746.935	3,721.024	-	3,721.024	3,791.551	3,568.798	2,890.209	2,012.009	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

Accomplish studies, analyses, concept development and engineering; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive contracts and/or other obligating documentation considered most appropriate by obligating and performing agencies involved. Current effort deliverables to include strategic grade guidance prototypes to support multiple ongoing Air Force initiatives.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 641020 / <i>ICBM Guidance Applications</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GAP Micro-Electronic Module System, Advanced Fuzing	Various	Various : Various	-	1.500	Dec 2022	-		4.719	Dec 2024	-		4.719	Continuing	Continuing	-
GAP Revolutionary Radar	Various	Various : SNL	-	-		-		2.850	Dec 2024	-		2.850	Continuing	Continuing	-
GAP Radiation-Hardened Advanced Microelectronics	Various	Various : Various	-	-		-		11.679	Nov 2024	-		11.679	Continuing	Continuing	-
GAP EFT 3	Various	Various : Various	-	-		-		19.683	Feb 2025	-		19.683	Continuing	Continuing	-
GAP Rad Hard Non-Volatile memory	Various	Various : Various	-	-		-		0.576	Feb 2025	-		0.576	Continuing	Continuing	-
GAP Emerging Strategic Instrument Technology (Sparrow)	Various	Various : Various	-	0.000	Dec 2022	-		-		-		-	0.000	0.000	-
<b>Subtotal</b>			-	1.500		-		39.507		-		39.507	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GAP, Program Support Costs	C/Various	Various : Various	-	0.000	Dec 2022	-		0.250	Dec 2024	-		0.250	Continuing	Continuing	-
<b>Subtotal</b>			-	0.000		-		0.250		-		0.250	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		-	1.500	-	39.757	39.757	Continuing	Continuing	N/A

**Remarks**

- EFTs require two years of funding prior to the launch year to support planning/execution activities. The EFT program provides a standing, enduring EFT capability for new ICBM technologies in relevant environments. The ICBM Dem/Val program anticipates executing EFT launches on a near-annual basis to support several developing technologies as well as to maintain a ready launch capability for new and emerging technologies for potential inclusion of future ICBM programs of record.
- EFT 3 will meet combined industrial technology demonstration needs between Dem/Val, other programs, and the national laboratories.



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 641020 / <i>ICBM Guidance Applications</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>GAP</b>				
GAP Micro-Electronic Module System, Advanced Fuzing (2023)	1	2023	4	2023
GAP Micro-Electronic Module System, Advanced Fuzing (2025-)	1	2025	4	2026
GAP Revolutionary Radar	1	2025	3	2028
GAP Radiation-Hardened Advanced microelectronics	1	2025	4	2029
GAP EFT 3	2	2025	1	2028
GAP Rad hard Non-Volatile memory	2	2025	4	2027
GAP Emerging Strategic Instrument Technology (Sparrow)	1	2023	4	2023

**Note**

- In FY2025, funding for some efforts was transferred to better align projects with their purpose and to increase clarity within this portfolio:
- Micro-Electronic Module System, Advanced Fuzing transferred from Project 644209 (LRP) to 641020 (GAP)
- Revolutionary Radar transferred from Project 644209 (LRP) to 641020 (GAP)
- Radiation-Hardened Advanced Microelectronics transferred from Project 644209 (LRP) to 641020 (GAP)
- EFT 3 will begin in FY25 and will meet the combined technology demonstration needs between Dem/Val, other programs, and the national laboratories.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Missile - Dem/Val</i>				<b>Project (Number/Name)</b> 641022 / <i>ICBM Reentry Vehicle Applications</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
641022: <i>ICBM Reentry Vehicle Applications</i>	-	15.766	0.000	62.044	0.000	62.044	42.289	25.789	97.905	101.950	0.000	345.743
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Reentry Vehicle Applications Program (RVAP) ensures the ICBM force is equipped with the safest, most reliable, most survivable reentry systems, and explores options for common, multi-mission capabilities. The program enables a responsive engineering infrastructure by developing modeling/simulation, ground and flight test platforms to support reentry system qualifications. The program ensures the availability of long-lead components and materials while identifying life-cycle cost reduction opportunities. In addition, the program matures and tests advanced reentry system technologies and designs to meet future capability requirements. This includes conducting any necessary studies and assessing technology applications relevant to Mk12A, Mk21, Mk21A and future ICBM reentry systems by maturing technologies and demonstrating/validating concepts and leveraging investments by the science & technology community and Navy reentry systems applications program. Testing may occur on a space-available basis on Air Force and Navy Force Development Evaluation (FDE) flights.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2023, 0.000M was expended for civilian pay expenses in this program element, and in FY 2024, 0.000M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Reentry Vehicle Applications Program	15.766	0.000	62.044
<b>Description:</b> Mature, evaluate, and test reentry system materials, technologies, and vehicles including modeling/simulation, and ground and flight test platforms for use in current and future strategic applications.			
<b>FY 2024 Plans:</b> The following projects were executed out of LRP (644209) for FY24, but are applicable to Reentry Vehicle Applications: •Continue the future system demonstrator effort to create telemetric equipment, collecting & transmitting various component performance test data throughout launch, flight, and reentry. •Begin Experimental Flight Test (EFT2) efforts to provide ICBM launches to test experimental payloads supporting tech maturation.			
<b>FY 2025 Plans:</b> •Continue the future system demonstrator effort to create telemetric equipment, collecting & transmitting various component performance test data throughout launch, flight, and reentry.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 641022 / <i>ICBM Reentry Vehicle Applications</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>•Initiate payload prototype development research to build and demonstrate component/subsystem prototypes.</li> <li>•Continue Experimental Flight Test (EFT2) efforts to provide ICBM launches to test experimental payloads supporting tech maturation.</li> <li>•Respond to evolving warfighter priorities and emerging requirements.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to Air Force realignment of funding between Projects to better align efforts within the Dem/Val portfolio.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	15.766	0.000	62.044

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 05 PE 0605238F: <i>Ground Based Strategic Deterrent EMD</i>	3,434.623	3,746.935	3,721.024	-	3,721.024	3,791.551	3,568.798	2,890.209	2,012.009	Continuing	Continuing
• RDTE 07 PE 0101328F: <i>ICBM Reentry Vehicles</i>	112.282	475.415	629.928	-	629.928	740.334	955.013	710.312	332.728	Continuing	Continuing
• RDTE 03 0603273F: <i>Science &amp; Technology for Nuclear Re-entry Systems</i>	27.031	70.321	95.200	-	95.200	126.990	164.077	170.016	173.586	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

Studies, analyses, limited engineering, and pre-prototype hardware development will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive contracts and/or other obligating documentation considered most appropriate by obligating and performing agencies involved. Current effort deliverables include various technologies for ICBM re-entry vehicles including modeling and simulation software, alternate high temperature materials, advanced concepts, and radiation-hardened microelectronics.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 641022 / <i>ICBM Reentry Vehicle Applications</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
RVAP Support 1.0	C/FFP	BAE Systems : Clearfield, UT	-	2.539	Jan 2023	-		-		-		-	0.000	2.539	-
RVAP Support 2.0	C/FFP	TBD : TBD	-	-		-		-		-		-	0.000	0.000	-
RVAP Study Support	C/FFP	Aerospace : Various	-	-		-		-		-		-	0.000	0.000	-
RVAP Engineering Support	C/FP	JHU/APL : Various	-	1.727	Oct 2023	-		-		-		-	0.000	1.727	-
<b>Subtotal</b>			-	4.266		-		-		-		-	0.000	4.266	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
RVAP EFT 2	Various	Various : Various	-	-		-		39.272	Jul 2025	-		39.272	Continuing	Continuing	-
RVAP Advanced payload technology demonstration	Various	Various : Various	-	-		-		8.585	Feb 2025	-		8.585	Continuing	Continuing	-
RVAP Future System Demonstrator	MIPR	Various : Various	-	3.667	Feb 2023	-		13.862	Nov 2024	-		13.862	0.000	17.529	-
RVAP Modeling and Simulation Programs	Various	Various : Various	-	0.500	Mar 2023	-		-		-		-	0.000	0.500	-
RVAP Advanced Concept Studies	Various	Various : Various	-	0.709	Dec 2022	-		-		-		-	0.000	0.709	-
RVAP Radiation-Hardened Advanced Microelectronics	Various	Various : Various	-	2.800	Mar 2023	-		-		-		-	0.000	2.800	-
RVAP Revolutionary Radar	Various	Various : Various	-	2.750	Feb 2023	-		-		-		-	0.000	2.750	-
RVAP Rad Hard Non-Volatile Memory	Various	Various : Various	-	-		-		-		-		-	0.000	0.000	-
RVAP Navigation Aids/Instrumentation	TBD	Not specified : TBD	-	-		-		-		-		-	0.000	0.000	-
<b>Subtotal</b>			-	10.426		-		61.719		-		61.719	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 641022 / <i>ICBM Reentry Vehicle Applications</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
RVAP Program Support Costs	Various	Various : Various	-	1.074	Nov 2022	-		0.325	Dec 2024	-		0.325	Continuing	Continuing	-
Travel	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	1.074		-		0.325		-		0.325	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	15.766		-		62.044		-		62.044	Continuing	Continuing	N/A

**Remarks**

- EFTs require two years of funding prior to the launch year to support planning and execution activities. The EFT program provides a standing, enduring EFT capability for new ICBM technologies in relevant environments. The ICBM Dem/Val program anticipates executing EFT launches on a near-annual basis to support several developing technologies as well as to maintain a ready launch capability for new and emerging technologies for potential inclusion of future ICBM programs.
- EFT 2 will meet combined technology demonstration needs between the national laboratories, the Dem/Val, and Mk21A programs, demonstrating critical industrial technologies.



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Missile - Dem/Val</i>	<b>Project (Number/Name)</b> 641022 / <i>ICBM Reentry Vehicle Applications</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>RVAP</b>				
RVAP EFT 2	4	2024	3	2027
RVAP EFT 2 Launch	2	2027	2	2027
RVAP Advanced Payload Technology Demonstration	1	2025	1	2027
RVAP Future System Demonstrator (2023)	1	2023	4	2023
RVAP Future System Demonstrator (2025-)	1	2025	4	2028
RVAP Modeling and Simulation Programs	1	2023	4	2023
RVAP Advanced Concept Studies	1	2023	4	2023
RVAP Rad Hard Advanced Microelectronics	1	2023	4	2023
RVAP Revolutionary Radar	1	2023	4	2023
RVAP Rad Hard Non-Volatile Memory	1	2023	4	2023
RVAP Navigation Aids/Instrumentation	1	2023	4	2023

**Note**

- EFT 2 award date above is pre-decisional and subject to change following the final contract award and range scheduling.
- In FY2025, funding for some efforts was transferred to better align efforts with their purpose and to increase clarity within this portfolio.
- EFT 2 transferred from Project 644209 (LRP) to 641022 (RVAP) to better align efforts to their purpose and increase clarity within this portfolio.
- Advanced payload technology demonstration (CM Lowrider) will begin in FY25.
- Future Systems Demonstrator (Corvus) transferred from Project 644209 (LRP) to 641022 (RVAP).

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Missile - Dem/Val</i>	<b>Project (Number/Name)</b> 641024 / <i>ICBM Command &amp; Control (C2) Applications</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
641024: <i>ICBM Command &amp; Control (C2) Applications</i>	-	0.000	0.000	10.044	0.000	10.044	4.008	1.002	0.000	0.000	0.000	15.054
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

The Command and Control Applications Program (C2AP) supports ICBM weapon system connectivity to the President and National Command Authorities. C2AP studies and assesses both legacy and future C2 system technologies. C2AP evaluates and develops assured, survivable, and secure communications and battlespace awareness between the missile Launch Control Centers and Launch Facilities essential for mission execution. Efforts include identifying and developing current and future technologies, as well as concepts that exploit state-of-the-art communications and information transfer techniques to both current and future ICBM systems. Products include studies, demonstrations, and tests such as ICBM Weapon System C2 (WSC2) architectures, networks, and systems to meet nuclear cC2 requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F or 0605833F. In FY 2023 \$0.000M was expended for civilian pay expenses in this program element, and in FY 2024 \$0.000M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b>Title:</b> Command and Control Application Program	0.000	0.000	10.044
<b>Description:</b> Examine and develop concepts for transforming ICBM WSC2 to meet current and future requirements.			
<b>FY 2024 Plans:</b> The following projects were executed out of LRP (644209) for FY24, but are applicable to Command & Control Applications: •Begin WSC2 research to build and demonstrate component/subsystems.			
<b>FY 2025 Plans:</b> •Continue WSC2 research to build and demonstrate component/subsystems. •Initiate end-to-end crypto effort to conduct a variety of cost-benefit studies to plan for future system upgrades and modifications.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to Air Force realignment of funding between Projects to better align efforts within the Dem/Val portfolio.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	10.044

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 641024 / <i>ICBM Command &amp; Control (C2) Applications</i>

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 05 PE 0605238F: <i>Ground Based Strategic Deterrent EMD</i>	3,434.623	3,746.935	3,721.024	-	3,721.024	3,791.551	3,568.798	2,890.209	2,012.009	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

Studies, analyses, limited engineering, will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive contracts and/or other obligating documentation considered most appropriate by obligating and performing agencies involved.





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 641024 / <i>ICBM Command &amp; Control (C2) Applications</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>C2AP</b>				
Weapon System Command and Control (WSC2)	1	2025	2	2027
End-to-End Crypto	1	2025	4	2027

**Note**  
 •In FY2025, within PE 0603851F, Weapon System Command and Control, WSC2 will be transferred from Project 644209 to 641024 to better align efforts to their purpose and increase clarity within this portfolio.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Missile - Dem/Val</i>				<b>Project (Number/Name)</b> 644209 / <i>Long Range Planning (LRP)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
644209: <i>Long Range Planning (LRP)</i>	-	27.485	45.319	7.352	0.000	7.352	0.807	2.160	13.771	14.138	0.000	111.032
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Long Range Planning (LRP) effort identifies, analyzes, and evaluates potential modifications to current and future ICBM Weapon Systems required to meet warfighter objectives related to executing flight tests, long-term sustainment, technology insertion, battle space awareness, employment, force structure, and future systems. The studies will focus on system supportability, operability, reliability, innovation, and maintainability. Options/concepts generated by these studies are evaluated for feasibility, system impacts, and cost. LRP supports and conducts testing in support of future weapon system development and deployment. Pre-milestone activities may be conducted for current and/or future ICBM weapon systems, which may include entry criteria for milestone activities enabling a rapid response to evolving warfighter priorities and emerging requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2023, 0.000M was expended for civilian pay expenses in this program element, and in FY 2024, 0.000M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Long Range Planning	27.485	45.319	7.352
<b>Description:</b> Analyze, study and plan current and future ICBM activities to meet requirements for long-term sustainment, novel technology insertion, employment force structure, and future systems.			
<b>FY 2024 Plans:</b> All funding in this program element is funded out of this project (644209), the following effort applicable to this project is: •Continue John's Hopkins University material support for thermal protection system solutions in addition to coordinated effort with future crypto solutions across the Air Force and OSD R & E partners.			
<b>FY 2025 Plans:</b> •Begin Small Business Innovative Research (SBIR) Phase III efforts. •Initiate Advanced Flight Test Demonstrator Dev & Integration Support to demonstrate RV and Counter measure tech in relevant flight environments. •Respond to evolving war-fighter priorities and emerging requirements.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 644209 / <i>Long Range Planning (LRP)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
•Conduct any necessary road map studies.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to Air Force realignment of funding between Projects to better align efforts within the Dem/Val portfolio.			
<b>Accomplishments/Planned Programs Subtotals</b>	27.485	45.319	7.352

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 05 PE 0605238F: <i>Ground Based Strategic Deterrent EMD</i>	3,434.623	3,746.935	3,721.024	-	3,721.024	3,791.551	3,568.798	2,890.209	2,012.009	Continuing	Continuing
• RDTE 07 0101328F: <i>ICBM Reentry Vehicles</i>	112.282	475.415	629.928	-	629.928	740.334	955.013	710.312	332.728	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

Studies, analyses, limited engineering, and pre-prototype hardware development will be accomplished; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive contracts and/or other obligating documentation considered most appropriate by obligating and performing agencies involved.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 644209 / <i>Long Range Planning (LRP)</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LRP Support	C/CPFF	BAE : Various	-	0.196	Aug 2023	3.500	Feb 2024	2.149	Feb 2025	-		2.149	Continuing	Continuing	-
LRP Study Support	C/CPFF	Aerospace : Various	-	-		-		-		-		-	0.000	0.000	-
LRP Engineering Support	C/CPFF	JHU/APL : Various	-	0.000	Aug 2023	1.000	Feb 2024	0.000	Feb 2025	-		0.000	Continuing	Continuing	-
<b>Subtotal</b>			-	0.196		4.500		2.149		-		2.149	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LRP Advanced Flight test demonstrator Development & Integration Support	Various	Various : Various	-	-		-		1.675	Nov 2024	-		1.675	Continuing	Continuing	-
LRP SBIR Phase III	Various	Various : Various	-	-		-		1.770	Dec 2024	-		1.770	Continuing	Continuing	-
LRP Experimental Flight Test 1	C/CPIF	Northrop Grumman : Various	-	17.600	Feb 2023	-		-		-		-	0.000	17.600	-
LRP Experimental Flight Test 2	TBD	TBD : TBD	-	-		28.500	Feb 2024	0.000	Jan 2025	-		0.000	0.000	28.500	-
LRP Virtual Environment Trainer Launch Facility Prototype Development	C/CPAF	Various : Various	-	-		-		-		-		-	0.000	0.000	-
LRP Revolutionary Radar	C/CPAF	Sandia : Various	-	0.000	Jan 2023	2.000	Feb 2024	0.000	Feb 2025	-		0.000	0.000	2.000	-
LRP Terminal Tracking & Scoring	TBD	TBD : TBD	-	-		1.245	Feb 2024	-		-		-	0.000	1.245	-
LRP Future System Demonstrator	MIPR	Various : Various	-	-		1.000	Feb 2024	0.000	Feb 2025	-		0.000	0.000	1.000	-
LRP Radiation-Hardened Advanced Microelectronics	Various	Various : Various	-	-		4.717	Feb 2024	0.000	Feb 2025	-		0.000	0.000	4.717	-
LRP Modeling and Simulation Programs	Various	Various : Various	-	-		0.500	Jan 2024	0.000	Jan 2025	-		0.000	0.000	0.500	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 644209 / <i>Long Range Planning (LRP)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LRP Micro-Electronic Module System, Advanced Fuzing	Various	Various : Various	-	-		1.500	Jan 2024	0.000	Jan 2025	-		0.000	0.000	1.500	-
LRP Weapon System Command and Control (WSC2)	TBD	TBD : TBD	-	9.189	Sep 2023	-		0.000	Nov 2024	-		0.000	0.000	9.189	-
LRP Strategic Independent Resilient Energy Systems (SIRES)	MIPR	Idaho National Lab : Idaho Falls, ID	-	0.500	Aug 2023	-		-		-		-	0.000	0.500	-
<b>Subtotal</b>			-	27.289		39.462		3.445		-		3.445	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LRP Program Support Costs	Various	Various : Various	-	0.000	Nov 2022	1.357	Jan 2024	1.758	Jan 2025	-		1.758	Continuing	Continuing	-
<b>Subtotal</b>			-	0.000		1.357		1.758		-		1.758	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		-	27.485	45.319	7.352	-	7.352	Continuing	Continuing	N/A

**Remarks**

- Adv Flight test Demonstrator Dev & Integration Support and studies starts in FY25
- SBIR Phase III is to continue to fund Small Business Innovation Research (SBIR) projects that started as phase I and phase II projects with SBIR funding



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851F / <i>Intercontinental Ballistic Mis sile - Dem/Val</i>	<b>Project (Number/Name)</b> 644209 / <i>Long Range Planning (LRP)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>LRP</b>				
Advanced Flight Test Demonstrator Development & Integration Support and studies	1	2025	4	2026
SBIR Phase III	1	2025	4	2029
LRP Experimental Flight Test (EFT) 1	1	2023	4	2024
LRP EFT 1 Launch (Jun 24)	3	2024	3	2024
LRP Experimental Flight Test (EFT) 2	2	2024	4	2024
LRP VET-LF	1	2023	3	2023
LRP Revolutionary Radar	1	2024	4	2024
LRP Terminal Tracking & Scoring	2	2023	4	2024
LRP Future System Demonstrator	1	2024	4	2024
LRP Radiation-Hardened Advanced Microelectronics	1	2024	4	2024
LRP Modeling and Simulation Programs	1	2024	4	2024
LRP Micro-Electronic Module System, Advanced Fuzing	1	2024	4	2024
LRP Weapon System Command and Control (WSC2)	1	2023	1	2023
LRP SIRES	1	2023	4	2023

**Note**

- In FY2025, funding for some efforts was transferred to better align efforts with their purpose and to increase transparency within this portfolio.
- EFT 2 transferred from Project 644209 (LRP) to 641022 (RVAP).
- Revolutionary Radar transferred from Project 644209 (LRP) to 641020 (GAP)
- Future Systems Demonstrator (Corvus) transferred from Project 644209 (LRP) to 641022 (RVAP)
- Radiation-Hardened Advanced Microelectronics transferred from Project 644209 (LRP) to 641020 (GAP)
- Micro-Electronic Module System, Advanced Fuzing transferred from Project 644209 (LRP) to 641020 (GAP)

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604001F / NC3 Advanced Concepts
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	5.098	10.011	10.148	0.000	10.148	10.180	10.260	10.266	10.469	0.000	66.432
646020: <i>NC3 Advanced Concepts</i>	-	5.098	10.011	10.148	0.000	10.148	10.180	10.260	10.266	10.469	0.000	66.432
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

Nuclear Command, Control, and Communications (NC3) Advanced Concepts are required for analysis, development and prototyping of next generation NC3 systems and subsystems. This program ensures a responsive design and development engineering infrastructure to address evolving Nuclear Deterrence Operations (NDO) mission requirements; emerging issues and technology insertion/technology application on the NC3 Weapon System (WS), future strategic systems/capability, and other common strategic areas where appropriate; and develop enhanced multi-use capabilities. The NC3 Advanced Concepts Program will provide technology maturation and risk reduction activities to support the AF NC3 Weapon System (AN/USQ-225). Activity will reduce life cycle costs, inform technology maturation & risk reduction efforts, improve system performance, mitigate evolving threats, and ensure both viability and durability of the AF NC3 Weapon System.

Additional details can be provided at a higher classification.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605831F and 0605833F. In FY24 0.000M was expended for civilian pay expenses in this program element, in FY25 0.000M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604001F / NC3 Advanced Concepts
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	5.098	10.011	10.131	0.000	10.131
Current President's Budget	5.098	10.011	10.148	0.000	10.148
Total Adjustments	0.000	0.000	0.017	0.000	0.017
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.017	0.000	0.017

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Title:</b> NC3 Advanced Concepts</p> <p><b>Description:</b> NC3 Advanced Concepts activities will include, but are not limited to: conducting studies, analysis, and prototyping; test bed activities; exercise participation; developing modeling and simulation of identified NC3 WS architecture; integrated NC3 WS testing, validation, and certification; and direct mission support contracts in support of next generation NC3 systems and sub-systems. NC3 Advanced Concepts ensures a responsive design and development engineering infrastructure to address evolving NDO.</p> <p><b>FY 2024 Plans:</b> Continue studies, analysis, and prototyping; test bed activities; exercise participation; develop modeling and simulation of identified NC3 WS architecture; integrated NC3 WS testing, validation, and certification; direct mission support contracts in support of next generation NC3 systems and sub-systems; rapidly respond to evolving warfighter priorities and warfighter requirements.</p> <p>Additionally, FY24 funding will support early development and risk reduction of emerging applicable technologies in such areas as antenna improvements, cyber resiliency, and software defined radio (SDR) enhancements which will inform evolving NC3 requirements as well as provide viable prototyping for testing and demonstration of technical capability. Funds will also support High Frequency (HF) engineering analysis to reduce technical risk and schedule for potential future program of record/requirement. Details can be provided at higher classification levels.</p> <p><b>FY 2025 Plans:</b></p>	5.098	10.011	10.148

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604001F / NC3 Advanced Concepts
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Continue studies, analysis, and prototyping; test bed activities; exercise participation; develop modeling and simulation of identified NC3 WS architecture; integrated NC3 WS testing, validation, and certification; direct mission support contracts in support of next generation NC3 systems and sub-systems; rapidly respond to evolving warfighter priorities and warfighter requirements.</p> <p>Additionally, FY25 funding will continue to support early development and risk reduction of emerging applicable technologies in such areas as antenna improvements, cyber resiliency, and network communications services which will inform evolving NC3 requirements as well as provide viable prototyping for testing and demonstration of technical capability. Funds will also continue to support High Frequency (HF) engineering analysis to reduce technical risk and schedule for potential future program of record/requirement. Details can be provided at higher classification levels.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increase from FY24 to FY25 is due to inflation.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	5.098	10.011	10.148

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
To conduct NC3 Advanced Concepts essential activities, a combination of competitively awarded contracts, sole source contracts, and/or other transaction authority, may be used to augment Air Force organic capabilities with technical skill sets from Federally Funded Research and Development Centers (FFRDCs), research laboratories, University-Affiliated Research Centers (UARCs), and industry Advisory and Assistance Services (A&AS) providers. All NC3 Advanced Concepts activities will be evaluated for promising technologies and considered for tech transition into the Air Force NC3 Weapon System.



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604001F / <i>NC3 Advanced Concepts</i>	<b>Project (Number/Name)</b> 646020 / <i>NC3 Advanced Concepts</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>NC3 Advanced Concepts</i></b>	
Studies, analysis, and prototyping	
Test bed activities and exercise participation	
Develop modeling and simulation of identified NC3 WS architecture	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604001F / <i>NC3 Advanced Concepts</i>	<b>Project (Number/Name)</b> 646020 / <i>NC3 Advanced Concepts</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>NC3 Advanced Concepts</i></b>				
Studies, analysis, and prototyping	1	2023	4	2029
Test bed activities and exercise participation	1	2023	4	2029
Develop modeling and simulation of identified NC3 WS architecture	1	2023	4	2029

**Note**  
NC3 Advanced Concepts (Level of Effort)

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	229.842	500.575	743.842	0.000	743.842	958.948	727.834	562.905	577.983	Continuing	Continuing
640141: <i>Advanced Battle Management System (ABMS)</i>	-	229.842	500.575	743.842	0.000	743.842	958.948	727.834	562.905	577.983	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

ABMS is the PE funding architecture and systems engineering (ASE), digital infrastructure, software and applications, and aerial networking for the DAF's primary contribution to the Combined Joint All-Domain Command and Control (CJADC2) warfighting concept, which the DAF formally refers to as the DAF BATTLE NETWORK. The DAF Program Executive Office for Command, Control, Communication, and Battle Management (DAF PEO C3BM) has the lead role in battle management and Command and Control (C2) capabilities for the DAF. This entails not only directing technical integration throughout the DAF but also holding acquisition authorities to develop and implement organic materiel solutions. These solutions aim to establish resilient and widely distributable command and control capabilities within the DAF BATTLE NETWORK. The ABMS PE portfolio funds the specific programs over which the DAF PEO C3BM exercises direct oversight in terms of cost, schedule, and performance. This encompasses both the management of these programs and the necessary architectural and systems engineering efforts to ensure effective technical coordination across the broader DAF infrastructure.

Additionally, DAF PEO C3BM has identified an initial array of approximately 50 core programs spanning various PEOs, whose organizations collectively form the C3BM Enterprise. These programs represent an evolving collection of systems that, when integrated together, are pivotal in contributing to the development of the DAF BATTLE NETWORK. Collaborating closely with the PEOs overseeing these core programs, DAF PEO C3BM will orchestrate technical integration of the DAF BATTLE NETWORK. This integration is essential to achieve the requisite operational decision advantage crucial for the triumph of the USAF, USSF, joint, and coalition forces in the face of evolving challenges. These inter-PEO initiatives encompass a spectrum of activities, such as technical and programmatic cooperation, comprehensive reporting, and seamless integration. With authority over technical architectures spanning the C3BM enterprise, DAF PEO C3BM will deliver C2 capabilities.

To provide a "best of breed" capability across the DAF and facilitate accelerated delivery of the DAF BATTLE NETWORK, DAF PEO C3BM has aligned activities within the ABMS PE portfolio with four major thrust areas:

Thrust Area 1 - "Architecture and Systems Engineering (ASE)" will 1) conduct Digital Engineering to support technical development activities, 2) conduct mission domain architecture development and analysis and perform enterprise integration through domain-specific Mission Integration Teams (MITs), 3) leverage an Operational Response Team (ORT) to facilitate quick reaction prototyping and experimentation in response to warfighter-led efforts and new relevant technologies. The culmination of these activities will entail the identification, capture, refinement, and formalization of capability gaps, requirements, standards, and interface specifications, as well as potentially novel technologies, collectively paving the way for a blueprint to successfully deliver an all-encompassing integrated DAF BATTLE NETWORK architecture that informs execution of the following 3 thrust areas listed below.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>	
<p>Thrust Area 2: "C3BM Digital Infrastructure (DI)" leverages the analysis, technical specifications and associated standards/formats produced by ASE to deliver a suite of fixed and deployable digital infrastructure solutions to enable global C2 and Battle Management (BM). To accomplish this, the following tasks are performed: 1) The Enterprise Systems Engineering Team (ESET) manages the ABMS Consortium to define the technical implementation of network architectures, style guides and standards that will facilitate integration of the larger DAF BATTLE NETWORK with ABMS (and vice versa); 2) build out of the physical DI Processing Nodes and DI Network (Software Defined Wide Area Network (SD-WAN), Tactical and Enterprise Cross Domain Solutions (CDS), and other similar requirements) that will enable the operational use of data and software to perform modern C2 functions at scale. DI activities include the Distributed Battle Management Node (DBMN), and support for DAF enterprise solutions; and 3) the ABMS Battle Lab to allow warfighters direct interaction with ABMS software development teams and prototypes in development, speeding up the feedback loop and product maturity.</p> <p>Thrust Area 3: "C3BM Software and Applications" provides a suite of battle management command and control (BMC2) applications and tools, conducted via two categories of activity. 1) Cloud-Based Command and Control (CBC2) is a suite of BMC2 applications and microservices in development for NORAD and USNORTHCOM &amp; PACAF. CBC2 efforts include line of effort (LOE) #1 for a SW Integrator, LOE #2 for Agile Software Development at scale with an Integrated Digital Environment (IDE) for Model-based systems engineering (MBSE), and LOE #3 for Continuous Integration and Continuous Deployment (CI/CD) software pipelines, platform, data ingest, fusion, transport, storage, and access. CBC2 depends on the fixed DI activities of Thrust Area #2 and expects to begin scaling to support additional combatant commanders in FY24. 2) Distributed Battle Management Applications (DBMA) will continue development and extension of CBC2 functionality to other DAF BATTLE NETWORK entities (e.g. the Tactical Operations Center Family of Systems, or TOC FoS) in line with Air Combat Command's (ACC) Common BMC2 Interface (CBI) concept. Integral to the C3BM Software and Applications Thrust Area is the imperative to seamlessly align and integrate with various efforts, including multiple DoD &amp; DAF software factories, centers of excellence dedicated to artificial intelligence and machine learning, and the DAF data fabric.</p> <p>Thrust Area 4: "C3BM Aerial Networking" will develop key technologies for the "final leg" connection of C3BM DI and Software/Applications to DAF platforms. Aerial Networking activities include: 1) the ongoing work for Capability Release #1 (CR #1) which is the first prototype effort for C3BM Aerial Networking to inform both future design and fielding decisions for other platforms and C2 functions to connect to C3BM DI. CR #1 includes platform integration and onboard tactical edge node capabilities for secure compute, and storage to host mission applications that increase aircrew situational awareness. 2) Following CR #1 is Phalanx Griffon (PG), a strategic aerial networks roadmap and acquisition strategy that will be codified in FY24, to extend C3BM aerial networking capabilities to tactically relevant aircraft. Phalanx Griffon will include continued development and maturation of multi-function processors, multi-function arrays, edge node hardware and software to host mission applications, and platform integration options to ease implementation and scaling.</p> <p>To ensure delivery of projects in each Thrust Area, and to ensure alignment of the broader DAF from a battle management perspective, ABMS PE funding provides for program management support, operational concept development in collaboration with the ABMS Cross-Functional Team, and portfolio integration to orchestrate delivery of the DAF BATTLE NETWORK.</p> <p>Investments in the ABMS portfolio of programs aligns USAF investment with USSF investment (e.g., Space Command and Control (C2) Program Element PE (1208248SF) and the MeshOne-T PE (1206760SF)) to eliminate duplication of effort while optimizing capability delivery to create the DAF BATTLE NETWORK deliverable.</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>	
<p>ABMS DI aligns with CAIS PE (0207431F) to provide a consistent set of capabilities, services and customer experience across all classification levels, and meets DAF requirements while ensuring compliance with Director of National Intelligence (DNI) requirements and minimizing duplication of effort.</p> <p>The total cost of the ABMS Capability Release #1: Airborne Edge Node Rapid Prototyping Middle Tier of Acquisition effort is 155.0 million, including RDT&amp;E and procurement of prototype units. The CR1 AEN RP program is fully funded across the Future Years Defense Program.</p> <p>The total cost of the Distributable Battle Management Node (DBMN) Phase II Tactical Operations Center-Light Rapid Prototyping Middle Tier of Acquisition effort is 201.1 million, including RDT&amp;E and procurement of prototype units. The DBMN Phase 2 TOC-L RP program is fully funded across the Future Years Defense Program.</p> <p>The total cost of the Deployable Digital Infrastructure Rapid Prototyping Middle Tier of Acquisition effort is 94.8 million, including RDT&amp;E and procurement of prototype units. The DDI RP program is fully funded across the Future Years Defense Program.</p> <p>The total cost of the Digital Infrastructure Network Major Release #1 Rapid Prototyping Middle Tier of Acquisition effort is 287.3 million, including RDT&amp;E and procurement of prototype units. The DI MR#1 RP program is fully funded across the Future Years Defense Program.</p> <p>The total cost of the Software Defined Wide Area Network Rapid Prototyping Middle Tier of Acquisition effort is 145.9 million, including RDT&amp;E and procurement of prototype units. The SD-WAN RP program is fully funded across the Future Years Defense Program.</p> <p>This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In PY 0.000M was expended for civilian pay expenses in this program element, and in CY 4.292M is forecasted for civilian pay expenses in this program element.</p> <p>This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&amp;P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	237.332	500.575	815.046	0.000	815.046
Current President's Budget	229.842	500.575	743.842	0.000	743.842
Total Adjustments	-7.490	0.000	-71.204	0.000	-71.204
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-7.490	0.000			
• Other Adjustments	0.000	0.000	-71.204	0.000	-71.204

**Change Summary Explanation**

FY 2023: Program reduced -7.490 million in total due to SBIR/STTR transfer in the year of execution.

FY 2025: The BY funding request was reduced by -71.204 million from previous PB to account for the availability of prior year execution balances.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> Architecture and Systems Engineering (ASE)	0.000	80.000	100.000
<b>Description:</b> Architecture and Systems Engineering (ASE) office is responsible for the technical integrity of the DAF BATTLE NETWORK as we integrate ABMS capabilities, the rest of the DAF's C2 systems, and other Services' capabilities under CJADC2. Architecture integration in system-of-systems mission threads and environments is critical to deliberately advancing the DAF's technological edge by informing architecture design, acquisition investments, system requirements for future capabilities, and acquisition baseline updates for current systems.			
<b>FY 2024 Plans:</b>			
Digital Engineering (DE):			
-Leverage, or create as necessary, a common DE approach and methodology for all the Mission Integration Teams to aggregate and analyze various cross-functional and cross-domain data products, and to then make them available to the C3BM Enterprise. Fund Model-Based Systems Engineering at the TS/SCI and SAP level for all ASE and DAF/OSD/Joint partners. This environment supports government sensitive C3BM and Joint partner planning and integration efforts. This DE environment is fully complementary to analogous contractor-led ABMS DE efforts.			
-Develop Modeling & Simulation capabilities to enable evaluation of C3BM systems virtually via software digital twins.			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Mission Domain Architectures (MDA) and Mission Integration Team (MITs):</p> <ul style="list-style-type: none"> <li>-Through MDA and MIT activities, ASE will perform the following functions in support of the broader success of the C3BM Enterprise.</li> <li>-Operational Analysis: Build models and provide mission value metrics for C3BM decisions. Invest in longer-lead modeling to enable rapid responsiveness to Mission Integration Team priorities set annually in consultation with C3BM Enterprise stakeholders. Fiscal Year 2023 initiated the build out of MIT capabilities spanning the air, space and maritime domains. Fiscal Year 2024 will complete this work and will scale out capability for land and homeland defense.</li> <li>-Architecture Modeling: Model interfaces and interactions for specified mission areas. Build team to support DAF programs, and OSD/Joint Staff on standards for integration.</li> <li>-System Engineering: Build team to manage artifacts in the DE environment related to tracking interfaces, roadmaps and progress.</li> <li>-Risk Reduction: Hold community-wide enterprise risk reviews yearly with different communities (operators, S&amp;T, Tech Advisors, cyber) and manage enduring risk register and provide senior leader products.</li> <li>-Test and Evaluation: Build team to analyze artifacts to test mission area architecture.</li> </ul> <p>Operational Response Team (ORT):</p> <ul style="list-style-type: none"> <li>-Prototype Integration and Experimentation: Continue operational integration and experimentation of the initial Digital tactical edge connectivity prototype as it transitions to C3BM Digital Infrastructure for further development.</li> <li>-Continue to prototype and experiment Deployable DI mobile solutions that provide multi-level security compute and storage able to host mission data, data management software, and mission applications at deployed C2 nodes. Support identification, orchestration, "shepherding" and potential investment in emergent C3BM technologies. Rapidly develop and execute experimentation and prototyping activities in support of ASE findings to mitigate risks or exploit opportunity identified during mission engineering or architecture development work.</li> <li>-C3BM Vignette Analysis: Continue Counter-C5ISR (Command and Control, Communications, Computers, Cyber, Intelligence, Surveillance, Reconnaissance, Targeting) numerical analysis, modeling, and simulation to assess impact of specific capabilities on the ability to protect US assets and achieve mission success to prioritize DAF investments and modernization.</li> </ul> <p><b>FY 2025 Plans:</b></p> <p>Digital Engineering (DE):</p> <ul style="list-style-type: none"> <li>-Continue to leverage, or create as necessary, a common DE approach and methodology for all the Mission Integration Teams to aggregate and analyze various cross-functional and cross-domain data products, and to then make them available to the C3BM Enterprise. Fund Model-Based Systems Engineering at the TS/SCI and SAP level for all ASE and DAF/OSD/Joint partners. This environment supports government sensitive C3BM and Joint partner planning and integration efforts. This DE environment is fully complementary to analogous contractor-led ABMS DE efforts.</li> </ul>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>-Continue to develop Modeling &amp; Simulation capabilities to enable evaluation of C3BM systems virtually via software digital twins.</p> <p>Mission Domain Architectures (MDA) and Mission Integration Team (MITs):</p> <p>-Operational Analysis: Continue to build models and provide mission value metrics for C3BM decisions. Invest in longer-lead modeling to enable rapid responsiveness to Mission Integration Team priorities set annually in consultation with C3BM Enterprise stakeholders.</p> <p>-Architecture Modeling: Continue to model interfaces and interactions for specified mission areas. Build team to support DAF programs, and OSD/Joint Staff on standards for integration.</p> <p>-System Engineering: Continue to develop and manage artifacts in the DE environment related to tracking interfaces, roadmaps and progress.</p> <p>-Risk Reduction: Continue to hold community-wide enterprise risk reviews yearly with different communities (operators, S&amp;T, Tech Advisors, cyber) and manage enduring risk register and provide senior leader products.</p> <p>-Test and Evaluation: Continue to analyze artifacts to test mission area architecture.</p> <p>Operational Response Team (ORT):</p> <p>-Prototype Integration and Experimentation: Continue operational integration and experimentation of the initial Digital tactical edge connectivity prototype as it transitions to C3BM Digital Infrastructure for further development.</p> <p>-Continue to prototype and experiment Deployable DI mobile solutions that provide multi-level security compute and storage able to host mission data, data management software, and mission applications at deployed C2 nodes. Support identification, orchestration, "shepherding" and potential investment in emergent C3BM technologies. Rapidly develop and execute experimentation and prototyping activities in support of ASE findings to mitigate risks or exploit opportunity identified during mission engineering or architecture development work.</p> <p>-C3BM Vignette Analysis: Continue Counter-C5ISR (Command and Control, Communications, Computers, Cyber, Intelligence, Surveillance, Reconnaissance, Targeting) numerical analysis, modeling, and simulation to assess impact of specific capabilities on the ability to protect US assets and achieve mission success to prioritize DAF investments and modernization.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p> <p>Fiscal Year 2025 budget increased due to adding architecture development to ensure the technical integrity of the system of systems integration across air, space, maritime, land, and homeland defense domains to integrate the DAF BATTLE NETWORK. Furthermore, integrated digital environment (IDE) efforts which started in FY24 are expected to scale across all 5 MITs in FY25 to provide a consistent engineering authoritative source of truth across all five MITs to enable development of C2 modeling and simulation (M&amp;S) frameworks to support integrated modeling and test in FY26 and beyond.</p>				
<b>Title:</b> C3BM Digital Infrastructure (DI)		97.923	258.721	376.405

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

**Description:** The C3BM DI effort reflects a composite of activities to deliver secure processing, connectivity and data management to the DAF BATTLE NETWORK. The ABMS DI activity orchestrates ongoing digital infrastructure activities to provide a multi-level security (i.e. unclassified to top secret) environment as a foundation for battle management C2 (BMC2) data and software across the space, airborne, and terrestrial domains. C3BM DI investments ensure the ability to connect the joint force and allow decision advantage at the tactical, operational, and strategic levels. In Fiscal Year 2024, C3BM DI started the initial phase of physical infrastructure procurement. Investments focus on hybrid commercial and tactical edge multi-level security, multi-cloud environments resulting in secure compute and storage capability. Solutions will provide tactical edge secure processing environments and tools to enable both "remote operations" and "on the move" operations when disconnected from the broader network and global environment. These secure processing solutions will host critical services such as robust data management solutions, zero-trust multi-level security applications, Artificial Intelligence (AI) algorithms and Machine Learning (ML) capabilities.

**FY 2024 Plans:**

Beginning in FY 2024, there are 3 major efforts within Thrust Area #2 - "C3BM Digital Infrastructure":

1. ABMS Digital Infrastructure (DI)
2. ABMS Consortium
3. ABMS Battle Lab

**ABMS Digital Infrastructure (DI):**

-ABMS DI invests in technologies and solutions to expose, transport, and host data and mission/infrastructure software through widely used commercial best practices and techniques such as Application Program Interfaces (APIs) and standardized data fabric solutions. This capability includes the capability for machine-assisted tagging of data across the DAF to enable rapid exploitation and processing. These techniques enable data to rapidly and securely move across multiple security levels and support decision making. High priority data management solutions include critical investments in zero-trust multi-level security applications, CDS, as well as AI/ML capabilities.

-ABMS DI connectivity-related focus areas include SD-WAN solutions, which will deliver capabilities to enable resilient, robust, communications and the transport of data globally, to the edge, and through space. This will include the software-defined networking and routing layer to enable content routing across connected nodes through both government and commercial communication paths. SD-WAN will integrate into existing and future connectivity solution efforts in order to bridge gaps across existing and future platforms. In partnership with ongoing USSF satellite communication efforts, ABMS will also leverage the rapidly advancing commercial satellite ecosystem to provide SD-WAN solutions that will ensure robust and resilient connectivity for the Joint Force.

	FY 2023	FY 2024	FY 2025

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<p>-ABMS will also develop Deployable DI solutions that provide a multi-level security compute and storage environment able to host mission data, data management software, and mission applications at deployed C2 nodes. Initial deployment locations include Wing Operations Centers (WOC) and Mission Generation Operations Centers (MGOC) supporting the Lead Wing concept for Agile Combat Employment (ACE). Deployable DI will include an interface to connect with ABMS SD-WAN and/or existing communications infrastructure, as needed.</p> <p>-The ABMS DI portfolio includes the ABMS Distributable Battle Management Node (DBMN), an edge instance of ABMS DI, aligned to the Tactical Operations Center-Light (TOC-L) concept for tactical C2 and a key part of ACC's BMC2 Roadmap. This effort provisions lightweight, scalable connectivity, data management, and edge compute/store for tactical edge BMC2.</p> <p>-ABMS DI will fund efforts related to content delivery, datalink integration, and scalable transport in tight partnership with operational MAJCOMs, Air Combat Command, the ABMS CFT, and C3BM ASE. As operational and technical requirements are refined, ABMS DI will look to accelerate development of acquisition strategies and propel additional efforts into execution.</p> <p>-ABMS DI will provide funding to the Space Systems Command MeshOne-T program and Space Data Fusion programs to provide resilient long-haul terrestrial data transport capacity for ABMS solutions delivered under the larger DAF PEO C3BM architecture and to facilitate the integration and processing of space data for the broader set of C3BM requirements. Space Data Fusion efforts are consistent with the scope of ABMS data-related efforts (see below for more details) by exposing and processing key data sets as needed.</p> <p><b>ABMS Consortium:</b></p> <p>-Continue ABMS Consortium activity comprised of industry partners, federally funded research and development centers (FFRDC), and USG stakeholders performing operational analysis, mission analysis, Systems Engineering, and integration of ABMS Digital Infrastructure.</p> <p>-Continue data architecture, data tagging, and data orchestration design solutions and prototypes that enable available data to be exposed, processed, and transferred within multi-level security ABMS cloud environments.</p> <p>-Continue maturing the extension of the ABMS DI to the tactical edge based on operator and ABMS CFT input.</p> <p>-Continue maturing CONUS and OCONUS clouds by adding more data types, data transfers across classification levels, establishing data and network management standards and tools (e.g., SD-WAN), and developing and hosting cloud-native applications (e.g., Cloud-Based C2, advanced targeting tools, air base air defense applications).</p> <p><b>ABMS Battle Lab:</b></p> <p>-Support experimentation efforts within the Battle Lab construct to accelerate requirements development.</p> <p>-Integrate with and expand Battle Lab connections to Joint Partners.</p> <p>-Begin deployment of ABMS Digital Infrastructure to the Battle Lab.</p>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>-Integrate with Airborne Edge Node (Tactical Edge Node Situational Awareness and Edge Processing) and Cloud-Based C2.</p> <p><b>FY 2025 Plans:</b> Beginning in FY 2024, there are three major efforts within Thrust Area #2 - "C3BM Digital Infrastructure":</p> <ul style="list-style-type: none"> <li>- Enterprise Systems Engineering Team (ESET, encompasses ABMS Consortium activities and other portfolio-level systems engineering activities)</li> <li>- ABMS Digital Infrastructure (DI)</li> <li>- ABMS Battle Lab</li> </ul> <p>Enterprise Systems Engineering Team (ESET):</p> <ul style="list-style-type: none"> <li>-Continue management of the ABMS Consortium activity comprised of industry partners, FFRDC, and USG stakeholders performing operational analysis, mission analysis, Systems Engineering, and integration of ABMS Digital Infrastructure.</li> <li>-Continue data architecture, data tagging, and data orchestration design solutions and prototypes that enable available data to be exposed, processed, and transferred within multi-level security ABMS cloud environments.</li> <li>-Continue maturing the extension of the ABMS DI to the tactical edge based on operator and ABMS CFT input.</li> <li>-Continue maturing CONUS and OCONUS clouds by adding more data types, data transfers across classification levels, establishing data and network management standards and tools (e.g., SD-WAN), and developing and hosting cloud-native applications (e.g., Cloud-Based C2, advanced targeting tools, air base air defense applications).</li> <li>-Expand locations and content in the collaborative, multi-security-level, enterprise systems engineering ecosystem for architecture and modeling development.</li> </ul> <p>ABMS Digital Infrastructure (DI):</p> <ul style="list-style-type: none"> <li>-Continue to invest in technologies and solutions to expose, transport, and host data and mission/infrastructure software through widely used commercial best practices and techniques such as Application Program Interfaces (APIs) and standardized data fabric solutions.</li> <li>-Continue development and implementation of DI Network Major Releases 1 and 2, including SD-WAN, content delivery, network monitoring and security solutions, data link integration, scalable transport, cross domain solutions, and others.</li> <li>-Continue to develop and implement Deployable, Fixed, and Mobile DI Node solutions that provide a multi-level security compute and storage environment able to host mission data, data management software, and mission applications at multiple echelons of command, including tactical and operational C2 nodes.</li> <li>-Continue rapid prototyping and prepare for rapid fielding of the ABMS Distributable Battle Management Node (DBMN), an edge instance of ABMS DI, aligned to the Tactical Operations Center-Light (TOC-L) concept for tactical C2 and a key contributor to ACC's BMC2 Roadmap. DBMN will conduct experimentation and testing at several developmental and operational exercises,</li> </ul>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>including Emerald Flag and Northern Edge. Integrate CBC2 Common Battle Management Interface into TOC-L system to maximize future interoperability.</p> <p>-Continue to fund efforts related to DI Network and DI nodes in collaboration with Major Commands, Combatant Commands, Component Major Commands, the ABMS CFT, and C3BM ASE. As operational and technical requirements are refined, ABMS DI will look to accelerate development of acquisition strategies and propel additional efforts into execution.</p> <p>ABMS Battle Lab:</p> <p>-Continue experimentation efforts within the Battle Lab construct to accelerate requirements development.</p> <p>-Continue to integrate with and expand Battle Lab connections to Joint Partners.</p> <p>-Continue deployment of ABMS Digital Infrastructure to the Battle Lab.</p> <p>-Prepare to support experimentation for Distributed Battle Management Applications (DBMA) and CBI.</p> <p>-Will expand coordination pathways between the collaborative, enterprise systems engineering ecosystem for the sharing of models between ABMS DI and the Battle Lab.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p> <p>Funding will increase significantly due to several acquisitions efforts that will be in development and fielding throughout Fiscal Year 2025, including DI Networks and DI Processing Nodes programs that planned to ramp up development activities from acquisition strategies and contracts awarded in FY 2024 and will have increasing cloud services and hardware expenses as a result. Additionally, DBMN will deliver 20 TOC-L prototype systems in FY 2025.</p>				
<p><b>Title:</b> C3BM Software and Applications</p> <p><b>Description:</b> Under Thrust Area #3, the C3BM Software and Applications effort encompasses ABMS portfolio activities that deliver applications to facilitate sensor and effects integration. These applications comprise front end (e.g., User Interface and User Experience, or UI/UX, Course of Action Recommendation tools, etc.) and back end microservices (data fusion, data brokering, track management, etc.). C3BM Software and Applications leverage current DAF enterprise solutions (e.g. Cloud One, Platform One, etc.), as well as ABMS DI solutions as they become available. C3BM Software and Applications develops C2 applications and integrates with DoD &amp; DAF Software Factories (e.g. Kessel Run, Kobayashi Maru, etc.) to eliminate duplicative development. These software efforts are complementary and are working to facilitate sharing of data and products from multiple domains and echelons of command to provide decision advantage. C3BM Software development activities are executed with a continuous integration/continuous delivery (CI/CD) model that places operators as a critical member of the team via MAJCOM-approved user agreements and drives agile software development activities to generate user feedback and consistent, high frequency product improvement.</p> <p>Cloud-Based C2 (CBC2):</p>		75.174	85.022	120.372

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

CBC2 modernizes battle management and command and control functions by replacing four existing C2 systems with modern Cloud-Based applications, enhanced by AI/ML, to create a common operating picture and decision aids. Initial development efforts are focused on delivery to Air Defense Sectors (ADS) in NORAD and USNORTHCOM (N&NC) as well as Pacific Air Defense Sector (PADS) and Alaska ADS (AADS) in INDOPACOM; however, CBC2 is also working to provide hardware and software solutions that are extensible to additional Combatant Commands (COCOMs). This software suite equips operators executing tactical C2 in CONUS and OCONUS ADS with modernized applications to ingest data from civilian and military sensors, fuse it with additional sources of data, conduct mission planning with machine-to-machine ingest of higher echelon tasking products, apply force accountability and risk assessments to a dynamic air picture with thousands of tracks, facilitate real time computing and scoring of Courses of Action (CoA) in order to speed F2T2EA timelines, and provide a UI/UX for battlespace awareness. CBC2 development follows commercial best practices for agile software development with an industry software integrator driving warfighter delivery across several independently contracted microservice developers.

**Distributed Battle Management Apps (DBMA):**

-The extensibility of CBC2 aligns to Operational Imperative #2 initiatives associated with distributed battle management and ACC's Common BMC2 Interface (CBI). Additional software development teams will be established to increase the number of C2 services that the core CBC2 applications for N&NC provide. Requirements currently under development for joint tactical integrated fire control and long range kill chains will trigger development activities for applications and advanced targeting tools development for maturing operational concepts including those that are needed at the Tactical Operations Center Family of Systems (TOC FoS) and other maturing operational concepts. DBMA work will also encompass coalition agreements, partnerships and data sharing for enhanced battle management activities.

**FY 2024 Plans:**

**Cloud-Based C2 (CBC2):**

- Continue design /development activities focused on developing a scalable and extensible data-cloud architecture that leverages AI/ML applications and produces a common operating picture.
- Continue developing shared visualization of multiple sources, automated and fused representation of air domain.
- Ingest, fuse, and analyze data from military, government, and commercial sources to multi-classification cloud environments.
- Continue to develop automated and operator-selectable tasking of assets, voice, data and C2.
- Continue integrating new and existing development teams with ABMS Software Integrator to create a micro-services CBC2 system that is fully government owned.
- Continue building micro-services-based software applications that will enable distributed battle management.
- Continue efforts to design and build infrastructure to support CBC2 to include but not limited to: platform, cloud, cloud outposts, data transport, tactical data bus, identity management, zero trust network, cyber defense and data storage solutions.

FY 2023	FY 2024	FY 2025

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>-Continue quarterly minimum viable product (MVP) releases, iteratively building out the Cloud-Based C2 application/software baseline and addressing product backlogs associated with N&amp;NC deliveries in pursuit of full operational capability (FOC).</p> <p>Distributed Battle Management Apps:</p> <ul style="list-style-type: none"> <li>-Continue development based on core CBC2 tactical C2 software suite to extend microservices functionality to support distributed BMC2 operational concepts and CBI requirements and associated capability needs.</li> <li>-Build microservices consistent with CBC2 development approach and in response to capability needs associated with joint tactical integrated fire control, long range kill chains, and other BMC2 functions.</li> <li>-Continue developing shared visualization consistent with CBC2 with automated and fused representation of multiple domains.</li> <li>-Continue integrating new and existing development teams with ABMS Software Integrator to create a microservices CBC2 system that is fully government owned.</li> <li>-Continue quarterly minimum viable product (MVP) releases, iteratively building out extensibility to additional distributed battle management operational concepts (e.g. Tactical Operations Center Family of Systems).</li> <li>-Facilitate transition of advanced targeting tools (e.g. developed under the Hawkeye program) by ensuring compatibility with ABMS digital infrastructure and battle management software.</li> </ul> <p><b>FY 2025 Plans:</b></p> <p>CBC2:</p> <ul style="list-style-type: none"> <li>-Continue design/development activities focused on developing a scalable and extensible data-cloud architecture at multiple classification levels and different REL environments in partnership with ABMS Digital Infrastructure, and other DAF enterprise solutions that leverages AI/ML applications and produces a common operating picture.</li> <li>-Continue developing shared visualization of multiple sources, automated and fused representation of air domain.</li> <li>-Ingest, fuse, and analyze data from military, government, and commercial sources to multi-classification cloud environments.</li> <li>-Continue to develop automated and operator-selectable tasking of assets, voice, data and C2.</li> <li>-Continue integrating new and existing development teams with ABMS Software Integrator to create a micro-services CBC2 system that is fully government owned.</li> <li>-Continue building micro-services-based software applications that will enable distributed battle management.</li> <li>-Continue efforts to design and build infrastructure to support CBC2 in partnership with ABMS DI to include but not limited to: platform, cloud, cloud outposts, data transport, tactical data bus, identity management, zero trust network, cyber defense and data storage solutions.</li> <li>-Continue quarterly minimum viable capability (MVCR) releases, iteratively building out the Cloud-Based C2 application/software baseline and addressing product backlogs associated with N&amp;NC deliveries.</li> </ul> <p>Distributed Battle Management Apps:</p>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>-Continue development based on core CBC2 tactical C2 software suite to extend microservices functionality to support distributed BMC2 operational concepts and CBI requirements and associated capability needs.</p> <p>-Continue to build microservices consistent with CBC2 development approach and in response to capability needs associated with joint tactical integrated fire control, long range kill chains, and other BMC2 functions.</p> <p>-Continue developing shared visualization consistent with CBC2 with automated and fused representation of multiple domains.</p> <p>-Continue integrating new and existing development teams with ABMS Software Integrator to create a microservices system that is fully government owned.</p> <p>-Continue quarterly MVCR, iteratively building out extensibility to additional distributed battle management operational concepts (e.g. Tactical Operations Center Family of Systems).</p> <p>-Continue facilitation of transition of advanced targeting tools (e.g. developed under the Hawkeye program) by ensuring compatibility with ABMS digital infrastructure and battle management software.</p> <p>-Facilitate data sharing and collaboration with foreign coalition partners in delivering battle management capabilities.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increase in FY25 to support fielding to NORAD, NORTHCOM, and INDOPACOM simultaneously. C3BM applications activities continue to focus on delivering for CBC2 applications by the end of FY25. Software teams will contribute to DBMA activities during FY25 as defined by FY24 acquisition strategy development, with existing software teams transitioning from CBC2 as needed and new developer teams being added to support follow-on integration activities for distributed battle management operational concepts and ACC's CBI with the Tactical Operations Center Family of Systems throughout FY25.</p>			
<p><b><i>Title:</i></b> C3BM Aerial Networking</p> <p><b><i>Description:</i></b> Under Thrust Area #4, the C3BM Aerial Networking efforts encompass two efforts to deliver secure processing and connectivity architecture solutions that will enable sensor and effects integration with DAF platforms. Aerial Networking leverages government reference architecture and the ongoing ABMS DI investments to connect select Tac Air assets and C2 functions to the ABMS cloud at the tactical edge, enhancing Situational Awareness and decision making at multiple echelons.</p> <p>Aerial Networking's first implementation, known as Capability Release #1 (CR #1), is a prototype communications subsystem, platform integration, and a tactical edge node planned to be demonstrated on a KC-46 in FY24. Onboard secure compute/storage infrastructure will host mission-relevant applications and be developed as a roll-on/roll-off capability using commercial solutions. C3BM Aerial Networking includes a follow-on effort, known as Phalanx Griffon (PG), which will extend AN architecture and capabilities to tactically relevant aircraft based on maturing operational concepts and aerial network road mapping activities. This capability will be targeted toward tactical aircraft such as the F-15E/EX, which can be traced back to Operational Imperative #2 operational analysis and ACC input. Aerial Networking prototype efforts will inform future design and fielding activities for platforms and C2 functions.</p>	56.745	76.832	147.065

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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**FY 2024 Plans:**  
 Capability Release #1:  
 -Continue development and test activities associated with the CR #1 communications subsystem, including test and demonstration of skill development (e.g. MADL, DLOS, etc.) and preparations for security certifications.  
 -Complete integration of Tactical Edge Node capability on the KC-46 and conduct planning for flights for test, military utility assessments, and Concept of Operations experimentation.  
 -Complete development of a palletized compute and store enclave with local cloud storage, cloud synchronization, and network management functions.  
 -Maximize use of digital engineering, modern software development practices, and open architecture principles; develop Technical Data Package to enable potential follow-on development and integration activities.  
 -Demonstrate fieldable KC-46 capability in FY24 via Tactical Edge Node hardware and organic KC-46A communications capabilities.

Phalanx Griffon:  
 -Execute EF 24-3 testing event (1QFY25) to demonstrate CR #1 capabilities and establish lessons learned to transition technologies and architectures to Phalanx Griffon.  
 -Initiate contract awards to support development, testing and application of Phalanx Griffon Nomad, Watch and Smith features.  
 -Continue development of content routing, next-generation security solutions, and communications software to support Aerial Network implementation across target platforms.  
 -Implement Phalanx Griffon architecture within Government-owned and vendor-supported Software and Hardware Integration Labs (SILs/HILs) to validate, update, and optimize overarching architecture execution.  
 -Stand up and implement DevSecOp Pipeline in support of Aerial Networking as well as ABMS initiatives.  
 -Gain 'early adopter' feedback on Phalanx Griffon features and capabilities to drive decisions for platform integration and implementation.  
 -Continue to develop a Technical Data Package, leveraging digital engineering, modern software development practices, and open architecture principles to enable follow-on development and integration activities on other operationally relevant platforms.

**FY 2025 Plans:**  
 CR #1:  
 -Complete final demonstration event of the prototype subsystem on a KC-46.  
 -Complete integration of Tactical Edge Node capability on the KC-46 and flights for test, military utility assessments, and Concept of Operations experimentation.  
 -Complete development of a palletized compute and store enclave with local cloud storage, cloud synchronization, and network management functions.


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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>-Deliver Technical Data Package and Study results to enable potential follow-on development and integration activities.</p> <p>-Demonstrate fieldable KC-46 capability via Tactical Edge Node hardware and organic KC-46A communications capabilities.</p> <p>Phalanx Griffon:</p> <p>-Develop/Integrate hardware architecture solutions, leverage CR#1 capabilities as applicable (e.g. security cryptographic module, or SCM) to continue development of open architecture multi-function processor tailored for hosting on tactical aircraft (e.g., F-15E/EX).</p> <p>-Conduct planning for test and demonstration activities associated with Phalanx Griffon.</p> <p>-Continue development of content routing and communications software.</p> <p>-Continue to develop a Technical Data Package, leveraging digital engineering, modern software development practices, and open architecture principles to enable follow-on development and integration activities on other operationally relevant platforms.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increases in FY25 to support hardware, software and architecture development activities and contract awards for PG, which are planned to be in execution after acquisition strategy approvals in FY24. Prototype hardware builds and integration activities are planned for in FY25.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	229.842	500.575	743.842

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

ABMS is a portfolio of acquisition efforts and should not be viewed as a monolithic program. The first acquisition effort, referred to as AN CR#1 under the C3BM Aerial Networking Thrust Area, is an ACAT II effort. The CR#1 acquisition strategy was approved by the Service Acquisition Executive (SAE) on 15 Jun 21. Cloud-Based C2 (CBC2) is Software Pathway program, and its acquisition strategy was approved by the SAE in May 2022. ABMS DI consists of multiple acquisition efforts, including an acquisition strategy approved by the SAE in Nov 21 to initiate development of the ABMS Consortium, which provides critical early industry involvement in architecture and requirements refinement, prototyping, and technical strategy development for a complex systems of systems acquisition portfolio. Follow-on DI acquisition plans for Distributable Battle Management Node (DBMN), Software Defined Wide Area Networking (SD-WAN), and Deployable Digital Infrastructure leveraged the Middle Tier of Acquisition Rapid Prototyping Acquisition Pathway and were approved by DAF PEO C3BM in October 2022 and January 2023. Two additional acquisitions strategies for DI Networks and DI Nodes are planned for early FY24.

The ABMS agile acquisition strategy and development approach is modeled after the path of commercial innovation and internet of things technology practices. The acquisition strategy develops capabilities - that might traditionally be delivered as a monolith in the Government - via modular components and then integrates them

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>
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through open standards and an open architecture derived from ASE driven analysis. Modularity and openness enable consistent competition and continuous innovation, as well as more rapid upgrade of product capabilities. Software development and hardware development can both follow this path—a proven, successful model that is employed in the commercial world as well as in agile government entities.

The iterative nature of technology and speed of technical obsolescence in the 21st century digital age mandate an agile approach to capability development, integration, and delivery that is both rapid and continuous. DAF PEO C3BM will make targeted investments in select areas and technologies to stabilize and integrate core operational capabilities, expedite the delivery of warfighter capability, and close operational gaps. This model continues to be matured in FY2024, as a number of digital infrastructure and software development efforts are in execution deploying minimum viable products across the DAF in keeping with a continuous integration/ continuous delivery mindset where operators are involved in regular feedback loops and a variety of traditional and non-traditional defense contractors are involved in delivery.

To enable the speed and agility required by this acquisition strategy, the ABMS acquisition efforts have developed a contracting strategy that is highly flexible. Though the program employs the full range of contracting authorities, ABMS is currently utilizing, at a minimum, the following contracting vehicles to execute requirements: 1) JADC2 Multiple-Award, Multi-Level Security (MA-MLS) Indefinite Delivery/Indefinite Quantity (ID/IQ) vehicle; 2) JADC2 Broad Agency Announcement with Calls to include a Call soliciting sources to participate in Cooperative Research and Development Agreements (CRADAs); 3) JADC2 Commercial Solutions Opening; 4) Small Business Innovation Research Phase III efforts; and 5) already existing contract vehicles where ABMS acquisition efforts are within scope. Additional vehicles will be considered on an as-needed basis.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>	<b>Project (Number/Name)</b> 640141 / <i>Advanced Battle Management System (ABMS)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ASE: Digital Engineering	Various	DAF PEO C3BM: Multiple : TBD	-	0.000	Oct 2022	3.732	Oct 2023	5.920	Oct 2024	-		5.920	Continuing	Continuing	-
ASE: Mission Domain Architecture & Mission Integration Team	Various	DAF PEO C3BM: Multiple : TBD	-	0.000	Oct 2022	65.239	Oct 2023	81.504	Oct 2024	-		81.504	Continuing	Continuing	-
ASE: Operational Response Team	Various	DAF PEO C3BM: Multiple : TBD	-	0.000	Oct 2022	11.029	Oct 2023	12.576	Oct 2024	-		12.576	Continuing	Continuing	-
DI: ABMS Digital Infrastructure	Various	DAF PEO C3BM: Multiple : TBD	-	68.262	Jun 2023	215.923	Jun 2024	279.525	Oct 2024	-		279.525	Continuing	Continuing	-
DI: Enterprise Systems Engineering Team (ESET)	C/FP	DAF PEO C3BM: Multiple : TBD	-	27.915	Jun 2023	39.573	Jun 2024	90.131	Oct 2024	-		90.131	Continuing	Continuing	-
DI: ABMS Battle Lab	Various	DAF PEO C3BM: Various : TBD	-	0.000	Jun 2023	0.000	Jun 2024	10.300	Oct 2024	-		10.300	Continuing	Continuing	-
Software/Apps: Cloud-Based Command and Control (CBC2)	Various	DAF PEO C3BM: Multiple : TBD	-	73.342	Sep 2023	82.576	Sep 2024	87.215	Oct 2024	-		87.215	Continuing	Continuing	-
Software/Apps: Distributed Battle Management Applications (DBMA)	Various	DAF PEO C3BM: Multiple : TBD	-	0.000	Sep 2023	0.000	Sep 2024	24.584	Oct 2024	-		24.584	Continuing	Continuing	-
Software & Apps: DAF Orchestration Tool	Various	DAF PEO C3BM: Multiple : TBD	-	0.000	Oct 2022	0.000	Oct 2023	8.000	Oct 2024	-		8.000	Continuing	Continuing	-
Aerial Networking: Airborne Edge Node (AEN) CR#1	Various	DAF PEO C3BM: Multiple : TBD	-	21.592	Sep 2023	23.856	Sep 2024	11.601	Oct 2024	-		11.601	Continuing	Continuing	-
Aerial Networking: Phalanx Griffon	Various	DAF PEO C3BM: Multiple : TBD	-	1.828	Jun 2023	6.500	Sep 2024	72.500	Oct 2024	-		72.500	Continuing	Continuing	-
SBIR/STTR	TBD	TBD : TBD : TBD	-	0.000	Oct 2022	14.088	Oct 2023	27.225	Oct 2024	-		27.225	Continuing	Continuing	-
<b>Subtotal</b>			-	192.939		462.516		711.081		-		711.081	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>	<b>Project (Number/Name)</b> 640141 / <i>Advanced Battle Management System (ABMS)</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority: Civilian Pay	TBD	DAF PEO C3BM: Multiple : TBD	-	0.000	Oct 2022	2.877	Oct 2023	6.741	Oct 2024	-		6.741	Continuing	Continuing	-
FFRDC	Various	DAF PEO C3BM: Multiple : TBD	-	-		-		-		-		-	Continuing	Continuing	-
A&AS	Various	DAF PEO C3BM: Multiple : TBD	-	-		-		0.000	Oct 2024	-		0.000	Continuing	Continuing	-
<b>Subtotal</b>			-	0.000		2.877		6.741		-		6.741	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DI: Test	Various	Various : TBD	-	8.110	Jan 2023	8.159	Jan 2024	5.315	Jan 2025	-		5.315	Continuing	Continuing	-
Software/Apps: Test	Various	Various : TBD	-	1.832	Jan 2023	2.446	Jan 2024	1.988	Jan 2025	-		1.988	Continuing	Continuing	-
Aerial Networking: Test	Various	Various : TBD	-	1.310	Jan 2023	2.163	Jan 2024	2.600	Jan 2025	-		2.600	Continuing	Continuing	-
<b>Subtotal</b>			-	11.252		12.768		9.903		-		9.903	Continuing	Continuing	N/A

**Remarks**  
Aligned all test activities to thrust areas.

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FFRDC	Various	Various : TBD	-	6.597	Oct 2022	9.822	Oct 2023	0.000	Oct 2024	-		0.000	Continuing	Continuing	-
A&AS	Various	Various : TBD	-	5.010	Oct 2022	9.483	Oct 2023	9.767	Oct 2024	-		9.767	Continuing	Continuing	-
Other Support	Various	Various : TBD	-	14.044	Oct 2022	3.109	Oct 2023	6.350	Oct 2024	-		6.350	Continuing	Continuing	-
<b>Subtotal</b>			-	25.651		22.414		16.117		-		16.117	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>	<b>Project (Number/Name)</b> 640141 / <i>Advanced Battle Management System (ABMS)</i>

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>ABMS</b>																												
Architecture and Systems Engineering (ASE)																												
ASE: Digital Engineering																												
ASE: Mission Domain Architecture and Mission Integration Team																												
ASE: Operational Response Team																												
DI: ABMS Digital Infrastructure																												
DI: Enterprise Systems Engineering Team																												
DI: ABMS Battle Lab																												
DI: ABMS DI Test																												
Software/Apps: Cloud-Based Command and Control (CBC2)																												
Software/Apps: Distributed Battle Management Applications (DBMA)																												
Software/Apps: DAF Orchestration Tool																												
Software/Apps: CBC2 Test																												
Aerial Networks: Airborne Edge Node (AEN) CR#1																												
Aerial Networks: Phalanx Griffon																												
Aerial Networks: AEN CR#1: Test																												
OGC-Test																												
FFRDC																												
A&AS																												
Other Support																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604003F / <i>Advanced Battle Management System (ABMS)</i>	<b>Project (Number/Name)</b> 640141 / <i>Advanced Battle Management System (ABMS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>ABMS</b>				
Architecture and Systems Engineering (ASE)	1	2024	4	2029
ASE: Digital Engineering	1	2024	4	2029
ASE: Mission Domain Architecture and Mission Integration Team	1	2024	4	2029
ASE: Operational Response Team	1	2024	4	2029
DI: ABMS Digital Infrastructure	1	2023	4	2029
DI: Enterprise Systems Engineering Team	3	2023	4	2029
DI: ABMS Battle Lab	1	2024	4	2029
DI: ABMS DI Test	2	2023	4	2029
Software/Apps: Cloud-Based Command and Control (CBC2)	1	2023	4	2026
Software/Apps: Distributed Battle Management Applications (DBMA)	1	2024	4	2029
Software/Apps: DAF Orchestration Tool	1	2025	4	2027
Software/Apps: CBC2 Test	2	2023	4	2026
Aerial Networks: Airborne Edge Node (AEN) CR#1	1	2023	4	2026
Aerial Networks: Phalanx Griffon	1	2024	4	2029
Aerial Networks: AEN CR#1: Test	2	2023	4	2026
OGC-Test	2	2023	4	2029
FFRDC	1	2023	4	2029
A&AS	1	2023	4	2029
Other Support	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604004F / <i>Advanced Engine Development</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	212.586	595.352	562.337	0.000	562.337	439.897	287.535	0.000	0.000	Continuing	Continuing
643608: <i>Advanced Engine Dev</i>	-	212.586	595.352	562.337	0.000	562.337	439.897	287.535	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Advanced Engine Development Program enables demonstration of advanced engine technology prototypes, like the adaptive cycle engines. Adaptive cycle engine technology enables next generation combat aircraft capabilities by combining the efficiency of high bypass turbofans used by commercial airlines with the performance demanded of military fighter engines. This technology has undergone initial development under the auspices of the Air Force Research Laboratory through the Adaptive Versatile Engine Technology (ADVENT) and Adaptive Engine Technology Demonstrator (AETD) programs. This program is maturing advanced propulsion system architectures, designs, component technologies and manufacturing processes to reduce associated risk in preparation for next-generation propulsion system development and platform integration.

The Adaptive Engine Transition Program (AETP) was moved to a new program element 0604534F, Adaptive Engine Transition Program (AETP) in FY 2023 to comply with 2023 Appropriations Bill and accompanying Joint Explanatory Statement direction to maintain separate budget lines for the AETP and Next Generation Adaptive Propulsion (NGAP) efforts.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F. In FY 2023 0.305 million was expended for civilian pay expenses in this program element, and in FY 2024 4.910 million is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604004F / <i>Advanced Engine Development</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	220.363	595.352	579.834	0.000	579.834
Current President's Budget	212.586	595.352	562.337	0.000	562.337
Total Adjustments	-7.777	0.000	-17.497	0.000	-17.497
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-7.777	0.000			
• Other Adjustments	0.000	0.000	-17.497	0.000	-17.497

**Change Summary Explanation**

FY 2025 - Funding decrease is due to Air Force funding re-prioritization.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Next Generation Adaptive Propulsion	212.586	595.352	562.337
<b>Description:</b> The Next Generation Adaptive Propulsion (NGAP) effort will design and perform component risk reduction for adaptive engine prototypes enabling future Next Generation Air Dominance (NGAD) capabilities. NGAP will select appropriate adaptive engine technologies that can meet future Next Generation Air Dominance (NGAD) engine requirements while ensuring appropriate manufacturing and technology readiness levels.			
<b>FY 2024 Plans:</b> Continue adaptive prototyping planning and NGAP detailed design activities for future Next Generation Air Dominance (NGAD) capabilities. More details can be provided in an appropriate forum.			
<b>FY 2025 Plans:</b> Complete NGAP detailed design activities and transition to prototype engine fabrication and assembly activities.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding decreased compared to FY 2024 by \$33.015M due to transition from prototype planning and detailed design activities to prototype engine fabrication and assembly, and the Air Force funding re-prioritization.			
<b>Accomplishments/Planned Programs Subtotals</b>			
	212.586	595.352	562.337

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force Date: March 2024

<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 Program Element (Number/Name)</b> PE 0604004F I Advanced Engine Development
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**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

The Air Force awarded two limited source, cost plus incentive fee contracts in FY 2016 to General Electric and Pratt & Whitney due to their unique qualifications to design a high performance, flight-weight adaptive turbine engine in the thrust class for the Adaptive Cycle Engine Transition Program (AETP). Embedded in each AETP contract was an option for the Next Generation Adaptive Propulsion (NGAP) effort through preliminary design. In FY 2018, these options were exercised and awarded to optimize risk reduction for future Next Generation Air Dominance (NGAD) capabilities through the NGAP effort. In fourth quarter FY 2022 new indefinite delivery, indefinite quantity (IDIQ) contracts for completion of NGAP detailed design and prototyping were awarded to General Electric (GE), Pratt & Whitney (PW), Boeing, Lockheed Martin (LM), and Northrop Grumman (NG). The new contracts include digital transformation requirements, scope to complete prototype detail design and execute prototype engine testing, digital Weapon System integration activity to reduce technology transition risk, and a contracting approach that enhances the program's acquisition agility. Competitively awarded orders and options under the IDIQ contracts enable work to be rapidly defined to accommodate available funding, provide continued competitive incentives to contractors, and enable rapid and efficient execution of funds. The government agency responsible for managing this program is the Air Force Life Cycle Management Center, Propulsion Directorate, Wright-Patterson Air Force Base, Ohio.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604004F / <i>Advanced Engine Development</i>	<b>Project (Number/Name)</b> 643608 / <i>Advanced Engine Development</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Next Generation Adaptive Propulsion (Preliminary Design) - GE	C/CPIF	GE : Evendale, OH	-	-		-		-		-		-	0.000	0.000	-
Next Generation Adaptive Propulsion (Preliminary Design) - PW	C/CPIF	PW : East Hartford, CT	-	-		-		-		-		-	0.000	0.000	-
Next Generation Adaptive Propulsion (Detailed Design & Prototyping) - GE	C/Various	GE : Evendale, OH	-	100.531	Oct 2022	279.942	Oct 2023	263.362	Oct 2024	-		263.362	Continuing	Continuing	-
Next Generation Adaptive Propulsion (Detailed Design & Prototyping) - PW	C/Various	PW : East Hartford, CT	-	100.277	Oct 2022	279.942	Oct 2023	263.362	Oct 2024	-		263.362	Continuing	Continuing	-
Next Generation Adaptive Propulsion (Detailed Design & Prototyping) - Boeing	C/Various	Boeing : St Louis, MO	-	3.130	Oct 2022	4.868	Oct 2023	5.182	Oct 2024	-		5.182	Continuing	Continuing	-
Next Generation Adaptive Propulsion (Detailed Design & Prototyping) - LM	C/Various	LM : Ft Worth, TX	-	3.130	Oct 2022	5.182	Oct 2023	5.182	Oct 2024	-		5.182	Continuing	Continuing	-
Next Generation Adaptive Propulsion (Detailed Design & Prototyping) - NG	C/Various	NG : Palmdale, CA	-	3.130	Oct 2022	5.716	Oct 2023	5.182	Oct 2024	-		5.182	Continuing	Continuing	-
<b>Subtotal</b>			-	210.198		575.650		542.270		-		542.270	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Next Generation Adaptive Propulsion - Program Management Support	Various	Various : TBD	-	2.388	Dec 2022	19.702	Dec 2023	20.067	Dec 2024	-		20.067	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604004F / <i>Advanced Engine Developm ent</i>	<b>Project (Number/Name)</b> 643608 / <i>Advanced Engine Dev</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	2.388		19.702		20.067		-		20.067	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	212.586		595.352		562.337		-		562.337	Continuing	Continuing	N/A

**Remarks**  
GE - General Electric PW - Pratt & Whitney LM - Lockheed Martin NG - Northrop Grumman

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604004F / <i>Advanced Engine Developm</i> <i>ent</i>	<b>Project (Number/Name)</b> 643608 / <i>Advanced Engine Dev</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Next Generation Adaptive Propulsion</i></b>	
Initial Design, Preliminary Design	
Adaptive Prototyping Plan, Detailed Design, Engine Fabrication, Engine Assessments	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604004F / <i>Advanced Engine Development</i>	<b>Project (Number/Name)</b> 643608 / <i>Advanced Engine Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Next Generation Adaptive Propulsion</i></b>				
Initial Design, Preliminary Design	1	2023	1	2023
Adaptive Prototyping Plan, Detailed Design, Engine Fabrication, Engine Assessments	1	2023	4	2027

**Note**

The Next Generation Adaptive Propulsion effort consists of six phases initial design, preliminary design, adaptive prototyping planning, detailed design, engine fabrication, and engine assessments. Initial and preliminary design activities are complete.

Program deliverables include: military adaptive engine detailed design parameters and models; engine hardware (plus spare parts); matured technologies; major rig assessment data (controls, combustor, etc.); program reviews; and technology, affordability and sustainability studies for capability enabling propulsion systems providing options for future Next Generation Air Dominance (NGAD) family of systems capabilities.

Additional details can be provided in the appropriate forum.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604005F / NC3 <i>Commercial Development &amp; Prototyping</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	93.485	78.799	68.124	0.000	68.124	67.306	61.114	0.000	0.000	Continuing	Continuing
640860: <i>Nuclear Command Control and Communications (NC3)</i>	-	93.485	78.799	68.124	0.000	68.124	67.306	61.114	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Funding for NC3 PE under PE 0604858F (Tech Transition), prototyping Project (645351), transitioned to PE 0604005F, Project 640860, beginning in FY23 per Congressional direction.

**A. Mission Description and Budget Item Justification**

The DAF nuclear enterprise has historically used unique closed systems to provide the high degree of mission assurance and security needed for this mission. Furthermore the rapid development of the nuclear enterprise required the fielding of the most advanced technology of that time, and in most cases utilized technology that was well ahead of the commercial sector. Today the technological world is very different and in cases such as satellite communications and information technology (IT) systems the commercial sector has raced ahead of government unique systems.

Commercial Leveraging for the nuclear enterprise will explore a range of key technologies that are either commercial, or commercial entwined with government system to quantitatively determine whether these capabilities provide increased resilience, improved reconstitution, or lower cost for applications within the DOD nuclear enterprise. It is not intended to replace baseline systems, but rather will be prototypes to augment existing capabilities.

The program will reduce risk in leveraging emerging commercial-based technologies by partnering with industry while providing access to Government analysis, testing and certification capabilities. Prime investments focus on Government-Industry partnerships to influence and militarize emerging commercial capabilities to ensure US competitive advantage in key technology areas. Experimentation efforts will be employed to explore new concepts and their applications in future operating environments within a system-of-systems context taking risks early in the acquisition process to drive a more optimized and efficient acquisition approach significantly reducing overall acquisitions costs. Prototyping of commercially-derived technologies into government systems, followed by operational experimentation of the performance and security, will enable these candidate technologies to move into warfighting capability faster and at a lower cost, based on demonstrated low-risk prototypes.

Efforts include a focus on communications, secure data flow, and incorporating commercial approaches for a coarse navigation capability. Communications will focus primarily on satellite links by prototyping terminals that can gain access and switch across multiple commercial and government links from a common terminal. Multiple commercial vendors will be competitively awarded contracts for these prototypes and will work with the government partners to interface with selected platforms across the enterprise. Secure data flow will test various techniques across commercial and DOD partners to smartly utilize multiple communications paths to increase resilience, and also to integrate with hybrid architectures under USSF and across terrestrial networks. Coarse navigation will explore, test and prototype commercially-

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0604005F / NC3 <i>Commercial Development &amp; Prototyping</i>

derived approaches to resiliently provide a very coarse navigation capability to disadvantaged users. This capability does not replace GPS or other advanced precision DOD Position-Navigation-Timing capabilities or approach their exquisite capabilities, but will instead provide a back-up option for a coarse capability for a scenario when no other options are available to the DOD user.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F, 0605831F, and/or 0606017F

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	97.000	78.799	68.004	0.000	68.004
Current President's Budget	93.485	78.799	68.124	0.000	68.124
Total Adjustments	-3.515	0.000	0.120	0.000	0.120
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-3.515	0.000	0.120	0.000	0.120

**Change Summary Explanation**

The FY23 PB Congress directed the stand-up of this new PE. Previous efforts programmed in PE 0604858F.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Commercial Leveraging for the Nuclear Enterprise	93.485	78.799	68.124
<b>Description:</b> Utilizing commercial terminal providers to develop key prototypes, and associated test and experimentation. Includes analysis to assess the hybrid architecture and integration options to the USSF/SDA space transport layer and DOD/ commercial terrestrial networks. Includes prototype of coarse navigation capability. Establish partnerships with DOD partners for secure data transport across multiple links. Initiate efforts with the USAF program offices for the key platforms to facilitate integration assessments.			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604005F / NC3 <i>Commercial Development &amp; Prototyping</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>FY 2023 Accomplishments: Awarded three prime contracts for communication terminal prototypes and successfully completed preliminary design reviews. Initiated platform integration discussions and analyses with four key platforms in preparation for detailed integration work that will begin in FY2024.</p> <p><b>FY 2024 Plans:</b> Receive initial terminal prototypes late in FY24 and initiate testing. Fund multiple contracts for platform integration assessments with each platform. Start field testing of coarse navigation techniques and approaches for secure data transport across multiple links.</p> <p><b>FY 2025 Plans:</b> Fund multiple contracts to perform platform integration assessments with each platform. Start platform integration activities on selected terminals and begin operational experimentation on successfully integrated platforms. Acquisition strategy updates have been completed and contracts issued in FY 2023 for successful execution in FY 2024 and FY 2025.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding decreased compared to FY 2024 funding by \$10.812 million due to high up-front hardware costs for prototype terminals. In FY 2025 the effort switches more towards integration platform assessment experimentation, operational experimentation, and testing which are lower cost due to the nature of the work.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	93.485	78.799	68.124

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
For FY24-FY25, the NC3 contractual efforts are within the scope of the DEUCSI solicitation which has an ASP approved by AFRL/CC. The ceiling and scope of the ASP are sufficient for execution of the planned funds.

The FFRDC analysis will be executed under existing contractual arrangements. Those vehicles have sufficient scope and ceiling to support the NC3 effort.

Integration assessment will be executed by the existing contractor aligned with each platform. Each platform PEO already has those contracts in place, and the NC3 funds will be transferred as needed by MIPR.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604005F / NC3 Commercial Development & Prototyping	<b>Project (Number/Name)</b> 640860 / Nuclear Command Control and Communications (NC3)
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<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Prototype Terminals Vendor 1	C/CPFF	L3Harris : Salt Lake City, UT	-	25.000	Jul 2023	21.266		14.329		-		14.329	Continuing	Continuing	-
Prototype Terminals Vendor 2	C/CPFF	Northrop Grumman : San Diego, CA	-	25.000	Jun 2023	21.266		14.466		-		14.466	Continuing	Continuing	-
Prototype Terminals Vendor 3	C/FFP	SES-SD : Reston, VA	-	28.703	Aug 2023	21.267		14.329		-		14.329	Continuing	Continuing	-
Prototype Terminals Vendor 4	C/CPFF	Lockheed Martin : Fort Worth, TX	-	1.106	Sep 2023	-		-		-		-	Continuing	Continuing	-
Prototype Terminals Vendor 5	C/CPFF	Rand : Santa Monica, CA	-	0.621	May 2023	-		-		-		-	Continuing	Continuing	-
Prototype Terminals Vendor 6	C/CPFF	Intelsat : McLean, VA	-	8.843	Jan 2024	-		-		-		-	Continuing	Continuing	-
Coarse Navigation approach 1	C/FFP	TBD : TBD	-	0.000	Jun 2023	10.000		-		-		-	Continuing	Continuing	-
Platform Integration assessments	C/Various	TBD : TBD	-	0.000	Jul 2023	3.000		3.000		-		3.000	Continuing	Continuing	-
Platform Integration	C/CPAF	TBD : TBD	-	-		-		20.000		-		20.000	Continuing	Continuing	-
<b>Subtotal</b>			-	89.273		76.799		66.124		-		66.124	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Architecture analysis	C/Various	Various : TBD	-	3.091		1.000		1.000		-		1.000	Continuing	Continuing	-
Architecture Analysis (1)	C/CPAF	JHU/APL : TBD	-	0.758	Jul 2023	1.000		1.000		-		1.000	Continuing	Continuing	-
<b>Subtotal</b>			-	3.849		2.000		2.000		-		2.000	Continuing	Continuing	N/A





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604005F / NC3 Commercial Development & Prototyping	<b>Project (Number/Name)</b> 640860 / Nuclear Command Control and Communications (NC3)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Nuclear Command Control and Communications (NC3)</i></b>				
NC3	1	2023	4	2028
Prototype Terminal Vendor 1	2	2023	2	2025
Prototype Terminal Vendor 2	2	2023	1	2025
Prototype Terminal Vendor 3	2	2023	1	2025
Coarse Navigation	3	2023	3	2024
Data Transport	1	2023	4	2024
Platform Integration Assessments	1	2023	2	2025
Architecture Analysis	2	2023	4	2025
Physical Integration	3	2025	4	2026
Flight Testing	4	2025	4	2027

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>					<b>R-1 Program Element (Number/Name)</b>							
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					PE 0604006F / Dept of the Air Force Tech Architecture							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	-	48.808	2.620	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
645352: <i>Department of the Air Force Technical Architecture Design, Integration, and Evaluation</i>	-	48.808	2.620	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Department of the Air Force (DAF) Tech Architecture resources activities to oversee and shape the technical architecture of the entire Air Force and Space Force and foster modular and agile architectures within individual programs and across programs to rapidly deliver warfighting capability. The complexity of modern conflict requires decision making and coordinated effects at expanding ranges and increasingly rapid timelines driving the need for flexible, integrated systems that work together instead of exquisite individual systems that operate in isolation. As a result, the system-of-systems integrated architecture is just as important as the design of individual systems to ensure that systems have the necessary interoperability and composability as well as the capacity to rapidly modernize as needed to defeat the rapidly evolving adversary capabilities. Successful commercial companies follow a similar approach across product lines, enabling seamless operation across platforms as well as rapid modernization of hardware and software for each of their products.

The complexity of modern conflict and the need for an effective family of systems to counter peer threats requires an office responsible for architecting across the entire USAF and USSF portfolio of systems to coordinate acquisition of those systems. Historically, acquisition has been done in the absence of a system-of-systems integrated reference architecture which has yielded systems that often only address a single use case (lack of composability); do not work together as desired (lack of interoperability); are unable to evolve or adopt new technologies (lack of ability to rapidly modernize); or fail to deliver the warfighter's desired operational effects (lack of military utility). The DAF Tech Architecture leads technical architectures for the entire DAF Air and Space portfolio to enable accelerated agile delivery of integrated warfighter capabilities in support of national security objectives.

The DAF Tech Architecture leads the development of reference technical architectures which are foundational to a modular open system approach and are key to ensuring successful system-of-systems acquisitions. Reference architectures facilitate understanding the impact each system has on DAF missions and assessing system-of-systems performance to prioritize investments, expose duplicative capabilities, and identify capability gaps. The reference technical architectures guide and constrain programs to ensure delivery of systems that are composable, interoperable, and able to be modernized; as well as providing a framework to integrate them together ensuring military utility for complex missions such as Decision Superiority and Information Advantage, Agile Combat Employment, Rapid All-Domain Kill Chains, Logistics Under Attack, Space Domain Awareness, and Space Defense. The architectures must keep pace with the adversary, maturing as threats advance and new technological opportunities arise. Without a reference technical architectures, the DAF will continue to acquire singular exquisite systems instead of modular, open system-of-systems capabilities.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604006F / <i>Dept of the Air Force Tech Architecture</i>
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The DAF Tech Architecture will work with architecture stakeholders to develop policy, standards, and processes to ensure capability and composability of architectures from a single aircraft sensor to the entirety of the USAF and USSF. Training, tools, and infrastructure required for architecture will be developed and provided to organize, train, and equip the DAF acquisitions force.

To ensure successful system-of-systems acquisition, DAF Tech Architecture validates architecture designs by integrating them into the complex mission threads in the field, highlighting architectural gaps, validating military utility, and assessing architecture performance. A comprehensive understanding of mission threads, concepts of operation (CONOPS), and current/future systems is used to inform the development of an architectural minimum viable product (MVP); rapidly delivering critical technology with a bridge to acquisition and scaling. By integrating open architectures and solutions in complex mission scenarios on the battlefield, the DAF Tech Architecture has and will continue to deliver critical capability while uncovering mission-critical gaps. Architecture integration in system-of-systems mission threads and environments is critical to deliberately advancing the DAF's technological edge by informing architecture design, acquisition investments, system requirements for future capabilities, and acquisition baseline updates for current systems.

This activity is directed by the DAF Chief Architect Officer (CAO) with oversight by the Secretary of the Air Force along with the Chief of Staff of the Air Force, Chief of Space Operations, and Senior Acquisition Executive. This activity is executed by the Air Force Research Laboratory.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Department of the Air Force Tech Architecture. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F, 0605831F and/or 0604858F.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	50.000	2.620	2.899	0.000	2.899
Current President's Budget	48.808	2.620	0.000	0.000	0.000
Total Adjustments	-1.192	0.000	-2.899	0.000	-2.899
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.192	0.000			
• Other Adjustments	0.000	0.000	-2.899	0.000	-2.899

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604006F / <i>Dept of the Air Force Tech Architecture</i>
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**Change Summary Explanation**

FY24 and out, FYDP funding reduced for higher Air Force priorities.

**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<p><b>Title:</b> DAF Architecture Design and Integration</p> <p><b>Description:</b> The DAF Tech Architecture leads the development of technical architectures for the entire DAF Air and Space portfolio to enable accelerated agile delivery of integrated warfighter capabilities in support of national security objectives. Architectures will be developed to address critical operational needs as specified by the Secretary of the Air Force along with the Chief of Staff of the Air Force, Chief of Space Operations, Senior Acquisition Executive, and C3BM Program Office. Architecture Design develops technical reference architectures in coordination with, but not limited to Air and Space Staffs, Program Executive Offices, Major Commands, and Deltas leveraging a collaborative digital environment and architecture repository. These architectures enable scalability, flexibility, and interoperability through application of modular open system approaches, open standards, specified interfaces, and defined intra/inter-system relationships. Architectures consist of, but are not limited to, strategy, digital system-of-systems models, technology standards, reference implementations, and system interface specifications. Architecture Design analyzes architectures using approaches such as modeling and simulation to assess operational feasibility and performance of new capabilities across science, technology, research, and development enterprises informing acquisition strategy to maximize system-of-systems lethality. Architecture Design works with SAF/AQ and SAF/SQ leadership to deliver policy, procedures, and processes, driving the use of architectures throughout acquisitions and ensuring that the DAF delivers interoperable, modular, open systems designs. Architecture Design also works with architecture stakeholders to design and instantiate infrastructure, such as a collaborative digital environment and architecture repository, to support architecture development and sharing. Architecture Design drives programs and platforms to be built with agility via open systems and open standards so that they can adapt and upgrade components quickly in response to threats or opportunities to integrate technology as advances are made. Architecture Integration gauges opportunities and develops architecturally-sound, high impact Minimum Viable Products (MVPs) to validate architectures and accelerate transition to programs, delivering capabilities that warfighters need. This effort integrates MVP capabilities into the force-level (i.e., architecture level) operational scenarios that will stress architecture designs and provide real-world assessments of military utility and technical performance. Integration efforts provide essential feedback to architecture designs, capturing real-world system-of-systems interactions as well as warfighter perspectives to ensure architectures deliver on mission needs. Integration of DAF architectures in complex operational missions is key to delivering superior system-of-systems capabilities to address critical warfighting priorities and gaps.</p> <p><b>FY 2024 Plans:</b> Requirements moved to 0604003F ABMS in FY2024 in support of the C3BM PEO.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>	48.808	2.620	-

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604006F / <i>Dept of the Air Force Tech Architecture</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Currently no FY25 funding/plans			
<b>Title:</b> DAF Architecture Force Integration	0.000	0.000	-
<b>Description:</b> Department of the Air Force (DAF) Architecture Force Integration evaluates opportunities and delivers architecturally-sound, high impact Minimum Viable Product (MVP) capabilities with roadmaps for programs to scale capabilities that warfighters need. This work is a deliberate campaign that integrates capabilities at the force-level (i.e., architecture level). This process also uncovers mission-critical gaps that may not be uncovered at test ranges—meaning they would have been discovered on the road to conflict when it could be too late to correct. Therefore, a regular campaign to deliver time-critical technology with a bridge to scaling at the architecture level is critical to deliberately advancing the DAF's technological edge and impacts overall architecture design, funding priorities among multiple capability areas, investments, requirements for future capabilities, and acquisition baseline updates for current systems. The DAF Architecture Force Integration pillar conducts technical sprints to integrate (and when required develop) Minimum Viable Products (MVPs) that address the gaps identified in the Architecture Design Pillar by delivering focused, well-designed, and tangible fixes. This effort also includes Force Integration infrastructure, test personnel, range access, consumables, travel, operational concept and non-materiel development and technical sprints to solve near-term gaps.			
<b>FY 2024 Plans:</b> N/A			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Currently no FY25 funding/plans			
<b>Accomplishments/Planned Programs Subtotals</b>	48.808	2.620	-

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
Contracting strategies vary based on activity; please see R3 for additional details.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2025 Air Force</b>											<b>Date: March 2024</b>				
<b>Appropriation/Budget Activity</b> 3600 / 4						<b>R-1 Program Element (Number/Name)</b> PE 0604006F / Dept of the Air Force Tech Architecture					<b>Project (Number/Name)</b> 645352 / Department of the Air Force Technical Architecture Design, Integration, and Evaluation				

<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
DAF Architecture Design	Various	RAFT SBIR PhIII : Reston, VA	-	-		-		-		-		-	Continuing	Continuing	-
DAF Architecture Design and Integration Contract 1	MIPR	BAH : McLean, VA	-	1.203	Jan 2023	-		-		-		-	Continuing	Continuing	-
DAF Architecture Design and Integration Contract 2	MIPR	MIT/LL : Lexington, MA	-	2.200	Jan 2023	-		-		-		-	Continuing	Continuing	-
DAF Architecture Modeling and Analysis Contract 1	MIPR	GTRI, MITRE, MIT/LL, Aero : Various	-	3.414	Nov 2022	-		-		-		-	Continuing	Continuing	-
DAF Architecture Modeling and Analysis Contract 2	MIPR	JHU APL : Laurel, MD	-	8.572	Nov 2022	-		-		-		-	Continuing	Continuing	-
DAF Architecture Modeling and Analysis Infrastructure	Various	Various : Various	-	1.055	Dec 2022	-		-		-		-	Continuing	Continuing	-
DAF Architecture Technology Solutions, FY22-23	Various	Various : Various	-	11.076	Jan 2023	-		-		-		-	Continuing	Continuing	-
DAF Mission Architecture	MIPR	GTRI, SEI : Various	-	2.027	Dec 2022	-		-		-		-	Continuing	Continuing	-
DAF Program Architecture	MIPR	GTRI, APL, SEI : Various	-	0.000	Dec 2022	-		-		-		-	Continuing	Continuing	-
DAF Architecture Integration	Reqn	MITRE : McLean, VA	-	1.880	Oct 2022	-		-		-		-	Continuing	Continuing	-
Architecture Design Contract 1	Reqn	MITRE : McLean, VA	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Design Contract 2	Reqn	CMU SEI : Pittsburgh, PA	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Design Contract 3	Reqn	MIT/LL : Lexington, MA	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Design Contract 4	SS/CPFF	JHU APL : Laurel, MD	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Design Contract 5	MIPR	Aerospace : TBD	-	-		-		-		-		-	Continuing	Continuing	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2025 Air Force</b>											<b>Date: March 2024</b>				
<b>Appropriation/Budget Activity</b> 3600 / 4						<b>R-1 Program Element (Number/Name)</b> PE 0604006F / Dept of the Air Force Tech A rchitecture					<b>Project (Number/Name)</b> 645352 / Department of the Air Force Technical Architecture Design, Integration, and Evaluation				

<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Architecture Design Contract 6	Reqn	GTRI : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Integration Contract 1	Reqn	MITRE : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Integration Contract 2	SS/CPFF	JHU APL : Laurel, MD	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Integration Contract 3	Reqn	GTRI : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Integration Contract 4	MIPR	ASI : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Integration Contract 5	SS/CPFF	Makai : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Integration Contract 6	Reqn	RAFT : Reston, VA	-	-		-		-		-		-	Continuing	Continuing	-
Architecture Integration Contract 7	Reqn	KBR : TBD	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	31.427		-		-		-		-	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
DAF Architecture Initiatives Support	MIPR	BAH/SEI : Various	-	1.691	Dec 2022	-		-		-		-	Continuing	Continuing	-
DAF Architecture Engineering Support	Reqn	AFRL : Various	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	1.691		-		-		-		-	Continuing	Continuing	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2025 Air Force</b>											<b>Date: March 2024</b>				
<b>Appropriation/Budget Activity</b> 3600 / 4						<b>R-1 Program Element (Number/Name)</b> PE 0604006F / Dept of the Air Force Tech A rchitecture					<b>Project (Number/Name)</b> 645352 / Department of the Air Force Technical Architecture Design, Integration, and Evaluation				

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
DAF Architecture Design Test	Various	LL; APL; MITRE; GTRI; BAH : Various	-	4.210	Oct 2022	-		-		-		-	Continuing	Continuing	-
DAF Architecture Execution Team 1	MIPR	Booz Allen Hamilton : McLean, VA	-	2.000	Nov 2022	-		-		-		-	Continuing	Continuing	-
DAF Architecture Mission Execution	Various	Various : Various	-	0.000	Dec 2022	-		-		-		-	Continuing	Continuing	-
DAF Architecture Test Infrastructure	Various	Various : Various	-	0.000	Dec 2022	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	6.210		-		-		-		-	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Program Management Administration	Various	Various : Various	-	9.480	Oct 2022	2.620	Nov 2023	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	9.480		2.620		-		-		-	Continuing	Continuing	N/A

<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
-	48.808	2.620	-	-	-	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604006F / Dept of the Air Force Tech Architecture	<b>Project (Number/Name)</b> 645352 / Department of the Air Force Technical Architecture Design, Integration, and Evaluation

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>DAFTADIE Product Development</b>	
DAF Architecture Design and Integration Contract 1	██████████
DAF Architecture Design and Integration Contract 2	██████████
DAF Architecture Modeling and Analysis Contract 1	██████████
DAF Architecture Modeling and Analysis Contract 2	██████████
DAF Architecture Modeling and Analysis Infrastructure	██████████
DAF Technology Solution Sprints FY22-23	██████████
DAF Mission Architecture	██████████
DAF Program Architecture	██████████
<b>DAFTADIE Support</b>	
DAF Architecture Support	██████████
<b>DAFTADIE Test and Evaluation</b>	
DAF Architecture Design Test	██████████
DAF Architecture Execution Team	██████████
DAF Architecture Mission Execution	██████████
DAF Architecture Test Infrastructure	██████████
<b>DAFTADIE Management Services</b>	
Program Management Administration	██████████

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604006F / Dept of the Air Force Tech Architecture	<b>Project (Number/Name)</b> 645352 / Department of the Air Force Technical Architecture Design, Integration, and Evaluation

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>DAFTADIE Product Development</b>				
DAF Architecture Design and Integration Contract 1	1	2023	4	2023
DAF Architecture Design and Integration Contract 2	1	2023	4	2023
DAF Architecture Modeling and Analysis Contract 1	1	2023	4	2023
DAF Architecture Modeling and Analysis Contract 2	1	2023	4	2023
DAF Architecture Modeling and Analysis Infrastructure	1	2023	4	2023
DAF Technology Solution Sprints FY22-23	1	2023	4	2023
DAF Mission Architecture	1	2023	4	2023
DAF Program Architecture	1	2023	4	2023
<b>DAFTADIE Support</b>				
DAF Architecture Support	1	2023	4	2023
<b>DAFTADIE Test and Evaluation</b>				
DAF Architecture Design Test	1	2023	4	2023
DAF Architecture Execution Team	1	2023	4	2023
DAF Architecture Mission Execution	1	2023	4	2023
DAF Architecture Test Infrastructure	1	2023	4	2023
<b>DAFTADIE Management Services</b>				
Program Management Administration	1	2023	1	2024

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604007F / E-7
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	411.704	681.039	418.513	0.000	418.513	297.334	161.838	167.697	171.006	0.000	2,309.131
644413: E-7A	-	411.704	681.039	418.513	0.000	418.513	297.334	161.838	167.697	171.006	0.000	2,309.131
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**  
This program, BA 4, PE 0604007F, project 644413, E-7 C2ISR, is a new start.

**A. Mission Description and Budget Item Justification**

This budget line funds the E-7A program. The E-7A program replaces the unsustainable E-3 Airborne Warning and Control System (AWACS). The E-3 AWACS, first fielded in the 1970s, is at the end of its service life, and costly to maintain. The E-7A will be the USAF's principal airborne sensor for detecting, identifying, tracking, and reporting aerial tracks for the Joint Force Air Component Commander (JFACC).

The E-7A will provide multiple benefits and increased capabilities to the USAF and the Joint Services, including but not limited to: 1) ability to detect and track highly maneuverable, small radar cross-section airborne targets (modern and emerging threats); 2) enable greater airborne battlespace awareness through its precise, real-time air picture of sufficient quality to control and direct individual aircraft under a wide range of environmental and operational conditions; and 3) mitigate reliability, operational availability, maintainability, and sustainability issues.

The E-7A is a highly modified Airborne Battle Management and Command and Control aircraft integrating a Boeing 737-700 Next Generation (737NG) airframe with reinforced Section 46, a Northrop Grumman Multi-Role Electronically Scanned Array Radar mounted on the aircraft's Section 46, and two 180-kVA generators added to commercial CFM-56 engines mounted beneath each wing.

FY2025 funding will support continued rapid prototyping of two E-7As. Rapid prototyping consists of completing end items and modification components for two aircraft to support test and evaluation; hardware and software modernization development efforts to ensure compliance with US cybersecurity and program protection standards; development efforts to ensure navigation and communication systems comply with GPS M-Code and Narrowband SATCOM mandates; development efforts to design and build aircrew, mission crew, and maintenance trainers; design and build-out contractor and government System Integration Laboratories supporting development, integration, and test activities, and provide analysis and products supporting future requirements and airworthiness certification.

E-7 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR): C2ISR system improvements investigate and develop future capabilities of the E-7 weapon system. These efforts also include but are not limited to advanced sensors, advanced communications, self-protection, enhanced cyber protection, and obsolescence resolution to ensure that the E-7 successfully integrates with joint and coalition forces in a net-centric environment. C2ISR primarily supports pre-systems acquisition in the areas of materiel solution analysis and technology development. This is accomplished by prototyping and demonstrating capabilities required by the warfighter. C2ISR also supports an analytical comparison of suitability, life-cycle cost and system capabilities of alternative materiel solutions beyond the current E-7A

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604007F / E-7
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that satisfy an established capability need identified in a Capability Development Document (CDD), Rapid Prototyping Requirements Document (RPRD), or Rapid Fielding Requirements Document (RFRD).

E-7A is not fully funded across the Future Years Defense Program. While continuing to evaluate the contractor proposal, the Department of the Air Force is assessing all options to address the funding shortfalls for MTA programs including additional funding in a future budget request, performance trade based on technical maturity, or transition to alternative pathways.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23, 3.677M was expended for civilian pay expenses in this program element. In FY24, 8.014M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	426.776	681.039	417.774	0.000	417.774
Current President's Budget	411.704	681.039	418.513	0.000	418.513
Total Adjustments	-15.072	0.000	0.739	0.000	0.739
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-15.072	0.000			
• Other Adjustments	0.000	0.000	0.739	0.000	0.739

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> E-7A	411.704	681.039	412.513
<b>Description:</b> Funds will be used to continue E-7A rapid prototyping.			
<b>FY 2024 Plans:</b>			
Continue Rapid Prototyping effort including the following tasks:			
- complete end items and potential modification components for up to two aircraft to support test and evaluation			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604007F / E-7
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>- development efforts to ensure compliance with US cyber security and program protection standards - development efforts to ensure navigation and communication systems comply with GPS M-Code and Narrowband SATCOM mandates</p> <p>- design and build aircrew, mission crew, and maintenance trainers</p> <p>- design and build-out contractor and government System Integration Laboratories supporting development, integration, and test activities</p> <p>- provide analysis and products supporting future requirements and airworthiness certification.</p> <p>Program office will continue to support Operational Assessment (OA) of coalition systems providing basis for follow-on production/fielding decisions, undertake Depot Source of Repair (DSOR) analysis, and assemble FAA airworthiness certification package.</p> <p><b>FY 2025 Plans:</b> Continue Rapid Prototyping effort including the following tasks:</p> <ul style="list-style-type: none"> <li>- complete end items and modification components for up to two aircraft to support test and evaluation</li> <li>- hardware and software modernization development efforts to ensure compliance with US cybersecurity and program protection standards</li> <li>- development efforts to ensure navigation and communication systems comply with GPS M-Code and Narrowband SATCOM mandates</li> <li>- design and build aircrew, mission crew, and maintenance trainers</li> <li>- design and build-out contractor and government System Integration Laboratories supporting development, integration, and test activities</li> <li>- provide analysis and products supporting future requirements and airworthiness certification</li> <li>- begin to integrate E-7A capabilities into the two (2) 737NG aircraft.</li> </ul> <p>Program office will also continue to support coalition systems and conduct laboratory System Maturity and Capability Demonstrations, providing basis for follow-on production/fielding decisions planned for FY25, continue analysis, and assemble FAA and Military airworthiness certification packages.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funds decrease due to anticipated reduction in long lead items in FY25 based on original program office estimate.</p>			
<p><b>Title:</b> E-7 C2ISR</p> <p><b>Description:</b> E-7 C2ISR efforts include but are not limited to advanced sensors, advanced communications, self-protection, enhanced cyber protection, and obsolescence resolution to ensure that the E-7 successfully integrates with joint and coalition forces in a net-centric environment.</p> <p><b>FY 2025 Plans:</b></p>	-	-	6.000

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604007F / E-7
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Conduct engineering studies to determine required modifications and associated costs to support risk reduction activities for program planning. Execute cooperative Independent Research and Development.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY25 New Start			
<b>Accomplishments/Planned Programs Subtotals</b>	411.704	681.039	418.513

**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 04 0604007F: <i>E-7A Wedgetail</i>	-	-	-	-	-	1,332.568	1,317.297	1,343.803	1,370.504	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

The Service Acquisition Executive (SAE) designated the E-7A program a Middle Tier of Acquisition (MTA) Rapid Prototyping effort in February 2023. A sole source J&A was awarded to Boeing which resulted in an undefinitized contract action (UCA) also in February 2023.

The Milestone Decision Authority for the E-7A program is the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics. Program management for the E-7A program is under direction of PEO Digital, located at Hanscom AFB, MA. The Air Force Life Cycle Management Center located at Wright-Patterson AFB, OH is the contracting authority for the E-7A program. AFLCMC provides contracting, legal, comptroller, programmatic, engineering, test, and logistics support.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604007F / E-7	<b>Project (Number/Name)</b> 644413 / E-7A
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
E-7A Rapid Prototyping Contract	SS/CPIF	The Boeing Company : TUKWILA, WA	-	377.737	Feb 2023	628.168	Feb 2024	335.637	Feb 2025	-		335.637	Continuing	Continuing	-
E-7A Platform One Contract	C/CPAF	Seed Innovations, LLC : MONUMENT, CO	-	6.152	Aug 2023	8.400	Aug 2024	7.725	Aug 2025	-		7.725	Continuing	Continuing	-
E-7 C2ISR Risk Reduction	TBD	Various : TBD	-	-		-		6.000	Mar 2025	-		6.000	Continuing	Continuing	-
<b>Subtotal</b>			-	383.889		636.568		349.362		-		349.362	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
E-7A Organic Software Support	PO	76th SWES : Tinker, OK	-	2.121	Mar 2023	5.300	Jan 2024	6.959	Jan 2025	-		6.959	Continuing	Continuing	-
E-7A Government Furnished Equipment (GFE)	Various	Various : TBD	-	3.735	Mar 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	5.856		5.300		6.959		-		6.959	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
E-7A Test	Various	Various : TBD	-	1.929	Mar 2023	5.055	Jan 2024	9.780	Jan 2025	-		9.780	Continuing	Continuing	-
<b>Subtotal</b>			-	1.929		5.055		9.780		-		9.780	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604007F / E-7	<b>Project (Number/Name)</b> 644413 / E-7A
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<b>Management Services (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
Program Management Administration	Various	AWACS & Wedgetail PMO : Hanscom AFB, MA	-	20.030	Mar 2023	34.116	Jan 2024	52.412	Jan 2025	-		52.412	Continuing	Continuing	-
<b>Subtotal</b>			-	20.030		34.116		52.412		-		52.412	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	411.704		681.039		418.513		-		418.513	Continuing	Continuing	N/A

**Remarks**  
E-7A effort will involve significant amounts of hardware purchases early in development which create a larger than normal amount of termination and liability costs that must be funded.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604007F / E-7	<b>Project (Number/Name)</b> 644413 / E-7A
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>E-7A PE 0604007F</b>	
E-7A Rapid Prototyping (RP)	
E-7A RP Undefined Contract Action (UCA) Award	
E-7A System Requirements Review	
E-7A Software Development Lab Delivery	
E-7A Government System Integration Lab Delivery	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604007F / E-7	<b>Project (Number/Name)</b> 644413 / E-7A

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>E-7A PE 0604007F</b>				
E-7A Rapid Prototyping (RP)	2	2023	2	2028
E-7A RP Undefinitized Contract Action (UCA) Award	2	2023	2	2023
E-7A System Requirements Review	3	2023	3	2023
E-7A Software Development Lab Delivery	3	2024	3	2024
E-7A Government System Integration Lab Delivery	4	2026	4	2026

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	164.648	83.336	20.580	0.000	20.580	20.822	20.939	15.371	15.506	Continuing	Continuing
640856: <i>AFWERX Operations and Support</i>	-	164.648	12.988	14.210	0.000	14.210	14.300	14.435	15.371	15.506	Continuing	Continuing
640858: <i>AFWERX Prime</i>	-	0.000	70.348	6.370	0.000	6.370	6.522	6.504	0.000	0.000	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The AFWERX mission is to accelerate agile and affordable capability transitions by teaming innovative technology developers with Airmen and Guardian talent. AFWERX leverages Spark (the Airmen and Guardian talent base), AFVentures (the dual-use expanded technology base), and Prime (technology transitions) to scale and accelerate the capability. Funding in this project supports AFWERX research and development, innovation hubs, and information technology, public affairs, and marketing. The Spark mission is to inspire and enable Airmen and Guardians to unleash their collective talent and ingenuity. Spark connects innovators using virtual collaboration, immersive training, and networking opportunities to inspire ideas and cultivate a more lethal force. By connecting operators closer to acquisition processes, Spark provides both a voice and a conduit to accelerate powerful ideas into game-changing operational realities. This focus helps guide technologies through transition across the valley from idea to scaled and sustained capability. The AFWERX Program reduces risk in emerging technology markets by partnering with industries through Prime investments and providing access to Government analysis, testing and certification capabilities. Prime investments focus on Government-Industry partnerships to influence and militarize emerging commercial capabilities to ensure US competitive advantage in key technology areas.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Technology Transfer capabilities. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F.

This program element may include necessary expenses to support the operation and maintenance of facilities to manage, execute, and deliver science and technology capabilities.

Beginning in FY 2023, funding for Project 640858 AFWERX Prime under Program 64858F Tech Transition transitioned to Project 640858 AFWERX Prime under this program per Congressional direction.

Beginning in FY 2024, PE 0604317F, Technology Transfer, Project 646030, AFWERX efforts, and Project 64317A, Technology Transfer Add, were transferred to PE 0604009F, AFWERX Prime, Project 640856 AFWERX Operations and Support.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	170.860	83.336	11.812	0.000	11.812
Current President's Budget	164.648	83.336	20.580	0.000	20.580
Total Adjustments	-6.212	0.000	8.768	0.000	8.768
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-6.212	0.000			
• Other Adjustments	0.000	0.000	8.768	0.000	8.768

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 640856: *AFWERX Operations and Support*

Congressional Add: *Program increase- supersonic aircraft technologies*

Congressional Add: *Program increase- Agility Prime*

Congressional Add Subtotals for Project: 640856

Congressional Add Totals for all Projects

	<b>FY 2023</b>	<b>FY 2024</b>
	4.817	-
	48.170	-
	52.987	-
	52.987	-

**Change Summary Explanation**

The decrease in FY 2025 is due to Air Force re-prioritization of efforts.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime				<b>Project (Number/Name)</b> 640856 / AFWERX Operations and Support			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
640856: AFWERX Operations and Support	-	164.648	12.988	14.210	0.000	14.210	14.300	14.435	15.371	15.506	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The AFWERX mission is to accelerate agile and affordable capability transitions by teaming innovative technology developers with Airmen and Guardian talent. AFWERX leverages Spark (the Airmen and Guardian talent base), AFVentures (the dual-use expanded technology base), and Prime (technology transitions) to scale and accelerate the capability. Funding in this project supports AFWERX research and development, innovation hubs, and information technology, public affairs, and marketing. The Spark mission is to inspire and enable Airmen and Guardians to unleash their collective talent and ingenuity. Spark connects innovators using virtual collaboration, immersive training, and networking opportunities to inspire ideas and cultivate a more lethal force. By connecting operators closer to acquisition processes, Spark provides both a voice and a conduit to accelerate powerful ideas into game-changing operational realities. This focus helps guide technologies through transition across the valley from idea to scaled and sustained capability.

Beginning in FY 2024, PE 0604317F, Technology Transfer, Project 646030, AFWERX efforts and Project 64317A, Technology Transfer Add were transferred to PE 0604009F, AFWERX Prime, Project 640856 AFWERX Operations and Support.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> AFWERX	0.000	12.988	14.210
<b>Description:</b> Transition affordable and accelerated capabilities by teaming innovative technology developers with Airmen and Guardian talent.			
<b>FY 2024 Plans:</b> Continue development and sustainment of the Acquisition Workforce and organizational capabilities. Funding levels provide for full operational capability for core operations. Core operations include civilian billets, expanded Spark engagement, and dynamic hub and site initiatives. Spark funding delivers development and fielding of Airmen and Guardian centric program management tools to connect the innovation ecosystem, establishes a Joint Spark innovation incubator. Dynamic hub and site initiatives seeks to establish a dynamic hub/site posturing strategy that is consistent with the DIAL-In (Defense, Industry, Academia, and Local Government Investment) model, with phased expanded growth across the innovation/commercial ecosystem.			
<b>FY 2025 Plans:</b> Continue development and sustainment of the Acquisition Workforce, organizational capabilities, and Spark activities. Spark funding delivers development and fielding of Airmen and Guardian centric program management tools to connect the innovation ecosystem, establishes a Joint Spark innovation incubator.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640856 / AFWERX Operations and Support

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
FY 2025 increased compared to FY 2024 by \$1.222 million due to increased emphasis in this area.			
<p><b>Title:</b> AFWERX Prime</p> <p><b>Description:</b> Execution of efforts to explore and transition emerging dual-use technologies under this new acquisition approach to include evaluation of transformative vertical flight and agile logistics supporting distributed operations, autonomous capabilities, advanced energy and hybrid propulsion, and rapid commercial software capabilities. Activities include technical exchanges, research, development, certification, testing, and evaluation.</p> <p><b>FY 2024 Plans:</b> FY 2024 AFWERX Prime funding was realigned to Project 640858 in this Program 64009F.</p> <p><b>FY 2025 Plans:</b> Not applicable</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Not applicable</p>	71.328	0.000	0.000
<p><b>Title:</b> Blended Wing Body - Next Generation Large Aircraft</p> <p><b>Description:</b> In partnership with Defense Innovation Unit, allies, industry stakeholders, and private investors, Next-Gen Large Aircraft targets over a 30% increase in aerodynamic efficiency over traditional tube-and-wing large aircraft (given same engines). For military applications, initial analysis shows increases in combat capability greater than the percent increase in fuel efficiency for both aerial refueling and cargo aircraft productivity (e.g. 30% increase in fuel efficiency can equal 60% or more increased aerial refueling fuel offload at range). Project goals include designing an aircraft that can cost-effectively scale up and down to enable acquisition by a broader community of government and industry stakeholders. Overall effort intends to manufacture a prototype large-scale aircraft for certification and testing. This project works in coordination with DOD's Chief Sustainability Officer and the Air Force Operational Energy office.</p> <p><b>FY 2024 Plans:</b> This thrust was realigned to the Prototyping Project 645351 under Program 64858F Tech Transition in FY24.</p> <p><b>FY 2025 Plans:</b> Not applicable</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Not applicable</p>	40.333	0.000	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	111.661	12.988	14.210

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640856 / AFWERX Operations and Support
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	FY 2023	FY 2024
<b>Congressional Add:</b> Program increase- supersonic aircraft technologies <i>FY 2023 Accomplishments:</i> Conduct Congressionally directed effort.	4.817	-
<b>Congressional Add:</b> Program increase- Agility Prime <i>FY 2023 Accomplishments:</i> Conduct Congressionally directed effort.	48.170	-
<b>Congressional Adds Subtotals</b>	52.987	-

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The Innovation Hubs, products and training, and innovation facilitation are awarded through a combination of Partnership Intermediary Agreements and competitive contract vehicles, some of which are directly awarded by AFWERX and others are executed through federal partnerships as appropriate.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640856 / AFWERX Operations and Support
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Agility Prime AOI 1 Performer A	C/FFP	Various : Various	-	11.127	Apr 2023	-		-		-		-	Continuing	Continuing	-
Agility Prime AOI 1 Performer B	C/FFP	Various : Various	-	3.128	Jun 2023	-		-		-		-	Continuing	Continuing	-
Agility Prime AOI 2 Performer A	C/FFP	Various : Various	-	8.279	Mar 2023	-		-		-		-	Continuing	Continuing	-
Agility Prime AOI 2 Performer B	C/FFP	Various : Various	-	3.223	Apr 2023	-		-		-		-	Continuing	Continuing	-
Agility Prime AOI 3 Performer A	C/FFP	Various : Various	-	7.127	Apr 2023	-		-		-		-	Continuing	Continuing	-
Agility Prime AOI 3 Performer B	C/FFP	Various : Various	-	9.133	Mar 2023	-		-		-		-	Continuing	Continuing	-
Air Race Partners	RO	Various : Various	-	5.255	Apr 2023	-		-		-		-	Continuing	Continuing	-
Next Gen Large Aircraft	MIPR	DUI : Mountain View, CA	-	38.000	Jun 2023	-		-		-		-	Continuing	Continuing	-
Congressional Add-Agility Prime	Various	Various : Various	-	48.170	Sep 2023	-		-		-		-	Continuing	Continuing	-
Congressional Add-AFWERX Prime Supersonic	Various	Various : Various	-	4.817	May 2023	-		-		-		-	Continuing	Continuing	-
AFWERX Operations and Support	C/Various	Various : Various	-	-		0.051		6.010		-		6.010	Continuing	Continuing	-
<b>Subtotal</b>			-	138.259		0.051		6.010		-		6.010	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Modeling and Analytics Support	MIPR	Various : Various	-	1.537	Nov 2022	-		-		-		-	Continuing	Continuing	-
Government Test Support	WR	Various : Various	-	3.225	Dec 2022	-		-		-		-	Continuing	Continuing	-
Airworthiness and Test Support	Various	Various : Various	-	2.137	Nov 2022	-		-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640856 / AFWERX Operations and Support
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Acquisition Workforce	Allot	Various : Various	-	-		12.937		8.200		-		8.200	Continuing	Continuing	-
<b>Subtotal</b>			-	6.899		12.937		8.200		-		8.200	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Autonomy and Hybrid Stratfi	Various	Various : Various	-	5.258	Dec 2022	-		-		-		-	Continuing	Continuing	-
Autonomy and Hybrid Stratfi 2	Various	Various : Various	-	5.258	Feb 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	10.516		-		-		-		-	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFWERX Prime Management PMA	Various	Various : Various	-	6.641	Oct 2022	-		-		-		-	Continuing	Continuing	-
Next Generation Large Aircraft PMA	Various	Various : Various	-	2.333	Jul 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	8.974		-		-		-		-	Continuing	Continuing	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	164.648	12.988	14.210	-	14.210	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640856 / AFWERX Operations and Support

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>AFWERX Prime Product Development</i></b>																												
Air Force Airworthiness Assessments (Part 2)																												
Base Support Agreements																												
Bed-down																												
<b><i>Acquisition Workforce/Core Operations</i></b>																												
Acquisition Workforce/Core Operations																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640856 / AFWERX Operations and Support

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>AFWERX Prime Product Development</i></b>				
Air Force Airworthiness Assessments (Part 2)	2	2023	4	2023
Base Support Agreements	1	2023	1	2023
Bed-down	4	2023	4	2023
<b><i>Acquisition Workforce/Core Operations</i></b>				
Acquisition Workforce/Core Operations	1	2024	4	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime				<b>Project (Number/Name)</b> 640858 / AFWERX Prime			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
640858: AFWERX Prime	-	0.000	70.348	6.370	0.000	6.370	6.522	6.504	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

AFWERX Prime is a new acquisition approach that uses government-specific resources to reduce risk in emerging technology markets while partnering with investors, industry, interagency, and international partners for accelerated, affordable, and agile commercial and military capability. Initial efforts of AFWERX Prime Agility Prime program provides research, development, testing, and evaluation to field transformative vertical flight technology. These systems incorporate non-traditional electric or hybrid propulsion for manned or optionally manned missions, with onboard, remote, or eventually autonomous control. Agility Prime efforts leverages commercial investment in technologies that support mobility and sustainment in benign or contested environments to enable agile, lower-cost distributed logistics, humanitarian operations, disaster response operations, and communications capabilities.

Agility Prime leverages emerging vertical lift and logistics platforms, enabling resilient basing and sustainment options. Future Prime initiatives will use the same paradigm to leverage commercial technology and investment for high returns on government participation in this sector, achieving advanced, agile, and accelerated fielding of commercial and military capability bolstering national security and domestic technological dominance. AFWERX Prime autonomy efforts aim to accelerate enabling autonomy technologies and dual-use approaches to transition autonomous capabilities into fielded capabilities.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> AFWERX Prime	0.000	70.348	6.370
<b>Description:</b> Execution of efforts to explore and transition emerging dual-use technologies under this new acquisition approach to include evaluation of transformative vertical flight and agile logistics supporting distributed operations, autonomous capabilities, advanced energy and hybrid propulsion, and rapid commercial software capabilities. Activities include technical exchanges, research, development, certification, testing, and evaluation.			
<b>FY 2024 Plans:</b> Efforts include enabling technology risk reduction with multiple manufacturers for commercial and operations assessment. For Agility Prime, continue prototype testing to characterize performance, handling qualities, and mission system effectiveness. Continue facilitating airworthiness assessments aimed at initial flight certified vehicles. Initiate and complete flight tests in realistic operating environments and scenarios to provide data for business case analysis and fielding. Continue research, development, test and evaluation for key enabling technologies of autonomous operations and vehicle collaboration along with hybrid propulsion. For Autonomy Prime, initiate a low-cost pipeline and proving ground for evaluate, iterate, and mature of autonomous capabilities for industry and government organizations, including dual-use applications. Supports commercial advancement of overlapping autonomous mission capabilities and transitioning capabilities into major Air Force autonomy programs. With Integration Prime, initiate a multi-level environment to prototype and transition integrating software capabilities			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640858 / AFWERX Prime
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
<p>with industry and non-traditional solution providers and software integration stacks to enable rapid adaptability and scalability of mission threads along with a government owned open architecture toolkit for integrating applications onto multiple platforms.</p> <p><b>FY 2025 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue government test support and personnel support for existing program contract periods of performance across the AFWERX Prime portfolio.</li> <li>- Continue Autonomy Prime proving ground evaluations in collaboration with industry for periods of performance remaining.</li> <li>- Complete Autonomy Prime evaluation efforts for technology risk reduction with multiple manufacturers for commercial and operations assessment.</li> <li>- Continue remaining operational evaluations for Agility Prime, leveraging planned commercial certifications and potential initial service use cases.</li> <li>- Continue remaining software integration sprints for Integration Prime efforts for addressing mission thread gaps.</li> <li>- Complete Integration Prime capability evaluation sprints after remaining periods of performance.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 decreased compared to FY 2024 by \$63.978 million. Funding decrease is due to Air Force funding re-prioritization.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	70.348	6.370

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

AFWERX Prime effort will proceed along the following path: 1) investigate details regarding potential commercial markets; 2) identify technologies that are likely to result in successful prototypes and support future DAF capability needs and Operational Imperatives ; 3) create collaborative test plans potentially offering test assets and expertise; 4) leverage this campaign for near-term airworthiness as well as preparation for procurement of hardware, software, data, or services. The intent is to accelerate learning to enable early adoption, procurement, and fielding.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640858 / AFWERX Prime
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Agility Prime AOI 1 Performer A	C/FFP	Various : Various	-	-		5.000	Dec 2023	-		-		-	Continuing	Continuing	-
Agility Prime AOI 1 Performer B	C/FFP	Various : Various	-	-		1.000	Feb 2024	-		-		-	Continuing	Continuing	-
Agility Prime AOI 2 Performer A	C/FFP	Various : Various	-	-		5.000	Dec 2023	-		-		-	Continuing	Continuing	-
Agility Prime AOI 3 Performer A	C/FFP	Various : Various	-	-		3.500	May 2024	-		-		-	Continuing	Continuing	-
Agility Prime AOI 3 Performer B	C/FFP	Various : Various	-	-		3.500	May 2024	-		-		-	Continuing	Continuing	-
Autonomy Prime Line of Effort A	C/FFP	Various : Various	-	-		4.000	Dec 2023	-		-		-	Continuing	Continuing	-
Autonomy Prime Line of Effort B	C/FFP	Various : Various	-	-		4.000	Feb 2024	-		-		-	Continuing	Continuing	-
Autonomy Prime Line of Effort C	C/FFP	Various : Various	-	-		3.000	May 2024	-		-		-	Continuing	Continuing	-
Autonomy Prime Line of Effort D	C/FFP	Various : Various	-	-		4.000	Dec 2023	-		-		-	Continuing	Continuing	-
Integration Prime Capability Sprint A	C/FFP	Various : Various	-	-		3.500	Jan 2024	-		-		-	Continuing	Continuing	-
Integration Prime Capability Sprint B	C/FFP	Various : Various	-	-		3.500	Apr 2024	-		-		-	Continuing	Continuing	-
Integration Prime Capability Sprint C	C/FFP	Various : Various	-	-		3.500	Jul 2024	-		-		-	Continuing	Continuing	-
Integration Prime Open Architecture	C/FFP	Various : Various	-	-		3.000	Dec 2023	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		46.500		-		-		-	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640858 / AFWERX Prime
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Modeling and Analytics Support	MIPR	Various : Various	-	-		1.000	Nov 2023	-		-		-	Continuing	Continuing	-
Government Test Support	MIPR	Various : Various	-	-		5.000	Dec 2023	2.000	Dec 2024	-		2.000	Continuing	Continuing	-
Airworthiness and Test Support	Various	Various : Various	-	-		2.000	Nov 2023	1.500	Nov 2024	-		1.500	Continuing	Continuing	-
<b>Subtotal</b>			-	-		8.000		3.500		-		3.500	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Integration	Various	Various : Various	-	-		5.000	Feb 2024	1.370	Dec 2024	-		1.370	Continuing	Continuing	-
Autonomy Test Capabilities	Reqn	Various : Various	-	-		4.848	Dec 2023	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		9.848		1.370		-		1.370	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFWERX Prime Management PMA	Various	Various : Various	-	-		6.000	Dec 2024	1.500	Nov 2024	-		1.500	Continuing	Continuing	-
<b>Subtotal</b>			-	-		6.000		1.500		-		1.500	Continuing	Continuing	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>			-	-	70.348	-	6.370	-	6.370	Continuing	Continuing	N/A

**Remarks**

**UNCLASSIFIED**

**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640858 / AFWERX Prime
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>AFWERX Prime Product Development</i></b>	
Federal Aviation Administration Certification	█
Bed-down	██████████
Autonomy - Proving Ground Operations	████████████████████
Software Integration Sprints	████████████████████
Test and Evaluation/Support Personnell	██

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604009F / AFWERX Prime	<b>Project (Number/Name)</b> 640858 / AFWERX Prime

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>AFWERX Prime Product Development</i></b>				
Federal Aviation Administration Certification	4	2024	4	2024
Bed-down	4	2023	4	2024
Autonomy - Proving Ground Operations	1	2024	4	2025
Software Integration Sprints	2	2024	4	2025
Test and Evaluation/Support Personnell	1	2024	4	2027

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604015F / <i>Long Range Strike - Bomber</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	3,037.499	2,984.143	2,654.073	0.000	2,654.073	2,051.427	1,648.845	1,478.595	1,486.123	0.000	15,340.705
643308: <i>B-21 Development</i>	-	3,037.499	2,742.948	2,266.370	0.000	2,266.370	1,652.091	1,274.106	1,222.818	1,040.550	0.000	13,236.382
644044: <i>B-21 Modernization</i>	-	0.000	241.195	387.703	0.000	387.703	399.336	374.739	255.777	445.573	0.000	2,104.323

**A. Mission Description and Budget Item Justification**

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. Program overview provided below.

The Long Range Strike - Bomber (B-21 Raider) is crucial to the nuclear modernization plan, forming the backbone of the Nation's future bomber force, providing both conventional and nuclear capability. The B-21 platform provides range, access, and payload to go anywhere needed, with the weapons required to deter and win our nation's wars. Its open system architecture will enable rapid integration of future capabilities, keeping the platform relevant and effective as the threat environment evolves. The Air Force requires a minimum of 100 B-21s as part of the long-term bomber force. The Engineering and Manufacturing Development (EMD) contract was awarded in 2015, followed by a Critical Design Review (CDR) completed in 2018. The first test aircraft is executing the B-21 flight test campaign and an approved Milestone C decision with all statutory and regulatory documentation is complete, unlocking the award of the first production lot, awarded in 2023. B-21 aircraft will be delivered to operational bases in the mid-2020s.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	3,143.584	2,984.143	2,465.817	0.000	2,465.817
Current President's Budget	3,037.499	2,984.143	2,654.073	0.000	2,654.073
Total Adjustments	-106.085	0.000	188.256	0.000	188.256
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-0.100	0.000			
• SBIR/STTR Transfer	-105.985	0.000			
• Other Adjustments	0.000	0.000	188.256	0.000	188.256

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0604015F / <i>Long Range Strike - Bomber</i>

**Change Summary Explanation**

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(A&S)/DSP.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604015F / <i>Long Range Strike - Bomber</i>				<b>Project (Number/Name)</b> 643308 / <i>B-21 Development</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
643308: <i>B-21 Development</i>	-	3,037.499	2,742.948	2,266.370	0.000	2,266.370	1,652.091	1,274.106	1,222.818	1,040.550	0.000	13,236.382
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. Program overview provided below.

The Long Range Strike - Bomber (B-21 Raider) is crucial to the nuclear modernization plan, forming the backbone of the Nation's future bomber force, providing both conventional and nuclear capability. The B-21 platform provides range, access, and payload to go anywhere needed, with the weapons required to deter and win our nation's wars. Its open system architecture will enable rapid integration of future capabilities, keeping the platform relevant and effective as the threat environment evolves. The Air Force requires a minimum of 100 B-21s as part of the long-term bomber force. The Engineering and Manufacturing Development (EMD) contract was awarded in 2015, followed by a Critical Design Review (CDR) completed in 2018. The first test aircraft is executing the B-21 flight test campaign and an approved Milestone C decision with all statutory and regulatory documentation is complete, unlocking the award of the first production lot, awarded in 2023. B-21 aircraft will be delivered to operational bases in the mid-2020s.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Long Range Strike Bomber (B-21) Development	3,037.499	2,742.948	2,266.370
<b>Description:</b> The B-21 Raider will be a dual-capable penetrating strike stealth bomber capable of delivering both conventional and nuclear munitions. Designed to operate in tomorrow's high-end threat environment, the B-21 will play a critical role in ensuring America's enduring airpower capability.			
<b>FY 2024 Plans:</b> Continue test aircraft build, scaling manufacturing, infrastructure and capacity across the industrial base, and planning/execution of test and evaluation activities. This funding will keep B-21 Raider development on track in support of the program's transition toward low-rate initial production and fielding.			
<b>FY 2025 Plans:</b> Continue test aircraft build, scaling manufacturing, infrastructure and capacity across the industrial base, and execution of test and evaluation activities. This funding will keep B-21 Raider development on track in support of the program's continued transition toward low-rate initial production and fielding.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604015F / <i>Long Range Strike - Bomber</i>	<b>Project (Number/Name)</b> 643308 / <i>B-21 Development</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
FY 2025 decreased from FY 2024 by \$476.578M in support of the program's transition into low-rate initial production and fielding.			
<b>Accomplishments/Planned Programs Subtotals</b>	3,037.499	2,742.948	2,266.370

**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• MILCON PE 0604015: <i>Long Range Strike Bomber</i>	175.900	243.592	220.255	-	220.255	745.400	351.850	358.887	366.425	0.000	2,462.309
• OPAF 01 B02100: <i>B-21 Raider</i>	1,651.596	2,325.093	2,678.268	-	2,678.268	3,904.833	4,035.548	5,396.493	5,776.004	0.000	25,767.835
• OPAF 03 834130: <i>Air Force Physical Security System</i>	5.206	7.020	6.206	-	6.206	-	-	-	-	0.000	18.432

**Remarks**

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(A&S)/DSP.

**D. Acquisition Strategy**

The B-21 philosophy to drive success has been to actively manage the program, contract and contractor; to partner with the prime and supply chain for win-win successes; and to aggressively identify and mitigate risk early. The acquisition strategy incentivizes industry partners to achieve cost, schedule and performance objectives.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604015F / <i>Long Range Strike - Bomber</i>	<b>Project (Number/Name)</b> 643308 / <i>B-21 Development</i>
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Actual breakout provided in Special Access Program Annual Report to Congress	Various	Not specified. : CA	-	3,037.499		2,742.948		2,266.370		-		2,266.370	Continuing	Continuing	-
<b>Subtotal</b>			-	3,037.499		2,742.948		2,266.370		-		2,266.370	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	3,037.499		2,742.948		2,266.370		-		2,266.370	Continuing	Continuing	N/A

**Remarks**  
 This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(A&S)/DSP.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604015F / <i>Long Range Strike - Bomber</i>	<b>Project (Number/Name)</b> 643308 / <i>B-21 Development</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Long Range Strike Bomber</i></b>	
Actual schedule provided in Special Access Program Annual Report to Congress	

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604015F / <i>Long Range Strike - Bomber</i>	<b>Project (Number/Name)</b> 643308 / <i>B-21 Development</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Long Range Strike Bomber</i></b>				
Actual schedule provided in Special Access Program Annual Report to Congress	1	2023	4	2029

**Note**  
 This program is reported in accordance with Title 10, USC, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(A&S)/DSP.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604015F / Long Range Strike - Bomber				<b>Project (Number/Name)</b> 644044 / B-21 Modernization			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
644044: B-21 Modernization	-	0.000	241.195	387.703	0.000	387.703	399.336	374.739	255.777	445.573	0.000	2,104.323
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. Program overview provided below.

The Long Range Strike - Bomber (B-21 Raider) is crucial to the nuclear modernization plan, forming the backbone of the Nation's future bomber force, providing both conventional and nuclear capability. The B-21 platform provides range, access, and payload to go anywhere needed, with the weapons required to deter and win our nation's wars. Its open system architecture will enable rapid integration of future capabilities, keeping the platform relevant and effective as the threat environment evolves. The Air Force requires a minimum of 100 B-21s as part of the long-term bomber force. The Engineering and Manufacturing Development (EMD) contract was awarded in 2015, followed by a Critical Design Review (CDR) completed in 2018. The first test aircraft is executing the B-21 flight test campaign and an approved Milestone C decision with all statutory and regulatory documentation is complete, unlocking the award of the first production lot, awarded in 2023. B-21 aircraft will be delivered to operational bases in the mid-2020s.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Long Range Strike Bomber (B-21) Modernization	-	241.195	387.703
<b>Description:</b> B-21 Raider will be a dual-capable penetrating strike stealth bomber capable of delivering both conventional and nuclear munitions. Designed to operate in tomorrow's high-end threat environment, the B-21 will play a critical role in ensuring America's enduring airpower capability.			
<b>FY 2024 Plans:</b> FY 2024 includes funding for the continuation of modernization studies/ technical risk reduction activities. In addition, modernization activities will be supported, which includes but is not limited to; Long Range Standoff Weapon (LRSO) integration, conventional weapon integration, air vehicle provisioning for future capabilities, sensors, payloads, and continued nuclear certification activities.			
<b>FY 2025 Plans:</b> FY 2025 includes funding for the continuation of modernization studies/ technical risk reduction activities. In addition, modernization activities will be supported, which includes but is not limited to, Long Range Standoff Weapon (LRSO) integration, conventional weapon integration, air vehicle provisioning for future capabilities, sensors, payloads, and continued nuclear certification activities.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604015F / <i>Long Range Strike - Bomber</i>	<b>Project (Number/Name)</b> 644044 / <i>B-21 Modernization</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
FY 2025 increased from FY 2024 by \$146.508M in support of the program's continuation of modernization activities, to include enhanced technologies, and nuclear certification.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	241.195	387.703

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(AT&L)/DSP.

**D. Acquisition Strategy**

The B-21 philosophy to drive success has been to actively manage the program, contract and contractor; to partner with the prime and supply chain for win-win successes; and to aggressively identify and mitigate risk early. The acquisition strategy incentivizes industry partners to achieve cost, schedule and performance objectives.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604015F / Long Range Strike - Bomber	<b>Project (Number/Name)</b> 644044 / B-21 Modernization
--	--	---

Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Actual breakout provided in Special Access Program Annual Report to Congress	Various	Not specified. : FL	-	-		241.195		387.703		-		387.703	Continuing	Continuing	-
<b>Subtotal</b>			-	-		241.195		387.703		-		387.703	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	-		241.195		387.703		-		387.703	Continuing	Continuing	N/A

**Remarks**  
 This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(A&S)/DSP.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604015F / <i>Long Range Strike - Bomber</i>	<b>Project (Number/Name)</b> 644044 / <i>B-21 Modernization</i>
--	---	--

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Long Range Strike Bomber</i></b>	
Actual schedule provided in Special Access Program Annual Report to Congress	[REDACTED]

**UNCLASSIFIED**

**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604015F / <i>Long Range Strike - Bomber</i>	<b>Project (Number/Name)</b> 644044 / <i>B-21 Modernization</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Long Range Strike Bomber</i></b>				
Actual schedule provided in Special Access Program Annual Report to Congress	1	2024	4	2029

**Note**

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(A&S)/DSP.

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604025F / <i>Rapid Defense Experimentation Reserve (RDER)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	61.915	154.300	75.051	0.000	75.051	0.000	0.000	0.000	0.000	Continuing	Continuing
640858: <i>AFWERX Prime</i>	-	0.000	154.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
640862: <i>Rapid Defense Experimentation Reserve</i>	-	61.915	0.000	75.051	0.000	75.051	0.000	0.000	0.000	0.000	Continuing	Continuing

**Note**  
This program, BA 4, PE 0604025F, project , RDT&E Program Wide Activities, is a new start.

**A. Mission Description and Budget Item Justification**

RDER Efforts for FY 25:  
-JRBL Cage: Consolidation of Best in Breed Podded technologies  
-Classified Projects (more information available in appropriate forums)

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b><u>FY 2023</u></b>	<b><u>FY 2024</u></b>	<b><u>FY 2025 Base</u></b>	<b><u>FY 2025 OCO</u></b>	<b><u>FY 2025 Total</u></b>
Previous President's Budget	0.000	154.300	0.000	0.000	0.000
Current President's Budget	61.915	154.300	75.051	0.000	75.051
Total Adjustments	61.915	0.000	75.051	0.000	75.051
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	64.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-2.085	0.000	75.051	0.000	75.051

**Change Summary Explanation**

FY 2025 decreased from FY 2024 by 79.249 million as RDER funding is provided via Program Directive Memorandum action during execution year, with no funds over the Future Years Defense Program (FYDP).

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604025F / <i>Rapid Defense Experimentation Reserve (RDER)</i>				<b>Project (Number/Name)</b> 640858 / <i>AFWERX Prime</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
640858: <i>AFWERX Prime</i>	-	0.000	154.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Department of the Air Force's component of the Rapid Defense Experimentation Reserve (RDER) is executed within this program element (PE). To facilitate rapid modernization of the force, the Rapid Defense Experimentation Reserve (RDER) initiative was established in the Defense Planning Guidance for Fiscal Years 2023-2027, to encourage multi-component experimentation through a campaign of learning. Services, Agencies, and other participating organizations are to identify "best of breed" capabilities developed among the DoD prototyping programs, and execute approved projects through large-scale, cross-service experiments in order to refine and/or validate the Joint Warfighting Concept (JWC). Organizations nominate proposals to the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) that are multi-component — involving Joint Services, International partners and/or other government agencies and link to one or more of the four key supporting concepts ("functional battles") of the Joint Warfighting Concept: Joint Concept for Fires, Joint Concept for Command and Control, Joint Concept for Contested Logistics, and Joint Concept for Information Advantage.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Rapid Defense Experimentation Reserve	0.000	154.300	0.000
<p><b>Description:</b> The Department of Defense implement multiple RDER experimentation series through Service nominated projects with execution timelines ranging from one to two years. The USD (R&amp;E) will review project progress, and recommend new focus areas at least annually with the goal of quickly incorporating the most promising innovative prototypes into experiments, and promptly terminating projects that fail to achieve expectations. To incentivize a disciplined approach to rapidly identify, incorporate, and execute projects largely through the Military Services, the Department will fund approved Service projects for the upcoming fiscal year out of the Department reserves. Funding decisions on additional funds in follow-on years for new projects, and funding decrements for project terminations will be incorporated in budgets annually based on emerging requirements and periodic assessments of project viability. Services will execute these funds under oversight of the OSD in a manner consistent with the experimentation scenario for which individual projects were selected. Service experimentation outcomes will be designed to validate required capabilities enabling the JWC by evaluating and integrating prototyped technologies in operationally relevant, multi-domain environments. Experimentation results will facilitate Joint Staff analysis in the evaluation of the Joint Warfighting Concept, assist the Joint Requirements Oversight Counsel in requirements determination, and inform the Deputy's Management Action Group to make budget decisions that effect changes throughout the Department.</p> <p><b>FY 2024 Plans:</b></p>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604025F / <i>Rapid Defense Experimentation Reserve (RDER)</i>	<b>Project (Number/Name)</b> 640858 / <i>AFWERX Prime</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>RDER Efforts for 24-1:</p> <ul style="list-style-type: none"> <li>- Extended Range Hybrid eVTOL: Leverages Agility Prime government / industry partnership developing hybrid eVTOL aircraft with increased range (500 mi).</li> <li>- Aerial Port of the Future APOF</li> <li>- Large Area Runway Repair Gone Expeditionary (LAARGE): Large crater runway repair using nanomaterials.</li> <li>- Rapid Infrastructure Deployment: Rapidly deployable "base" that leverages alternative energy sources, secure comms, and modular structures.</li> <li>- Amphibious Contested Logistics Solutions: C-130 modification to enable takeoff and landing from water and amphibious employment of SEAD/DEAD, comms/C2 and logistics</li> <li>- Software Programmable Agile RF Tactical Aerial Network (SPARTAN2): Enhance connectivity, agility, and robustness of localized comm networks with low-cost wideband electronically-steered antennae for SPARTAN Software Radio with air and ground configurations and new beacon discovery waveform.</li> <li>- Classified Projects (more information available in appropriate forums)</li> </ul> <p>RDER Efforts for 24-2:</p> <ul style="list-style-type: none"> <li>- Control Systems for Coordinated Operations (CoSyCo): Validated and rapidly field-able datalinks and C2 networks, along with CONOPS and TTPs, for coordinated Autonomous Collaborative Platform (ACP) operations. 10M or possibly</li> <li>- LTAMDS-V: Low cost (lower than 3DELRR or LTAMDS), smaller form factor, fire control sensor with extended detection range enabling longer distance engagements for NASAMS than standard Sentinel A3 radars. Has classified multi-mission capability. Leverages significant Raytheon investment and maintains all the benefits of the US Army PoR LTAMDS radar.</li> <li>- Joint Tactical Edge Network (JTEN): Persistent information sharing across dissimilar message formats and heterogeneous data links (both IP and non-IP). JTEN architecture modular, non-proprietary, and based on Open Mission Systems (OMS) and Universal Command and Control (UCI) standards</li> <li>- Low Cost Threat Emitter (LCTE): Tactical, multi-band, SDR-based threat emissions simulator (threat emitter) Portable, programmable, disposable, modular and 5G connected</li> <li>- (GLADIATR) Rapidly Deployable Hypervelocity Gun Weapon System: Cost curve flipping (100k per shot) counter cruise missile system (highly mobile, C-130 transportable) capable of addressing larger threat space than existing systems. Efforts will focus on integration of system radar and fire direction system with US Army IBCS.</li> <li>- Classified Projects (more information available in appropriate forums)</li> </ul> <p><b>FY 2025 Plans:</b></p>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604025F / <i>Rapid Defense Experimentation Reserve (RDER)</i>	<b>Project (Number/Name)</b> 640858 / <i>AFWERX Prime</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Current scheduled plans for FY 2025 include initiation of the collaborative joint best of breed podded solution as well as other classified efforts.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 decreased from FY 2024 by 79.249 million as RDER funding is provided during execution year, with no funds over the Future Years Defense Program (FYDP).			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	154.300	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 04 0604858F: <i>Tech Transition Program</i>	64.000	-	-	-	-	-	-	-	-	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

Various

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604025F / <i>Rapid Defense Experimentation Reserve (RDER)</i>	<b>Project (Number/Name)</b> 640858 / <i>AFWERX Prime</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
RDER 24-1 Extended Range Hybrid eVTOL	Various	Various : TBD	-	-		20.000	Dec 2023	-		-		-	Continuing	Continuing	-
RDER 24-1 Rapid Infrastructure Deployment	Various	Various : TBD	-	-		6.300	Oct 2023	-		-		-	Continuing	Continuing	-
RDER 24-1 Amphibious Contested Logistics Solutions	Various	Various : TBD	-	-		20.000	Oct 2023	-		-		-	Continuing	Continuing	-
RDER 24-1 Software Programmable Agile RF Tactical Aerial Network (SPARTAN 2)	Various	Various : TBD	-	-		6.700	Dec 2023	-		-		-	Continuing	Continuing	-
RDER 24-1 Classified	Various	Various : TBD	-	-		25.000	Oct 2023	-		-		-	Continuing	Continuing	-
RDER 24- 1 Aerial-Port of the Future	Various	Various : TBD	-	-		1.500	Dec 2023	-		-		-	Continuing	Continuing	-
RDER 24 -2 LTAMDS V	Various	Various : TBD	-	-		17.000	Nov 2023	-		-		-	Continuing	Continuing	-
RDER 24-2 Joint Tactical Edge Network (JTEN)	Various	Various : TBD	-	-		13.000	Oct 2023	-		-		-	Continuing	Continuing	-
RDER 24-2 GLADIATR Rapidly Deployable Hypervelocity Gun Weapon System	Various	Various : TBD	-	-		20.000	Dec 2023	-		-		-	Continuing	Continuing	-
RDER 24-2 Low Cost Threat Emitter	Various	Various : TBD	-	-		4.800	Dec 2023	-		-		-	Continuing	Continuing	-
RDER 24-2 Classified	Various	Various : TBD	-	-		10.000	Oct 2023	-		-		-	Continuing	Continuing	-
RDER 24-2 Control Systems for Coordinated Operations (CoSyCo)	Various	Various : TBD	-	-		10.000	Dec 2023	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		154.300		-		-		-	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	-		154.300		-		-		-	Continuing	Continuing	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2025 Air Force							<b>Date:</b> March 2024			
<b>Appropriation/Budget Activity</b> 3600 / 4			<b>R-1 Program Element (Number/Name)</b> PE 0604025F / <i>Rapid Defense Experimentation Reserve (RDER)</i>			<b>Project (Number/Name)</b> 640858 / <i>AFWERX Prime</i>				
	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

Remarks

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604025F / <i>Rapid Defense Experimentation Reserve (RDER)</i>	<b>Project (Number/Name)</b> 640858 / <i>AFWERX Prime</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Rapid Defense Experimentation Reserve</i></b>																												
RDER																												
Extended Range Hybrid eVTOL																												
Aerial Port of the Future																												
Large Area Runway Repair Gone Expeditionary																												
Rapid Infrastructure Deployment																												
Amphibious Contested Logistics Solutions																												
Software Programmable Agile RF Tactical Aerial Network																												
Classified																												
Control Systems for Coordinated Operations																												
LTAMDS V Low Cost																												
Joint Tactical Edge Network																												
Low Cost Threat Emitter																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604025F / <i>Rapid Defense Experimentation Reserve (RDER)</i>	<b>Project (Number/Name)</b> 640858 / <i>AFWERX Prime</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Rapid Defense Experimentation Reserve</i></b>				
RDER	1	2024	4	2024
Extended Range Hybrid eVTOL	1	2024	4	2024
Aerial Port of the Future	1	2024	4	2024
Large Area Runway Repair Gone Expeditionary	1	2024	4	2024
Rapid Infrastructure Deployment	1	2024	4	2024
Amphibious Contested Logistics Solutions	1	2024	4	2024
Software Programmable Agile RF Tactical Aerial Network	1	2024	4	2024
Classified	1	2024	4	2024
Control Systems for Coordinated Operations	1	2024	4	2024
LTAMDS V Low Cost	1	2024	4	2024
Joint Tactical Edge Network	1	2024	4	2024
Low Cost Threat Emitter	1	2024	4	2024

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604025F / Rapid Defense Experimentation Reserve (RDER)	<b>Project (Number/Name)</b> 640862 / Rapid Defense Experimentation Reserve
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To	Total
											Complete	Cost
640862: Rapid Defense Experimentation Reserve	-	61.915	0.000	75.051	0.000	75.051	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
This program, BA 4, PE 0604025F, project , RDT&E Program Wide Activities, is a new start.

**A. Mission Description and Budget Item Justification**  
RDER Efforts for FY 25:  
-JRBL Cage: Consolidation of Best in Breed Podded technologies  
-Classified Projects (more information available in appropriate forums)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
<b>Title:</b> RDT&E Program Wide Activities	61.915	0.000	75.051
<b>Description:</b> RDER Efforts for FY 25: -JRBL Cage: Consolidation of Best in Breed Podded technologies -Classified Projects (more information available in appropriate forums)			
<b>FY 2024 Plans:</b> N/A. FY 2025 effort			
<b>FY 2025 Plans:</b> RDER Efforts for FY 25: -JRBL Cage: Consolidation of Best in Breed Podded technologies -Classified Projects (more information available in appropriate forums)			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 decreased from FY 2024 by \$79.249 million as RDER funding is provided during execution year, with no funds over the Future Years Defense Program (FYDP).			
<b>Accomplishments/Planned Programs Subtotals</b>	61.915	0.000	75.051

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2025 Air Force		Date: March 2024
Appropriation/Budget Activity 3600 / 4	R-1 Program Element (Number/Name) PE 0604025F / Rapid Defense Experimentation Reserve (RDER)	Project (Number/Name) 640862 / Rapid Defense Experimentation Reserve

C. Other Program Funding Summary (\$ in Millions)

Remarks

D. Acquisition Strategy

various





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604025F / <i>Rapid Defense Experimentation Reserve (RDER)</i>	<b>Project (Number/Name)</b> 640862 / <i>Rapid Defense Experimentation Reserve</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>JRBLCage</b>				
JRBLCage	1	2025	4	2025
<b>Classified efforts</b>				
Classified efforts	1	2025	4	2025

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604032F / <i>Directed Energy Prototyping</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	4.202	1.246	3.712	0.000	3.712	4.216	4.302	4.457	4.545	0.000	26.680
640200: <i>DE Prototyping</i>	-	4.202	1.246	3.712	0.000	3.712	4.216	4.302	4.457	4.545	0.000	26.680
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

The Air Force Life Cycle Management Center, Architecture and Integration Directorate Directed Energy Prototyping Program develops, acquires and evaluates prototype high energy laser, high power microwave and/or other electromagnetic radiation or particle beam technologies as a future integral component of Air Force missions. The Directed Energy Prototyping Program bridges the gap between lab based technology demonstration under a controlled environment, and demonstration of a system in realistic environments with the intent of establishing successful acquisition, and operation or operational capability implementation.

This prototyping effort enables the ability to integrate the directed energy prototype systems with other operational systems required for the mission (e.g. radar, command and control, etc.), conduct test and evaluation activities, and mature emerging directed energy technology systems based on prototyping activities to enable rapid fielding to the warfighter. The Directed Energy Prototyping Program allows acquisition program managers (capability developers) and warfighters (capability recipients and end users) to prototype, integrate, evaluate, and demonstrate candidate weapon technologies and assess them in an operational environment with the intent of iteratively maturing directed energy technologies to a production representative design.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In Prior Year 2023, 1.046M was expended for civilian pay expenses in this program element, and in CY 2024 1.023M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 Program Element (Number/Name)</b> PE 0604032F I Directed Energy Prototyping
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	4.269	1.246	4.106	0.000	4.106
Current President's Budget	4.202	1.246	3.712	0.000	3.712
Total Adjustments	-0.067	0.000	-0.394	0.000	-0.394
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.067	0.000			
• Other Adjustments	0.000	0.000	-0.394	0.000	-0.394

**Change Summary Explanation**

FY 2025 funding increased compared to FY 2024 by 2.466 million due to Air Force funding re-prioritization. The FY 2025 funding request was reduced by 0.400 million to account for the availability of prior year execution balances.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> Directed Energy Capabilities	4.202	1.246	3.712
<b>Description:</b> Prototypes and evaluates Directed energy weapon technologies for Airbase Defense against unmanned aerial vehicles and cruise missiles, Precision Strike against electronic and conventional targets and Aircraft Defense against incoming threats.			
<b>FY 2024 Plans:</b> Continue field effectiveness testing of Directed Energy Counter Unmanned Aerial System effectors to OCONUS locations. Continue to work with Air Force futures, the Joint counter small Unmanned Aerial System Office, and others to refine requirements and architecture for defense of critical infrastructure and base defense. Continue coordinating with major/combatant commands to incorporate new directed energy prototypes into integration and testing. Continue test data and initiate fielded data analysis to determine reliability, manufacturability, maintainability and mission effectiveness. In conjunction with major/combatant commands, determine if these systems are ready for another round of improvement for transition to a program of record.			
<b>FY 2025 Plans:</b> - Initiate modification of laser system to be fully transportable. - Initiate evaluation of transportable laser technology in coordination with transition partners for potential transition opportunities - Continue field effectiveness testing of Directed Energy Counter Unmanned Aerial System effectors to OCONUS locations.			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604032F / <i>Directed Energy Prototyping</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- Continue to work with Air Force futures, the Joint counter small Unmanned Aerial System Office, and others to refine requirements and architecture for defense of critical infrastructure and base defense.</li> <li>- Continue increased focus on coordinating with major/combatant commands to incorporate new directed energy prototypes into integration and testing.</li> <li>- Continue increased focus on testing, data collection, and fielded data analysis to determine reliability, manufacturability, maintainability and mission effectiveness. In conjunction with major/combatant commands, determine if these systems are ready for another round of improvement for transition to a program of record.</li> </ul> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 increased compared to FY 2024 by \$2.466 million due to Air Force funding re-prioritization.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	4.202	1.246	3.712

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**  
Not Applicable

**E. Acquisition Strategy**  
During FY 2020, the Air Force Life Cycle Management Center, Architecture and Integration Directorate, Wright-Patterson Air Force Base, Ohio conducted a source selection evaluating eight (8) ground-based Counter unmanned Aerial Systems for prototype development. In Fourth Quarter FY 2020, three (3) vendors were selected for award using Other Transaction Authority based on a best value determination with Technical being the most important factor. During FY 2021, these three (3) prototypes were selected based on operational capability/suitability assessment supporting the Airbase defense mission. In FY 2022, a high energy laser system was transferred into the program from AFRL/RS 0604858F. In FY 2023, a congressional interest item added an upgraded unit that will be delivered in early FY 2024. Acceptance testing and characterization test through early FY 2024. Prototypes will undergo field assessment in FY 2023 and FY 2024 at OCONUS locations. In FY 2023 with potential updates in FY 2024, an acquisition readiness assessment will be made while documenting design, sustainment, and initial operational concepts of operation information to inform a production representative unit in FY 2025. In FY25, a prototype mobile counter-UAS system will be demonstrated. This will lead to a decision for a program of record in FY 2027. The program will also seek to leverage industry and sister service prototypes for field evaluation and acquisition readiness assessments in the best interest of the Air Force.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604032F / Directed Energy Prototyping	<b>Project (Number/Name)</b> 640200 / DE Prototyping
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Directed Energy C-UAS Prototype Technical Maturation and Improvements	Various	Various : Various	-	2.863	Mar 2024	0.000	Jan 2024	2.407		-		2.407	Continuing	Continuing	-
<b>Subtotal</b>			-	2.863		0.000		2.407		-		2.407	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Directed Energy Prototyping Program Administration	Various	AFLCMC : Various	-	0.263	Oct 2022	0.150	Oct 2023	0.205		-		0.205	Continuing	Continuing	-
Direct Cite Authority	TBD	AFLCMC : Various	-	1.076	Oct 2022	1.096	Oct 2023	1.100		-		1.100	Continuing	Continuing	-
<b>Subtotal</b>			-	1.339		1.246		1.305		-		1.305	Continuing	Continuing	N/A

<b>Project Cost Totals</b>	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
	-	4.202	1.246	3.712	-	3.712	Continuing	Continuing	N/A

**Remarks**  
 FY 2022 - FY 2028 will concentrate on prototyping and maturing high energy laser and high power microwave systems for base area defense in preparation for transition to program of record. The program makes use of Other Transactional Authorities (OTA). Continued support will be provided by the Directed Energy Transition Management Office, Kirtland Air Force Base, New Mexico.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604032F / <i>Directed Energy Prototyping</i>	<b>Project (Number/Name)</b> 640200 / <i>DE Prototyping</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Field Suitability Assessment</b>	
Government assessment of suitability and effectiveness for field operations	
<b>Directed Energy Counter-Unmanned System (C-UAS) technical maturation</b>	
Incremental improvements to Directed Energy counter-UAS Prototype systems to provide increased Airbase defense counter-UAS capability to warfighter	
<b>Directed Energy Base Defense technical maturation</b>	
Production Representative prototyping of mobile counter-UAS system	
<b>Field Assessments</b>	
Government assessment of suitability and effectiveness for acquired counter-UAS prototype systems	
<b>Directed Energy Acquisition Readiness Assessment</b>	
Analyze field data to determine reliability, maintainability and suitability for transition to program of record	

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604032F / <i>Directed Energy Prototyping</i>	<b>Project (Number/Name)</b> 640200 / <i>DE Prototyping</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Field Suitability Assessment</i></b>				
Government assessment of suitability and effectiveness for field operations	1	2023	2	2024
<b><i>Directed Energy Counter-Unmanned System (C-UAS) technical maturation</i></b>				
Incremental improvements to Directed Energy counter-UAS Prototype systems to provide increased Airbase defense counter-UAS capability to warfighter	1	2023	1	2024
<b><i>Directed Energy Base Defense technical maturation</i></b>				
Production Representative prototyping of mobile counter-UAS system	3	2025	1	2028
<b><i>Field Assessments</i></b>				
Government assessment of suitability and effectiveness for acquired counter-UAS prototype systems	3	2023	4	2027
<b><i>Directed Energy Acquisition Readiness Assessment</i></b>				
Analyze field data to determine reliability, maintainability and suitability for transition to program of record	1	2023	4	2027

**Note**

FY 2022 - FY 2028 will concentrate on maturing high energy laser and high power microwave systems for base area defense in preparation for transition of prototype weapon systems to program(s) of record. The program makes use of Other Transactional Authorities (OTA). Continued support will be provided by the Directed Energy Transition Management Office, Kirtland Air Force Base, New Mexico.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604033F / <i>Hypersonics Prototyping</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	112.015	150.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	262.355
643882: <i>Air-Launched Rapid Response Weapon (ARRW)</i>	-	112.015	150.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	262.355

**Note**

In FY 2024, HACM funding under PE0604033F, Project 643883 Hypersonic Attack Cruise Missile, efforts were transferred to PE 0604183F, Project 644183 Hypersonic Attack Cruise Missile in order to continue HACM development.

In FY 2024, project 643882 was completed.

**A. Mission Description and Budget Item Justification**

The Hypersonics Prototyping program enables integration and demonstration of emerging hypersonic technologies in an operational or operational-like environment to capitalize on successful laboratory hypersonic research and development efforts with high warfighter priority. Integration and demonstration of hypersonic prototypes also allows leadership to make informed strategy and resource decisions for future programs based on the results of such hypersonic prototype demonstrations.

Hypersonic Prototyping enables a key linkage between research and development in the lab and fielding advanced technologies to the warfighter. Under this program, Air-Launched Rapid Response Weapon (ARRW) will accelerate the technology transfer of hypersonic technologies to enable a responsive, long range strike capability.

Throughout this program element will be future hypersonic development, which will incubate and mature new technologies, processes, and resources for the development and demonstration of hypersonic technology including, but not limited to, infrastructure advancements, digital engineering, open systems architecture, modeling and simulation, analytics, and high performance computing environments.

Investing in hypersonics development enables the collection of valuable data, builds capacity and capability, allows hypersonic programs to leverage and build upon each other, and projects the overall technology forward.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In PY \$4.158 million was expended for civilian pay expenses in this program element, in CY \$4.967 million is forecasted for civilian pay expenses.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604033F / <i>Hypersonics Prototyping</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	114.981	150.340	0.000	0.000	0.000
Current President's Budget	112.015	150.340	0.000	0.000	0.000
Total Adjustments	-2.966	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-2.966	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

**Change Summary Explanation**

In FY 2023, funding decreased \$2.966M for SBIR in PE 0604033, Project 643882 Air-Launched Rapid Response Weapon

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604033F / <i>Hypersonics Prototyping</i>	<b>Project (Number/Name)</b> 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
643882: <i>Air-Launched Rapid Response Weapon (ARRW)</i>	-	112.015	150.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	262.355
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

In FY2024, project 643882 was completed.

**A. Mission Description and Budget Item Justification**

The Air-Launched Rapid Response Weapon (ARRW) project integrates Air Force and DARPA enabled system technologies into a prototype that will demonstrate the viability of this concept to be fielded as a long range prompt strike capability. ARRW will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning ARRW acquisition and production.

Future hypersonics development will incubate and mature new technology, processes, and resources for the development and demonstration of hypersonic technology including, but not limited to, infrastructure advancements, digital engineering, open systems architecture, modeling and simulation, analytics, and high performance computing environments.

Investing in hypersonics development will enable the collection of valuable data, building of capacity and capability, allowing hypersonic programs to leverage and build upon each other, and project the overall technology forward.

In FY 2022, PE 0101101F, Project ARRW00/AGM-183A Air-Launched Rapid Response Weapon, efforts were transferred to PE 0604033F, Hypersonics Prototyping, Project 643882, Air-Launched Rapid Response Weapon, in order to mitigate the testing shortfall.

The total cost of the ARRW Rapid Prototyping Middle Tier of Acquisition effort is \$1,730.073 million, including RDT&E and procurement of prototype units. ARRW is fully funded across the Future Years Defense Program.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In PY \$4.158 million was expended for civilian pay expenses in this program element, CY \$4.967 million is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b>Title:</b> Air Launched Rapid Response Weapon (ARRW)	112.015	150.340	-

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604033F / <i>Hypersonics Prototyping</i>	<b>Project (Number/Name)</b> 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Integrates Air Force and DARPA enabled system technologies into a prototype that will demonstrate the viability of this concept to be fielded as a long range prompt strike capability. ARRW will design, develop, manufacture, and test, a number of prototype vehicles to inform decisions concerning ARRW acquisition, production, and leave behind capability.</p> <p><b>FY 2024 Plans:</b> Complete the rapid prototyping program and flight testing. The testing will enable ARRW to collect valuable data, build capacity and capability, allow hypersonics programs to leverage and build upon each other, and project the overall technology forward. Additionally, ARRW will complete contract closeout, finalize documentation and analysis, and activities to support the leave behind capability.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to completion of the program.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	112.015	150.340	-

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Acquisition Decision Memorandum (signed 3 May 2018) designated Air-Launched Rapid Response Weapon (ARRW) as Section 804 Rapid Prototyping Program.

The Air Force awarded in August 2018 an undefinitized contract in order to complete a critical design review and procure all long lead parts and materials. The ARRW Program definitized this contract December 2019 to include the entire RDT&E effort (through the end of flight test). The cost type contract includes schedule incentives. The government agency responsible for managing this program is the Air Force Life Cycle Management Center, Armament Directorate, Eglin AFB, FL.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604033F / <i>Hypersonics Prototyping</i>	<b>Project (Number/Name)</b> 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ARRW - Contract	C/CPFF	LMCO: Various : Various	-	47.686	Dec 2022	91.318	Dec 2023	-		-		-	0.000	139.004	-
ARRW - Mission Planning	C/CPFF	Boeing: Tapestry : TBD	-	0.895	Dec 2022	0.800	Dec 2023	-		-		-	0.000	1.695	-
ARRW - Aircraft Integration	Various	Various : Various	-	2.000	Dec 2022	-		-		-		-	0.000	2.000	-
<b>Subtotal</b>			-	50.581		92.118		-		-		-	0.000	142.699	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority Civilian Pay	Allot	Not specified. : TBD	-	9.161	Oct 2022	4.967	Oct 2023	-		-		-	0.000	14.128	-
<b>Subtotal</b>			-	9.161		4.967		-		-		-	0.000	14.128	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ARRW - Government Test	Various	Various : TBD	-	43.656	Dec 2022	45.340	Dec 2023	-		-		-	0.000	88.996	-
<b>Subtotal</b>			-	43.656		45.340		-		-		-	0.000	88.996	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ARRW - Program Management Administration	Various	Multiple : TBD	-	8.617	Oct 2022	7.915	Oct 2023	-		-		-	0.000	16.532	-
<b>Subtotal</b>			-	8.617		7.915		-		-		-	0.000	16.532	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2025 Air Force</b>											<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604033F / <i>Hypersonics Prototyping</i>					<b>Project (Number/Name)</b> 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i>			

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
Includes A&AS support requirements plus TDY, and office supplies.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	112.015	150.340	-	-	-	0.000	262.355	N/A

**Remarks**  
Additional details on Hypersonics prototyping concepts can be provided in the appropriate forum.



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604033F / <i>Hypersonics Prototyping</i>	<b>Project (Number/Name)</b> 643882 / <i>Air-Launched Rapid Response Weapon (ARRW)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Air Launched Rapid Response Weapon (ARRW)</i></b>				
ARRW- Contract	1	2023	3	2024
Flight Tests	1	2023	2	2024

**Note**  
Further schedule details can be provided in the appropriate forum.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604183F / <i>Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	387.325	381.528	516.971	0.000	516.971	448.551	274.099	200.832	202.589	0.000	2,411.895
644183: <i>Hypersonic Attack Cruise Missile (HACM)</i>	-	387.325	381.528	516.971	0.000	516.971	448.551	274.099	200.832	202.589	0.000	2,411.895
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

Hypersonic Attack Cruise Missile (HACM) is a hypersonic air-launched weapon that will enable the U.S. to hold fixed, high value, time-sensitive targets at risk in contested environments from standoff distances. The Air Force is developing an air-launched boost-glide hypersonic weapon - the AGM-183A Air-launched Rapid Response Weapon (ARRW) - as well as the air-breathing HACM capability. ARRW and HACM are complementary. HACM offers a smaller form factor than ARRW for fighter integration and expanded bomber capacity, and thereby imposes cost on potential adversaries with additional complexity with vastly different trajectories than boost glide.

The program leverages Southern Cross Integrated Flight Research Experiment (SCIFiRE) investment, a bi-lateral U.S./Australian air-breathing hypersonic cruise missile prototyping effort which is a prelude to HACM. The HACM program will integrate advanced technologies and mature designs into an All-Up Round (AUR) prototype that will demonstrate a field-able long range prompt strike capability. HACM will design, develop, manufacture, and test (testing will occur in both the U.S. and Australia) a number of prototype vehicles to inform future HACM acquisition decisions. HACM will mature hypersonic technologies and processes to include: subsystem integration, infrastructure and testing advancements, Digital Engineering (DE), Weapons Open Systems Architecture (WOSA), Modeling and Simulation (M&S), analytics, and high performance computing environments.

Implements Digital Acquisition tenants of Open, Agile, and Digital; builds and establishes industrial base innovation around the program's enterprise for modularity and adaptability for the life cycle of the weapons system. Leverages common component development, in collaboration with other weapon systems, to reduce redundant costs between systems with similar subsystems requirements. Invests in analytical, data management, digital environments, networks, facilities, and security infrastructure upgrades supporting development of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions. Expands program office staff, facilities, and security infrastructure to support the required classification levels for this program's activities. Engages with DoD, DAF, and industry stakeholders to refine threat analysis, refine inventory requirements, and plan upgrade requirements. Capitalizes on and incorporates successful laboratory research and development efforts applicable to this program's capability.

The total cost of the Hypersonic Attack Cruise Missile Middle Tier of Acquisition effort is 1,868.6 million, including RDT&E and procurement of prototype units. The HACM RP program is fully funded across the Future Years Defense Program..

This Program Element is not a new start. HACM was previously listed under both PE 0604033F/project 643883 and PE 0604183F/project 644183 and was consolidated to this PE (0604183F/project 644183) during the FY 2023 Omnibus Appropriation Act.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604183F / <i>Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)</i>
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This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605828F. In PY 6.520M was expended for civilian pay expenses in this program element, and in CY 12.135M is forecasted for civilian pay expenses in this program element.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver HACM for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605828F.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	423.359	381.528	557.138	0.000	557.138
Current President's Budget	387.325	381.528	516.971	0.000	516.971
Total Adjustments	-36.034	0.000	-40.167	0.000	-40.167
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-23.321	0.000			
• SBIR/STTR Transfer	-12.713	0.000			
• Other Adjustments	0.000	0.000	-40.167	0.000	-40.167

**Change Summary Explanation**

This Program Element is not a new start. HACM was previously listed under both PE 0604033F/project 643883 and PE 0604183F/project 644183 and was consolidated to this PE (0604183F/project 644183) during the FY 2023 Omnibus appropriation Act.

FY 2023 funding decreased by -21.929M as result of funds re-phased under the Omnibus Reprogramming Request. -1.392M is a result of a Below Threshold Reprogramming action.

FY 2025 funding decreased by -40.167 million due to +21.929M re-phase from FY 2023, and -62.096M to align with other AF priorities. The FY 2025 funding request was reduced by -20.904 million to account for the availability of prior year execution balances.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> HACM Development	292.838	303.923	445.808

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604183F / <i>Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> A single performer purchasing hardware and completing a critical design, and initial long-lead flight test asset hardware, to include aircraft integration assets.</p> <p><b>FY 2024 Plans:</b> Effort will utilize a single industry performer to build upon preliminary design activities and mature HACM to critical design. The effort will continue model-based engineering activities and the DE ecosystem to complete critical design analysis, design verification testing, systems integration, lab development, initial qualification testing, initial flight test hardware orders, aircraft integration assets, and WOSA compliance evaluation.</p> <p><b>FY 2025 Plans:</b> This effort will continue model-based engineering activities in the DE ecosystem to complete the HACM critical design. Effort will also include additional design verification testing, systems integration, subsystem qualification, and integration on the F-15E and F/A-18F platforms.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding increased compared to FY 2024 by \$141.885M due to phasing of prime contract requirements leading up to a Critical Design Review, in addition to Block 2 efforts (Previously named Risk Reduction.) Further details of this activity are classified.</p>				
<p><b>Title:</b> Integration, Qualification, and Test</p> <p><b>Description:</b> This effort includes the government costs associated to assembly, integration and test of subsystems for qualification testing as well as prototype systems for system qualification, ground test and flight testing. The effort includes the planning, execution and analysis to complete the defined HACM test strategy.</p> <p><b>FY 2024 Plans:</b> Effort continues the assembly, integration and test of subsystems for qualification testing as well as prototype systems for system qualification, ground test and flight testing.</p> <p><b>FY 2025 Plans:</b> Effort will conduct additional subsystem qualification testing and complete integration, assembly, test, and checkout of the All-Up-Round system. Effort will also include initial free-flight testing of HACM prototypes.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding decreased compared to FY 2024 by \$15.952M due to phasing of testing/qualification requirements as system processes through the critical design phase.</p>		27.308	52.653	36.701
<p><b>Title:</b> Program Support</p>		67.179	24.952	34.462

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604183F / <i>Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Program Support Cost (PSC) includes contractor services: Engineering, Professional, and Administrative Support Services (EPASS) and or/other contract support. May also include mission planning, travel, Government Purchase Card (GPC), Direct Cite Authority (DCA) civilian pay, costs associated to meet future security upgrades/requirements, and/or other government costs.</p> <p><b>FY 2024 Plans:</b> Efforts include DE, WOSA development/support, DE Infrastructure, mission planning, tech orders and DCA civilian pay.</p> <p><b>FY 2025 Plans:</b> Efforts include DE, WOSA development/support, DE Infrastructure, mission planning, tech orders, travel, and DCA civilian pay.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding increased compared to FY 2024 by \$9.510 due to mission planning activities and civilian pay expenses.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	387.325	381.528	516.971

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• MPAF 02 HACM00: <i>Hypersonic Attack Cruise Missile</i>	-	-	-	-	-	-	246.092	251.376	256.376	0.000	753.844

**Remarks**  
\* Production funding will be used to buy post-MTA assets if requirement exists and acquisition transition strategy is approved.

**E. Acquisition Strategy**  
The program leverages the SCIFiRE investment, a bi-lateral U.S. / Australia effort which matures air-breathing cruise missile technology. Through SCIFiRE, HACM leverages efforts from the DARPA Air Force Hypersonic Air-breathing Weapon Concept (HAWC). The HACM prototype will demonstrate a multi-mission weapon concept to be fielded as a long range prompt strike capability. Includes scope to develop/test/demonstrate prototype weapon through Digital Model-Based System Engineering (MBSE) process, implementing WOSA and Agile Software Development. The program will prioritize integration on the F-15E platform to enable quick entry into flight test.

Acquisition Strategy approved Dec 2021 which designated HACM as a Section 804 Middle Tier of Acquisition (MTA) Pathway (Rapid Prototyping). In Feb 2022 the OSD MTA Advisory Board concurred with HACM designation as a Rapid Prototyping MTA Pathway. The Air Force awarded a Cost Plus Fixed Fee (CPFF) contract in Sep 2022 to Raytheon Technologies to procure all long lead parts, materials and labor for HACM Critical Design Review, development, integration, qualification, and flight testing of AURs.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0604183F / <i>Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)</i>

In addition to the baseline rapid prototyping effort, and in accordance with an FY23 Program Decision Memorandum (PDM), the program will advance subsystem technology to enhance system capability and conduct testing to demonstrate the additional capability. Block 2 contract awarded Dec 2023. Further details of this activity are classified.

To prepare for a future production program that meets warfighter desired quantities in relatively short timelines, the program will begin making targeted investments in the hypersonic cruise missile industrial base. These investments will ensure the industrial base can handle a ramp to full rate production that supports warfighter needs. Investments must begin in advance of a future production program to prevent significant delays in delivering assets to the field.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604183F / Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)	<b>Project (Number/Name)</b> 644183 / Hypersonic Attack Cruise Missile (HACM)
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HACM Prime Contractor Support, Analysis, and Development	C/CPFF	Raytheon: Tucson, AZ : TBD	-	292.838	Mar 2023	303.923	Dec 2023	352.020	Dec 2024	-		352.020	Continuing	Continuing	-
Block 2 Efforts	SS/CPFF	Raytheon: Tucson, AZ : TBD	-	-		-		93.788	Jul 2025	-		93.788	Continuing	Continuing	-
<b>Subtotal</b>			-	292.838		303.923		445.808		-		445.808	Continuing	Continuing	N/A

**Remarks**  
 \*Block 2 (Previously called Risk Reduction) contract awarded Dec 2023.  
 \*\*FY 2023 and FY 2024 Block 2 amounts were included in "HACM Prime Contractor Support, Analysis, Technical Risk Reduction, and Development" line.

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development & Prototyping	C/Various	Multiple: TBD: Various : TBD	-	40.318	Mar 2023	9.210	Dec 2023	15.125	Dec 2024	-		15.125	Continuing	Continuing	-
Direct Cite Authority Civilian Pay	Allot	Not specified: TBD : TBD	-	6.520	Oct 2022	8.381	Oct 2023	12.423	Oct 2024	-		12.423	Continuing	Continuing	-
<b>Subtotal</b>			-	46.838		17.591		27.548		-		27.548	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test & Evaluation	C/TBD	Multiple: TBD: Various : TBD	-	27.308	Mar 2023	52.653	Dec 2023	36.701	Dec 2024	-		36.701	Continuing	Continuing	-
<b>Subtotal</b>			-	27.308		52.653		36.701		-		36.701	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604183F / <i>Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)</i>	<b>Project (Number/Name)</b> 644183 / <i>Hypersonic Attack Cruise Missile (HACM)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management Services	C/TBD	Multiple: TBD: Various : TBD	-	20.341	Oct 2022	7.361	Oct 2023	6.914	Oct 2024	-		6.914	Continuing	Continuing	-
<b>Subtotal</b>			-	20.341		7.361		6.914		-		6.914	Continuing	Continuing	N/A

**Remarks**  
Includes A&AS support, Travel, and GPC requirements.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	387.325	381.528	516.971	-	516.971	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604183F / <i>Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)</i>	<b>Project (Number/Name)</b> 644183 / <i>Hypersonic Attack Cruise Missile (HACM)</i>

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Hypersonic Attack Cruise Missile (HACM)</i></b>																												
Critical Design																												
HACM Development																												
Integration, Qualification, and Test																												
Block 2 Development																												
AUR Free-Flight Testing																												
Follow-On Development																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604183F / <i>Hypersonics Prototyping - Hypersonic Attack Cruise Missile (HACM)</i>	<b>Project (Number/Name)</b> 644183 / <i>Hypersonic Attack Cruise Missile (HACM)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Hypersonic Attack Cruise Missile (HACM)</i></b>				
Critical Design	1	2023	2	2025
HACM Development	1	2023	2	2027
Integration, Qualification, and Test	1	2023	2	2027
Block 2 Development	1	2024	1	2029
AUR Free-Flight Testing	1	2025	2	2027
Follow-On Development	1	2026	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	28.902	18.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.943
641030: <i>GPS Receiver Development</i>	-	28.902	18.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.943

**A. Mission Description and Budget Item Justification**

PE 0604201F, Project 641030 covers the research, development, qualification, and testing of Enhanced Anti-Jam (EAJ) Military Code (M-Code) Global Positioning System (GPS) receivers for Air Force and joint weapon systems. This includes updates to weapon mission planning software to support new M-Code and EAJ receiver development. These acquisitions will enable the Air Force to increase its operational Positioning, Navigation, and Timing (PNT) resiliency while satisfying the DoD and civil mandates. Fielding of EAJ M-Code weapons requires research, development, qualification and testing of M-Code receivers across the Air Force Program Executive Officer (AFPEO) Weapons portfolio. Funds may be used to address emerging and short notice Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.00M was expended for civilian pay expenses in this program element, and in FY24 \$0.00M is planned/forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	12.010	18.041	0.000	0.000	0.000
Current President's Budget	28.902	18.041	0.000	0.000	0.000
Total Adjustments	16.892	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	16.456	0.000			
• SBIR/STTR Transfer	-0.436	0.000			
• Other Adjustments	0.872	0.000	0.000	0.000	0.000

**Change Summary Explanation**

FY23 adjustments include 12.013M on FY23-29PA, Below threshold reprogrammings and Small Business Innovative Research (SBIR)

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604201F / PNT Resiliency, Mods, and Improvements				<b>Project (Number/Name)</b> 641030 / GPS Receiver Development			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
641030: GPS Receiver Development	-	28.902	18.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	46.943
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This munitions receiver development project includes development of a GPS M-code receiver with EAJ and analysis efforts. M-code receivers with EAJ provide advanced Positioning, Navigation, and Timing (PNT) capabilities required for weapons to operate in adversarial Anti-Access/Area Denial (A2/AD) environments. M-Code receivers with EAJ also provide increased accuracy, better signal acquisition, and advanced security.

M-code receivers with EAJ capability assures continued weapon system precision and lethality.

Fielding EAJ M-Code weapons requires research, development, qualification, testing, and mission planning of M-Code receivers across the weapons portfolio. This will include all systems, subsystems, software, fuzing, and support activities associated with the development and implementation of M-Code receivers.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> M-Code EAJ	28.902	18.041	0.000
<b>Description:</b> M-Code/EAJ receivers provide an enhanced anti-jam capability. M-Code/EAJ receivers provide the capability to operate in increasing adversarial A2/AD jamming environment. M-Code/EAJ receivers also provide increased accuracy, better signal acquisition, and advanced security.			
<b>FY 2024 Plans:</b> Continuation of design, development, ground qualification, and production readiness of a High Anti-Jam Miniature M-Code Enhanced Receiver (HAMMER). Complete preliminary integration, prepare for production cut-in, and prepare for fielding in order to achieve the objectives (M-Code Receiver, M-Code Integration, Enhanced Anti-Jam, Exportability). Complete security certification of the Common Architecture for Assured Position, Navigation, and Timing (PNT)(CAAP).			
<b>FY 2025 Plans:</b> N/A			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decrease reflects completion of CAAP ASIC, CAAP security certification, M-Code Receiver security approval and receiver component level testing required for integration into the AUR, and purchase of M-Code test articles in FY23.			
<b>Accomplishments/Planned Programs Subtotals</b>	28.902	18.041	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / PNT Resiliency, Mods, and Improvements	<b>Project (Number/Name)</b> 641030 / GPS Receiver Development

**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2023	FY 2024	FY 2025	FY 2025	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	Cost To	Total Cost
			Base	OCO	Total					Complete	
• RDTE 07 0207327F: <i>Small Diameter Bomb (SDB)</i>	17.327	13.520	7.665	-	7.665	-	-	-	-	0.000	38.512
• RDTE 07 0207325F: <i>Joint Air-to-Surface Standoff Missile (JASSM)</i>	23.507	1.076	2.812	-	2.812	-	-	-	-	0.000	27.395

**Remarks**

Other Program Funds reference what is allocated towards internal program M-Code requirements.

**D. Acquisition Strategy**

M-Code/EAJ effort uses a Family of Systems (FoS) approach where the weapons prime contractors develop receivers capable of operating in any of their Air Force weapons. The receivers are based on a common, internally-developed Interface Requirements Specification (IRS), Technology Requirement Document (TRD), and threat scenarios. This approach uses a combination of contract types based on acquisition phase (Technology Maturation & Risk Reduction (TMRR), Development, Production) and risk. The weapons system program offices share a common development Program Element (PE) to allow flexibility in funding and planning, switching to individual PEs for receiver integration, operational testing, and production. The M-Code/EAJ weapons receiver development effort leverages technology currently under development by the Military GPS User Equipment (MGUE) program and will provide the warfighter with unmatched capability to operate in future A2/AD environments.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / PNT Resiliency, Mods, and Improvements	<b>Project (Number/Name)</b> 641030 / GPS Receiver Development
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Common Weapons M-Code Receiver Development (SDB II)	Various	Raytheon : Tucson, AZ	-	25.862	Jan 2023	14.901	Nov 2023	-		-		-	Continuing	Continuing	-
Common Weapons M-Code Receiver Development (CAAP ASIC)	MIPR	DMEA/Global Foundries : Hopewell Junction, NY	-	-		-		-		-		-	0.000	0.000	-
Common Weapons M-Code Receiver Development (JASSM C+ + Phase II)	Various	Lockheed Martin : Orlando, FL	-	-		-		-		-		-	0.000	0.000	-
Common Weapons M-Code Receiver Development (JASSM GPS Receiver)	Various	Consortium Management Gp : Washington, DC	-	3.040	Feb 2023	3.140	Feb 2024	-		-		-	Continuing	Continuing	-
Common Weapons M-Code Receiver Development (JASSM GPS - Receiver)	Various	SERCO Inc : Herndon, VA	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	28.902		18.041		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		-	28.902	18.041	-	-	-	Continuing	Continuing	N/A

**Remarks**  
Common Weapons M-Code Receiver Development (SDB II) funding increased from FY23 to FY24 due to HAMMER and CAAP ASIC development and integration into SDB II and TACTICAL Tomahawk.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>	<b>Project (Number/Name)</b> 641030 / <i>GPS Receiver Development</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>M-Code/EAJ Receivers</i></b>	
M-Code/EAJ Research & Development	
M-Code/EAJ Test and Qualification	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>	<b>Project (Number/Name)</b> 641030 / <i>GPS Receiver Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>M-Code/EAJ Receivers</i></b>				
M-Code/EAJ Research & Development	1	2023	3	2025
M-Code/EAJ Test and Qualification	1	2023	3	2025

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	12.311	27.650	24.204	0.000	24.204	49.765	51.086	22.653	11.522	Continuing	Continuing
642001: <i>Next Gen Sensors Tech Maturation/Risk Reduction</i>	-	0.000	12.461	8.742	0.000	8.742	34.024	35.133	6.344	0.000	Continuing	Continuing
644818: <i>Imaging and Targeting Support</i>	-	12.311	15.189	15.462	0.000	15.462	15.741	15.953	16.309	11.522	Continuing	Continuing

**Note**

In FY2024 PE 0305206F Project 672001 efforts were transferred to PE 0604257F Project 642001 in order to continue development, tech maturation, and risk reduction for the Next Generation Sensor portfolio.

**A. Mission Description and Budget Item Justification**

The Advanced Technology and Sensors (ATS) program coordinates the development of platform-agile advanced technologies (sensors, low-cost, low-SWAP attritable ISR sensors, data links, targeting support, and quick reaction capabilities) in support of High-Altitude Long Endurance (HALE) platforms, manned and unmanned airborne reconnaissance platforms, Autonomous Collaborative Platforms, and Collaborative Combat Aircraft (CCA). Its objectives are to develop, demonstrate, and rapidly transition advanced, interoperable, multi-platform solutions to reduce the find, fix, target, and track kill chain timeline. This program coordinates the development of common collection, processing, and dissemination solutions for near-real time intelligence, surveillance, and reconnaissance. The ATS program also increases interoperability by developing common standards and interfaces.

Imaging & Targeting Support (I&TS) funds in this program are distributed in priority order for the goal of building a comprehensive Geospatial Intelligence (GEOINT) capability for the USAF. On an annual basis, developmental technologies are reviewed against warfighter capabilities and requirements based on strategic roadmaps and on the results of the Airborne Sensors for ISR Analysis of Alternatives, as prefaced in the Challenging Targets Initial Capabilities Document. Efforts advancing the technological maturity of promising sensors and processing capabilities are reviewed and prioritized into a recommended list for senior executive direction to implement in the coming year. The program office has the ability to rapidly initiate an I&TS project in order to expedite development and acquisition of urgently needed capabilities for the warfighter.

Next Generation Sensors Risk Reduction (NGS-RR) is a platform-agile suite of sensor technologies defined for the best flexibility and capability for an ever-changing scale of ISR missions. NGS-RR will further technology maturation and risk reduction of selected technologies initiated under I&TS culminating in an operational prototype demonstration. Execution of the NGS-RR activities is founded upon three pillars: Open Standards, Artificial Intelligence (AI)/Machine Learning (ML) algorithms, and Advanced Platform-Agile Sensors. The power behind the NGS-RR program is an open architectural system design that enables rapid third-party software and line replaceable unit insertion/replacement allowing for DevSecOps execution, onboard multi-modal and multi-INT processing real-time, sensor cross-cueing, and AI/ML application. The AI/ML algorithms will be used to enable assisted target detection and identification. NGS-RR will anticipate and more quickly counter adversaries' future improvements in their abilities to hide from and defeat ISR sensors. NGS-RR efforts include but are not limited to: Advanced Platform-Agile Sensors, Assisted Target Recognition for ISR (ATRI), and Digital Engineering (DE), to include Model-Based Systems Engineering (MBSE).

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0604257F / <i>Advanced Technology and Sensors</i>

The open standards pillar of next generation capabilities is supported through Sensors Open Systems Architecture (SOSA) which coordinates advanced technologies and open architecture development for multi-INT sensor modalities. Consistent with the NDS, algorithms are multi-INT sensor agile that are submitted for formal adoption by the DOD-Intelligence Community (IC), Joint Enterprise Standards Committee (JESC), GEOINT and SIGINT standards groups. The platform agile sensors pillar of next-generation capabilities will be supported by developing scalable sensors using both off-the-shelf and emerging sensors suites from the labs, industry, and other Government agencies.

ATS program funds are distributed to projects based on the development priorities established by the USAF GEOINT Capabilities Working Group (GCWG), which is chartered to guide the ATS capability investment. When required, the USAF may move funds between ATS projects, developing the highest priority projects in response to urgent (e.g., JUON) and emerging (e.g., JEON) warfighter needs.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.0M was expended for civilian pay expenses in this program element, and in FY24 \$0.0M is forecasted for civilian pay expenses in this program element.”

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b><u>FY 2023</u></b>	<b><u>FY 2024</u></b>	<b><u>FY 2025 Base</u></b>	<b><u>FY 2025 OCO</u></b>	<b><u>FY 2025 Total</u></b>
Previous President's Budget	12.311	27.650	24.161	0.000	24.161
Current President's Budget	12.311	27.650	24.204	0.000	24.204
Total Adjustments	0.000	0.000	0.043	0.000	0.043
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.043	0.000	0.043

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>				<b>Project (Number/Name)</b> 642001 / <i>Next Gen Sensors Tech Maturation/Risk Reduction</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
642001: <i>Next Gen Sensors Tech Maturation/Risk Reduction</i>	-	0.000	12.461	8.742	0.000	8.742	34.024	35.133	6.344	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Next Generation Sensors Risk Reduction (NGS-RR) program seeks to change the paradigm of Intelligence, Surveillance, and Reconnaissance (ISR) sensor acquisitions to deliver mission critical technology more quickly and cost effectively. NGS-RR is a platform-agile suite of sensor technologies defined for the best flexibility and capability for an everchanging scale of ISR missions. The power behind the NGS-RR program is an opportunistic modular approach using open architectural system designs that enables: individual sensor upgrades, enhancements, mission-specific mode(s), algorithm applications, establishing a path to on-board multimodal and multi-INT processing, sensor cross-cueing, and artificial intelligence applications. NGS-RR efforts include but are not limited to: Sense and Sense-making Demonstrator (MEDUSA), Advanced Platform-Agile Sensors, AI-based Utility for Robust Object Recognition Architecture (AURORA), and Digital Engineering (DE), to include Model Based Systems Engineering (MBSE). The focus is on maturing platform agile, low-SWAP/low-cost attritable ISR sensors and algorithms developed under Imaging and Targeting Support culminating in a fieldable prototype demonstration through MEDUSA with a modular payload or using an AgilePod in support of integration with High Altitude Long Endurance (HALE) platforms, manned and unmanned airborne reconnaissance platforms, Autonomous Collaborative Platforms, and Collaborative Combat Aircraft.

NGS-RR program efforts are set by capability gaps within the Challenging Targets Initial Capabilities Document and as approved by the Capabilities Decision Memorandum (Signed Jan 2019). These requirements have been further verified, modeled, and developed through the Airborne Sensors for ISR (ASI) Analysis of Alternatives (AoA). Program requirements were further defined in the NGS-RR Draft Capability Development Document (DCDD) approved on 21 February 2021.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.0M was expended for civilian pay expenses in this program element, and in FY24 \$0.0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Next Gen Sensors Tech Maturation/Risk Reduction	0.000	12.461	8.742
<b>Description:</b> Mold current and future ISR into a platform-agile, non-proprietary, autonomous multi-INT cross cueing solution that is designed based on mission requirements. Sensors will have to penetrate up to highly contested domains and survive to operate. This project will also increase interoperability by developing common standards and interfaces for mission and sensor systems.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>	<b>Project (Number/Name)</b> 642001 / <i>Next Gen Sensors Tech Maturation/Risk Reduction</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b><i>FY 2024 Plans:</i></b> - Continue development of real-time multi-domain battlespace awareness in highly contested environments. Mature open architectures for ISR systems including cybersecurity analysis, industry standardization, and open architecture demonstrations.</p> <p><b><i>FY 2025 Plans:</i></b> - Will continue development of real-time multi-domain battlespace awareness in highly contested environments. Mature open architectures for ISR systems including cybersecurity analysis, industry standardization, and open architecture demonstrations.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding decreased due to a reduction in lab test hardware equipment and requirements for the MEDUSA demonstrator.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	12.461	8.742

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

NGS activities will leverage parallel development activities and integrate them with a risk-informed approach to develop and demonstrate NGS capabilities that meet military needs under operationally-relevant environments and conditions. This program has established a forum of stakeholders, consisting of multiple Other Government Agencies (OGAs), end-users, and MAJCOMs to ensure that the program deliverables are answering identified warfighter needs, to ensure a clear and concise technology transition path.

The acquisition strategy is to maximize commercial and national development efforts and investment through multiple contracting methods, including the use of engineering change proposals to modify existing contracts and new contracts that were awarded both competitively or on a sole source basis.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>	<b>Project (Number/Name)</b> 642001 / <i>Next Gen Sensors Tech Maturation/Risk Reduction</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Sense and Sense-making Demonstrator (MEDUSA)	Various	Various: TBD : TBD	-	-		6.051	Dec 2023	5.438	Nov 2024	-		5.438	Continuing	Continuing	-
AURORA	Various	Various: TBD : TBD	-	-		1.225	Dec 2023	0.000		-		0.000	Continuing	Continuing	-
Digital Engineering (DE), Model Based Systems Engineering (MBSE)	Various	Various: TBD : TBD	-	-		2.464	Nov 2023	2.538	Nov 2024	-		2.538	Continuing	Continuing	-
<b>Subtotal</b>			-	-		9.740		7.976		-		7.976	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA: Other Govt Cost	Various	Various: TBD : TBD	-	-		2.721	Nov 2023	0.766	Nov 2024	-		0.766	Continuing	Continuing	-
<b>Subtotal</b>			-	-		2.721		0.766		-		0.766	Continuing	Continuing	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	12.461	8.742	-	8.742	Continuing	Continuing	N/A

**Remarks**  
 FY24 Next Generation Sensors moved from ARS PE 0305206F BPAC 672001 to ATS PE 0604257F BPAC 642001 for continued development, tech maturation, and risk reduction.



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>	<b>Project (Number/Name)</b> 642001 / <i>Next Gen Sensors Tech Maturation/Risk Reduction</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>NGS Tech Maturation &amp; Risk Reduction</i></b>				
Sense and Sense-making Demonstrator (MEDUSA)	1	2024	4	2029
AURORA	1	2024	4	2029
Model Based Systems Engineering	1	2024	4	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>				<b>Project (Number/Name)</b> 644818 / <i>Imaging and Targeting Support</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
644818: <i>Imaging and Targeting Support</i>	-	12.311	15.189	15.462	0.000	15.462	15.741	15.953	16.309	11.522	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Imaging and Targeting Support (I&TS) develops, matures, and proves next generation sensor capabilities. It provides a key linkage between government and industry research labs by fielding DoD GEOINT tools with the flexibility to adapt each development cycle to the evolving mission set and threat situation. I&TS supports DAF requirements using an annual cycle approach for continuous innovation that is prioritized by the GEOINT Capabilities Working Group (GCWG). I&TS program funds are distributed to projects based on the development priorities established by the USAF GCWG, which is chartered to guide the I&TS capability investment. When required, the USAF may move funds between I&TS projects, developing the highest priority projects in response to urgent (e.g., JUON) and emerging (e.g., JEON) warfighter needs.

Adversary targets are aggressively increasing in both scale and complexity. Airborne GEOINT capabilities are complementary to spaceborne data collection due to their traceability and the contested nature of overhead environments. I&TS implements an annual process to identify focus areas that accelerates critical sensing technology, governed by the GCWG, which represents sponsors, acquirers, and warfighters.

Advancements focus on: Electro-optics (EO), Infrared (IR), Radar/Synthetic Aperture Radar (SAR), Hyperspectral Imagery (HSI), Light Detection and Ranging (LiDAR), acoustics, geolocation accuracy, and multi-INT collection. In addition to these modalities, this program also incorporates associated reductions in the find, fix, and track kill chain as well as reductions in Size, Weight, Power, and Cost (SWAP-C). Artificial Intelligence (AI) and Machine Learning (ML) are among techniques employed to expedite the kill chain.

Sensing enhancements include but are not limited to:

Radar:

- Inverse Synthetic Aperture Radar (ISAR)/Maritime Modes
- Air to Air modes
- Ground Moving Target Indicator (GMTI)
- Bi-statics
- Dismount detection
- Polarimetric Imaging
- Foliage Penetration (FOPEN)

HSI:

- Spectral Identification

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>	<b>Project (Number/Name)</b> 644818 / <i>Imaging and Targeting Support</i>

Multi-INT Collection:

- Autonomous Collaborative Platforms
- Sensor orchestration, queuing, and data fusion

Expedite the Kill Chain:

- Automatic Targeting Recognition (ATR) algorithms
- Near Real Time/On-Edge Targeting and dissemination

This program uses modular and open system hardware and software approaches to accelerate integration efforts and facilitate transition. This includes AgilePod, Sensor Open System Architecture (SOSA), Open Mission System (OMS), Common Open Architecture Radar Program (COARPS), Kubernetes (K8s), and common interfaces.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.0M was expended for civilian pay expenses in this program element, and in FY24 \$0.0M is forecasted for civilian pay expenses in this program element.”

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Imaging & Targeting Support (I&TS)	12.311	15.189	15.462
<p><b>Description:</b> Corporately prioritized Air Force Multi-INT Portfolio of projects to develop and demonstrate next generation airborne sensors and processing technologies to further the art of the possible and/or transition ISR capabilities (ex: radar improvement, next-generation HSI, LIDAR, ISR Standards, EO/IR, and data mitigation technologies).</p> <p><b>FY 2024 Plans:</b> Develop, modernize, and demonstrate lower TRL ISR projects for advancement up to and including prototyping and operational demonstrations. The following FY23 efforts will continue into FY24:</p> <ul style="list-style-type: none"> <li>• GMTI Mode</li> <li>• Automatic Image Registration</li> <li>• Aether Spy Digital T/R Module (DSTIC) Maturation</li> <li>• Magic Heat, Birdbox v2</li> <li>• These efforts and new proposed projects will be approved through the GEOINT Capabilities Working Group (GCWG) Executive Element process. Efforts are approved in the summer prior to the start of the new fiscal year.</li> </ul>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>	<b>Project (Number/Name)</b> 644818 / <i>Imaging and Targeting Support</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>Initiate FY24 approved projects (Collaborative Teaming, Classified Algorithm, Aether Spy DSTIC, GMTI Mode, Automatic Image Registration, Resolute Sentry/Birdbox risk reduction)</li> </ul> <p><b><i>FY 2025 Plans:</i></b></p> <ul style="list-style-type: none"> <li>Will continue the execution of FY24 projects</li> <li>Will initiate the FY25 GCWG prioritized projects</li> </ul> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increase is due to minor inflationary adjustments.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	12.311	15.189	15.462

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The Imaging and Targeting Support efforts are prioritized on an annual basis by the GCWG in accordance with the validated gaps in the Challenging Targets Initial Capabilities Document. The resulting funded efforts are then contracted for and/or executed by various program offices, laboratories, industry, and/or other government agencies.

The acquisition strategy is to maximize commercial and national development efforts and investment through multiple contracting methods, including the use of Engineering Change Proposals, to modify existing and new contracts that were awarded both competitively and on a sole source basis.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>	<b>Project (Number/Name)</b> 644818 / <i>Imaging and Targeting Support</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aether Spy DSTIC Maturation	SS/CPFF	Northrup Grumman, various : Falls Church, VA	-	3.000	Mar 2023	2.800	Nov 2023	-		-		-	Continuing	Continuing	-
MAGIC Heat	SS/CPFF	BAE Systems : Durham, NC	-	0.907	Dec 2022	1.598	Nov 2023	-		-		-	Continuing	Continuing	-
BirdBox V2 ATR in HCE	SS/CPFF	AFRL, Multiple Vendors : Dayton, OH	-	1.201	Mar 2023	3.165	Nov 2023	-		-		-	Continuing	Continuing	-
Massed Sensing	SS/CPFF	AFRL, Multiple vendors : Dayton, OH	-	1.000	Mar 2023	0.000	Jan 2024	-		-		-	Continuing	Continuing	-
GMTI	SS/CPFF	Lockheed Martin : Arlington, VA	-	2.000	Dec 2022	-		-		-		-	Continuing	Continuing	-
Automatic Image Registration	SS/CPFF	Lockheed Martin : Arlington, VA	-	1.500	Dec 2022	-		-		-		-	Continuing	Continuing	-
MEDUSA	SS/CPFF	MIT/LL : Boston, MA	-	2.077	May 2023	-		-		-		-	Continuing	Continuing	-
AMTI Study	SS/CPFF	update : update	-	-		2.000	Apr 2024	-		-		-	Continuing	Continuing	-
Rubber Duckie	SS/CPFF	update : update	-	-		2.000	Nov 2023	-		-		-	Continuing	Continuing	-
Collaborative Teaming	SS/CPFF	update : update	-	-		2.900	Apr 2024	-		-		-	Continuing	Continuing	-
New Technology Efforts (Prioritized by GCWG)	Various	Various : Various	-	0.039	Oct 2023	0.173	Apr 2024	13.562	Jan 2025	-		13.562	Continuing	Continuing	-
<b>Subtotal</b>			-	11.724		14.636		13.562		-		13.562	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Support Costs (PSC) Other Gvmt Cost	Various	Various : Dayton, OH	-	0.587	Dec 2022	0.553	Dec 2023	1.900	Dec 2024	-		1.900	Continuing	Continuing	-
<b>Subtotal</b>			-	0.587		0.553		1.900		-		1.900	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>	<b>Project (Number/Name)</b> 644818 / <i>Imaging and Targeting Support</i>

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b><i>Imaging and Targeting Support</i></b>																												
Aether Spy																												
MAGIC Heat																												
BirdBox V2 ATR in HCE																												
Massed Sensing																												
GMTI																												
Automatic Image Registration																												
MEDUSA																												
AMTI Study																												
Rubber Duckie																												
Collaborative Teaming																												
GCWG Technology Efforts																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604257F / <i>Advanced Technology and Sensors</i>	<b>Project (Number/Name)</b> 644818 / <i>Imaging and Targeting Support</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Imaging and Targeting Support</i></b>				
Aether Spy	2	2023	2	2025
MAGIC Heat	1	2023	4	2024
BirdBox V2 ATR in HCE	2	2023	2	2024
Massed Sensing	2	2023	3	2024
GMTI	1	2023	4	2024
Automatic Image Registration	1	2023	4	2024
MEDUSA	2	2023	4	2024
AMTI Study	3	2024	4	2025
Rubber Duckie	1	2023	4	2024
Collaborative Teaming	3	2024	4	2025
GCWG Technology Efforts	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604288F / <i>Survivable Airborne Operations Center (SAOC)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	94.740	888.829	1,687.500	0.000	1,687.500	1,841.765	1,804.840	1,636.012	1,116.009	0.000	9,069.695
646507: <i>Survivable Airborne Operations Center (SAOC)</i>	-	94.740	888.829	1,687.500	0.000	1,687.500	1,841.765	1,804.840	1,636.012	1,116.009	0.000	9,069.695
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

The Survivable Airborne Operations Center (SAOC) will replace the aging E-4B fleet, which faces capability gaps, diminishing manufacturing sources, increased maintenance costs, and parts obsolescence as it approaches the end of its serviceable life. SAOC will provide the President of the United States (POTUS), the Secretary of Defense (SECDEF), and the Joint Chiefs of Staff (JCS) a worldwide, survivable, and enduring node of the National Military Command System (NMCS) to fulfill national security requirements throughout all stages of conflict. As a command, control and communications center directing US forces, executing emergency war orders and coordinating the activities of civil authorities including national contingency plans, this capability ensures continuity of operations and continuity of government as required in a national emergency or after negation/destruction of ground command and control centers. SAOC will fulfill the requirements of the AF Nuclear Mission by providing Nuclear Command, Control and Communications (NC3) capabilities to enable the exercise of authority and direction by the President to command-and-control US military nuclear weapons operations.

Program funding supports all activities required to execute development of the SAOC Weapon System to include system development, integration of NC3 and other DoD/AF programs into the SAOC weapon system, test activities, and product support. Funds also support program office operations, management services (Federally Funded Research and Development Centers [FFRDC], Advisory and Assistance Services [A&AS], etc.), Program Management Support (PMS), security, facilities, prototyping, equipment, and to integrate Digital Engineering and other required program office capabilities.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23, \$1.142M will be expended for civilian pay expenses in this program element, and in FY24, \$4.368M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 Program Element (Number/Name)</b> PE 0604288F I Survivable Airborne Operations Center (SAOC)
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	98.213	888.829	1,883.971	0.000	1,883.971
Current President's Budget	94.740	888.829	1,687.500	0.000	1,687.500
Total Adjustments	-3.473	0.000	-196.471	0.000	-196.471
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-3.164	0.000			
• Other Adjustments	-0.309	0.000	-196.471	0.000	-196.471

**Change Summary Explanation**

FY 2023 adjustment for Small Business Innovative Research (SBIR)  
 FY 2025 decrease of 196.471M was adjusted to better align funding execution.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> SAOC	94.740	888.829	1,687.500
<b>Description:</b> The SAOC weapon system will be comprised of a Commercial Derivative Aircraft (CDA), mission system, and ground support systems. The CDA will be hardened to protect against nuclear and electromagnetic effects and modified with an aerial refueling capability to enable sustained airborne operations. The mission system will integrate secure communications and planning capabilities on modern information technology (IT) infrastructure based on a Modular Open System Approach (MOSA). The ground systems include aircrew trainers, mission crew trainers, maintenance training devices, ground support equipment, test and sustainment system integration laboratories, and other ground systems to enable the operations, sustainment, and future modifications of the SAOC weapon system across the lifecycle.			
<b>FY 2024 Plans:</b>			
-Conclude Source Selection activities, complete Milestone requirements in anticipation of favorable Milestone B decision, and award the SAOC contract(s) to begin executing Engineering and Manufacturing Development (EMD) activities, including system engineering analysis, trade studies, system/subsystem requirement decomposition and functional analysis, and weapon system design.			
-Continue supporting development and modernization of required NC3, C3, Cryptographic, Open Architecture (OA)/Open Mission System (OMS), and other capabilities to ensure systems are sustainable and available to integrate into the SAOC Weapon System			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604288F / <i>Survivable Airborne Operations Center (SAOC)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>-Continue to develop and implement the infrastructure, tools, and training necessary for the SAOC Integrated Digital Environment, which will enable the SAOC Program Office to execute and support the development and lifecycle sustainment of the SAOC Weapon System</p> <p>-Continue test and evaluation (T&amp;E) planning and preparation activities, including manning, procurement of long-lead test equipment, training, and facility modifications</p> <p>-Continue program office manning growth-path required to support the SAOC system development</p> <p><b>FY 2025 Plans:</b></p> <p>-Continue executing Engineering and Manufacturing Development (EMD) activities to include system engineering analysis, trade studies, system/subsystem requirement decomposition and functional analysis, and weapon system design.</p> <p>-Continue supporting development, modernization, and delivery of required NC3, C3, Cryptographic, OA/OMS, and other capabilities to ensure systems are sustainable and available to integrate into the EMD design and overall SAOC Weapon System</p> <p>-Continue to develop and implement the infrastructure, tools, and training necessary for the SAOC Integrated Digital Environment and program execution, which will enable the SAOC Program Office to execute and support the development and lifecycle sustainment of the SAOC Weapon System</p> <p>-Continue T&amp;E planning and preparation activities including manning, procurement of test equipment, training, and facility modifications; begin early functional testing at the component and LRU levels; begin development of the T&amp;E SIL</p> <p>-Continue program office manning growth-path required to support the SAOC system development</p> <p>-Initiate Product Support Business Case Analysis (PS-BCA) to support Product Support strategies to achieve SAOC capabilities and affordability</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Significant investment increase from FY 2024 to FY 2025 is due to the continuation of EMD activities for a full fiscal year in FY25 compared to only 7 months of EMD execution in FY24.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	94.740	888.829	1,687.500

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
Based on the Acquisition Strategy approved by Under Secretary of Defense for Acquisition and Sustainment on 30 June 2022, SAOC will enter the acquisition pathway at Milestone B and award a competitive Development contract with Production and Interim Contractor Support (ICS) Options. This contract requires the Prime contractor

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0604288F / <i>Survivable Airborne Operations Center (SAOC)</i>

to buy the required aircraft, bring each aircraft to a common configuration, make required modifications, develop and integrate the mission system into each aircraft, provide required ground support systems and conduct contract support operations for fielded systems until the Operations and Support Phase.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
3600 / 4				PE 0604288F / Survivable Airborne Operations Center (SAOC)						646507 / Survivable Airborne Operations Center (SAOC)					
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Pre-Development Contract Activities/Studies	C/Various	TBD : TBD	-	17.362	Oct 2022	-		-		-		-	Continuing	Continuing	-
Mission Systems/Subsystems Development	C/Various	Various : TBD	-	32.955	Jan 2023	29.600	Jan 2024	124.400	Jan 2025	-		124.400	Continuing	Continuing	-
Prime - EMD	C/TBD	TBD : TBD	-	0.038		806.778	Feb 2024	1,503.075	Oct 2024	-		1,503.075	Continuing	Continuing	-
<b>Subtotal</b>			-	50.355		836.378		1,627.475		-		1,627.475	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Direct Mission Support	C/Various	Various : Bedford, MA : TBD	-	15.789	Oct 2022	16.130	Oct 2023	12.841	Oct 2024	-		12.841	Continuing	Continuing	-
Direct Cite Civilian Pay	TBD	Not specified. : Hanscom AFB, MA	-	1.142	Oct 2022	4.368	Oct 2023	4.586	Oct 2024	-		4.586	Continuing	Continuing	-
<b>Subtotal</b>			-	16.931		20.498		17.427		-		17.427	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	C/CPIF	Not specified. : TBD	-	0.000	Oct 2022	4.000	Oct 2023	8.500	Oct 2024	-		8.500	Continuing	Continuing	-
<b>Subtotal</b>			-	0.000		4.000		8.500		-		8.500	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FFRDC	SS/CPFF	Various : Bedford, MA : Hanscom AFB, MA	-	13.199	Oct 2022	8.500	Oct 2023	13.650	Oct 2024	-		13.650	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604288F / <i>Survivable Airborne Operations Center (SAOC)</i>	<b>Project (Number/Name)</b> 646507 / <i>Survivable Airborne Operations Center (SAOC)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS	C/CPFF	Various : Bedford, MA : Hanscom AFB, MA	-	11.140	Jul 2023	15.193	Jul 2024	15.497	Oct 2024	-		15.497	Continuing	Continuing	-
PMA - Other	Various	Various : Bedford, MA : Hanscom AFB, MA	-	3.115	Oct 2022	4.260	Oct 2023	4.951	Oct 2024	-		4.951	Continuing	Continuing	-
<b>Subtotal</b>			-	27.454		27.953		34.098		-		34.098	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		-	94.740	888.829	1,687.500	1,687.500	Continuing	Continuing	N/A

**Remarks**

Product Development:  
 -FY24 decrease in Pre-Development Contract Activity/Studies and Mission Systems/Subsystems Development due to award and execution of EMD contract  
 -FY24 increase in Prime Contract due to the award and execution of the SAOC EMD Contract  
 -FY25 increase in Prime Contract due to the continued execution of the SAOC EMD Contract for a full year

Support:  
 -FY24 decrease in Direct Mission Support is due to finalizing deployment of digital engineering infrastructure  
 -FY24 increase in DCA continues office manning growth path required to support SAOC EMD execution  
 -FY25 increase in Direct Mission Support is due to increasing costs for software licenses in support of digital engineering infrastructure

Test and Evaluation (T&E):  
 -FY24 and FY25 increase in T&E is due to continuing T&E planning and preparation activities including manning, procurement of test equipment, training, and facility modifications; begin early functional testing at the component and LRU levels; begin development of the T&E SIL.

Management Services:  
 -FY24 and FY25 increases in FFRDC and EPASS (A&AS) attributed to continuing program office ramp-up to support concurrent air vehicle, mission system, training systems, and ground support facility design, development and early test activities.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604288F / <i>Survivable Airborne Operations Center (SAOC)</i>	<b>Project (Number/Name)</b> 646507 / <i>Survivable Airborne Operations Center (SAOC)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Survivable Airborne Operations Center Development</i></b>	
Acquisition Strategy Refinement and RFP Development	
Pre-EMD Contract Activities, Studies & Prototyping	
Source Selection	
Milestone B	
EMD	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604288F / <i>Survivable Airborne Operations Center (SAOC)</i>	<b>Project (Number/Name)</b> 646507 / <i>Survivable Airborne Operations Center (SAOC)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Survivable Airborne Operations Center Development</i></b>				
Acquisition Strategy Refinement and RFP Development	1	2023	1	2023
Pre-EMD Contract Activities, Studies & Prototyping	1	2023	4	2023
Source Selection	1	2023	2	2024
Milestone B	2	2024	2	2024
EMD	2	2024	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	34.986	26.638	3.485	0.000	3.485	3.572	3.646	3.778	3.853	Continuing	Continuing
64317A: <i>64317A Technology Transfer Add</i>	-	2.639	0.113	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.752
646003: <i>Partnership Intermediary Agreement(s)</i>	-	21.724	3.404	3.485	0.000	3.485	3.572	3.646	3.778	3.853	Continuing	Continuing
646030: <i>AFwerX</i>	-	10.623	23.121	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	33.744

**A. Mission Description and Budget Item Justification**

Technology Transfer is a critical strategy for the NDS and DoD that makes the best possible use of national scientific, technical resources and information to enhance the effectiveness of DoD forces and warfighting capability systems. The Air Force Technology Transfer and Transition (T3) program oversees all Air Force inventions/patents and technology transfer agreements (CRADAs, EPAs, CTAs, MTAs, etc). Over their history, Tech Transfer has provided a great return on investment (over 100 to 1), as the agreements themselves do not provide DoD funding to companies/non-trationals, but serve as a way for us to partner together to achieve a common goal. The only major costs to increasing this force multiplier are staff and legal support times (they are not contracts).

Since 2012 the Air Force Tech Transfer & Transition Program Office manages two OSD level Partnership Intermediaries (PIAs) in TechLink & Miltech (Montana State University) as well as helps SAF/AQR in the management and oversight of the 14 AF PIAs (as of FY23). The 646003 project includes the management of DoD/AF PIAs, the development of data to support the Defense Technology Transfer Information System (DTTIS), invention disclosure & patent processing, program management activities, training, and support to the Technology Executive Officer (TEO). This program impacts virtually all technology fields, including our Critical Technology Areas, and non-funded mechanisms to help achieve the operational imperatives via Tech Transfer as captured in the Annual DoD Technology Transfer Report.

The AFWERX mission is to accelerate agile and affordable capability transitions by teaming innovative technology developers with Airmen and Guardian talent. AFWERX leverages Spark (the Airmen and Guardian talent base), AFVentures (the dual-use expanded technology base), and Prime (technology transitions) to scale and accelerate the capability. Funding in this project supports AFWERX research and development, innovation hubs, and information technology, public affairs, and marketing.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Technology Transfer capabilities. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F.

This program element may include necessary expenses to support the operation and maintenance of facilities to manage, execute, and deliver science and technology capabilities.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>
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Beginning in FY 2024, PE 0604317F, Technology Transfer, Project 646030, AFWERX efforts and Project 64317A, Technology Transfer Add were transferred to PE 0604009F, AFWERX Prime, Project 640856 AFWERX Operations and Support.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	35.430	26.638	8.637	0.000	8.637
Current President's Budget	34.986	26.638	3.485	0.000	3.485
Total Adjustments	-0.444	0.000	-5.152	0.000	-5.152
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.444	0.000			
• Other Adjustments	0.000	0.000	-5.152	0.000	-5.152

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 646003: *Partnership Intermediary Agreement(s)*

Congressional Add: *Program increase- academic partnership intermediary agreement tech transfer*

Congressional Add: *Program Increase- technology transfer*

Congressional Add: *Program increase - partnership intermediary program*

Congressional Add Subtotals for Project: 646003

Congressional Add Totals for all Projects

	<b>FY 2023</b>	<b>FY 2024</b>
	9.875	-
	3.625	-
	4.937	-
Congressional Add Subtotals for Project: 646003	18.437	-
Congressional Add Totals for all Projects	18.437	-

**Change Summary Explanation**

The decrease in FY 2025 is due to the transfer of funding from PE 0604317F, Projects 63417A Technology Transfer Add and 646030 AFWERX, to PE 0604009F AFWERX Prime, Project 640856 AFWERX Operations and Support.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 64317A / <i>64317A Technology Transfer Add</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
64317A: <i>64317A Technology Transfer Add</i>	-	2.639	0.113	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.752
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

The AFWERX mission is to accelerate agile and affordable capability transitions by teaming innovative technology developers with Airmen and Guardian talent. AFWERX leverages Spark (the Airmen and Guardian talent base), AFVentures (the dual-use expanded technology base), and Prime (technology transitions) to scale and accelerate the capability. Funding in this project supports AFWERX research and development, innovation hubs, and information technology, public affairs, and marketing. The AFWERX Program reduces risk in emerging technology markets by partnering with industries through Prime investments and providing access to Government analysis, testing and certification capabilities. Prime investments focus on Government-industry partnerships to influence and militarize emerging commercial capabilities to ensure US competitive advantage in key technology areas. The Spark mission is to inspire and enable Airmen and Guardians to unleash their collective talent and ingenuity. Spark connects innovators using virtual collaboration, immersive training, and networking opportunities to inspire ideas and cultivate more lethal force. By connecting operators closer to acquisition processes, Spark provides both a voice and a conduit to accelerate powerful ideas into game-changing operational realities. This focus helps guide technologies through transition across the valley from idea to scaled and sustained capability.

Beginning in FY 2024, PE 0604317F, Technology Transfer, Project 64317A, Technology Transfer Add efforts were transferred to PE 0604009F, AFWERX Prime, Project 640856 AFWERX Operations and Support.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b>Title:</b> Civilian Pay	2.639	0.113	0.000
<b>Description:</b> Provide professional government civilian workforce in support of AFWERX programs and activities.			
<b>FY 2024 Plans:</b> Funds civilian positions across all of the AFWERX charged missions. Supports AFWERX Prime, Ventures, Spark, Integration, Operations, Finance, and Contracting Divisions.			
<b>FY 2025 Plans:</b> Not applicable.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 64317A / <i>64317A Technology Transfer Add</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
FY 2025 decreased compared to FY 2024 by \$0.113 million. Funding decrease is due to funding realignment from PE 0604317F Technology Transfer, Project 64317A Technology Transfer Add to PE 0604009F AFWERX Prime, Project 640856 AFWERX Operations and Support.			
<b>Accomplishments/Planned Programs Subtotals</b>	2.639	0.113	0.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Not applicable



**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>			<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 64317A / <i>64317A Technology Transfer Add</i>	

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Civilian Pay</b>	
Civilian Pay	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 64317A / <i>64317A Technology Transfer Add</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Civilian Pay</i></b>				
Civilian Pay	1	2023	4	2024

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>				<b>Project (Number/Name)</b> 646003 / <i>Partnership Intermediary Agreement(s)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
646003: <i>Partnership Intermediary Agreement(s)</i>	-	21.724	3.404	3.485	0.000	3.485	3.572	3.646	3.778	3.853	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Air Force Technology Transfer & Transition Office manages the Montana State University's TechLink & MilTech Partnership Intermediary Agreements (PIAs) as well as Air Force PIAs. TechLink brokered 70% of DoD licenses over the past 10 years. TechLink brokered 80% of DoD license agreements over the past 5 years, with 90% of them being with small businesses. Technology Transfer is a critical strategy for the National Defense Strategy and DoD that makes the best possible use of national scientific, technical resources and information to enhance the effectiveness of DoD forces and warfighting capability systems.

The Air Force Technology Transfer program oversees all AF inventions/patents and technology transfer agreements. This project includes the management of DoD/AF PIAs, the development of data to support the Defense Technology Transfer Information System (DTTIS), invention disclosure & patent processing, program management activities, training, and support to the Technology Executive Officer (TEO). This program impacts virtually all technology fields, including our Critical Technology Areas, and non-funded mechanisms to help achieve the operational imperatives via Tech Transfer as captured in the Annual DoD Technology Transfer Report.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Technology Transfer	3.287	3.404	3.485
<b>Description:</b> Enhance and expand transfer of technologies between DoD and the commercial sector.			
<b>FY 2024 Plans:</b> Continue implementing new cost-effective approaches to further increase and accelerate transfer of technologies developed at DoD laboratories and facilitate their transition to the warfighter. Continue evaluation of and market DoD laboratory inventions and broker technology transfer agreements/Cooperative Research and Development Agreements (CRADAs), to include commercial licenses, that will support the US defense mission and benefit the US economy. Continue to engage with the innovative capabilities of non-traditional defense contractors in developing and commercializing new dual-use products and services.			
<b>FY 2025 Plans:</b> - Continue implementing new cost-effective approaches to further increase and accelerate transfer of technologies developed at DoD laboratories and facilitate their transition to the warfighter. - Continue evaluation of and market DoD laboratory inventions and broker technology transfer agreements/Cooperative Research and Development Agreements (CRADAs), to include commercial licenses, that will support the US defense mission and benefit the US economy.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646003 / <i>Partnership Intermediary Agreement(s)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
- Continue to engage with the innovative capabilities of non-traditional defense contractors in developing and commercializing new dual-use products and services. Pursue additional engineering sample efforts through OSD and AF PIAs while better aligning those efforts with AF capability development pipelines. Increased activities in PIAs is expected due to the "One Lab, Two Services" construct.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 funding increased compared to FY 2024 by \$0.074M. Justification for this increase is described in plans above.			
<b>Accomplishments/Planned Programs Subtotals</b>	3.287	3.404	3.485

	<b>FY 2023</b>	<b>FY 2024</b>
<b><i>Congressional Add:</i></b> Program increase- academic partnership intermediary agreement tech transfer	9.875	-
<b><i>FY 2023 Accomplishments:</i></b> Conduct Congressionally directed effort		
<b><i>Congressional Add:</i></b> Program Increase- technology transfer	3.625	-
<b><i>FY 2023 Accomplishments:</i></b> Conduct Congressionally directed effort		
<b><i>Congressional Add:</i></b> Program increase - partnership intermediary program	4.937	-
<b><i>FY 2023 Accomplishments:</i></b> Conduct Congressionally directed effort		
<b>Congressional Adds Subtotals</b>	18.437	-

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

N/A

**D. Acquisition Strategy**

This effort uses a Partnership Intermediary Agreement (PIA) with TechLink at Montana State University. Through this agreement TechLink helps the Department of Defense to establish licensing and other technology transfer agreements with US industry. The effort is run through the Air Force Research Laboratory/Small Business office at Wright Patterson Air Force Base.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646003 / <i>Partnership Intermediary Agreement(s)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Partnership Intermediary</i></b>	
Tech Transfer Partnership Intermediary	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646003 / <i>Partnership Intermediary Agreement(s)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Partnership Intermediary</i></b>				
Tech Transfer Partnership Intermediary	1	2023	4	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>				<b>Project (Number/Name)</b> 646030 / <i>AFwerX</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
646030: <i>AFwerX</i>	-	10.623	23.121	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	33.744
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The AFWERX mission is to accelerate agile and affordable capability transitions by teaming innovative technology developers with Airmen and Guardian talent. AFWERX leverages Spark (the Airmen and Guardian talent base), AFVentures (the dual-use expanded technology base), and Prime (technology transitions) to scale and accelerate the capability. Funding in this project supports AFWERX research and development, innovation hubs, and information technology, public affairs, and marketing. The AFWERX Program reduces risk in emerging technology markets by partnering with industries through Prime investments and providing access to Government analysis, testing and certification capabilities. Prime investments focus on Government-industry partnerships to influence and militarize emerging commercial capabilities to ensure US competitive advantage in key technology areas. The Spark mission is to inspire and enable Airmen and Guardians to unleash their collective talent and ingenuity. Spark connects innovators using virtual collaboration, immersive training, and networking opportunities to inspire ideas and cultivate more lethal force. By connecting operators closer to acquisition processes, Spark provides both a voice and a conduit to accelerate powerful ideas into game-changing operational realities. This focus helps guide technologies through transition across the valley from idea to scaled and sustained capability.

Beginning in FY 2024, PE 0604317F, Technology Transfer, Project 646030, AFWERX efforts were transferred to PE 0604009F, AFWERX Prime, Project 640856 AFWERX Operations and Support.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> AFWERX	10.623	23.121	0.000
<b>Description:</b> Transition affordable and accelerated capabilities by teaming innovative technology developers with Airmen and Guardian talent.			
<b>FY 2024 Plans:</b> Continue development and sustainment of the Acquisition Workforce and organizational capabilities. Core operations include civilian billets, expanded Spark engagement, and dynamic hubs, and site initiatives. Spark funding delivers development and fielding of Airmen and Guardian centric program management tools to connect the innovation ecosystem, establishes a Joint Spark innovation incubator. Dynamic hub and site initiatives seeks to establish a dynamic hub/site posturing strategy that is consistent with the DIAL-In (Defense, Industry, Academia, and Local Government Investment) model, with phased expanded growth across the innovation/commercial ecosystem.			
<b>FY 2025 Plans:</b> Not Applicable.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646030 / <i>AFwerX</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
FY 2025 funding decreased compared to FY 2024 by \$23.082 million. Funding decrease is due to funding realignment from PE 0604317F Technology Transfer to PE 0604009F AFWERX Prime Project 640856 AFWERX Operations and Support.			
<b>Accomplishments/Planned Programs Subtotals</b>	10.623	23.121	0.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Not Applicable.



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646030 / <i>AFwerX</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>AFWERX</b>	
AFWERX	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604317F / <i>Technology Transfer</i>	<b>Project (Number/Name)</b> 646030 / <i>AFwerX</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>AFWERX</b>				
AFWERX	1	2023	4	2024

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604327F / <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Program</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	113.552	19.266	154.417	0.000	154.417	48.300	0.000	0.000	0.000	0.000	335.535
645341: <i>Direct Strike Penetrator Systems</i>	0.000	113.552	19.266	154.417	0.000	154.417	48.300	0.000	0.000	0.000	0.000	335.535
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**  
This program, BA 4, PE 0604327F, project 645341, Next Generation Penetrator, is a new start.

**A. Mission Description and Budget Item Justification**

The Direct Strike Penetrator Systems program develops and modifies a family of advanced precision-guided penetrator munitions to include evaluation of integrated technologies for the development/integration of advanced position, navigation, and timing (PNT) capabilities (i.e., Global Positioning System (GPS), non-GPS, optical, passive, active, etc.) and smart fuze systems, and all penetrator components, that will provide the Air Force with improved ability to attack Hard and Deeply Buried Targets (HDBT), such as bunker and tunnel facilities, using air-to-surface conventional munitions. Systems developed include, but are not limited to Massive Ordnance Penetrator (MOP), GBU-72 Advanced 5,000-lb Penetrator Weapon System (A5K), and Section 804 Rapid Prototype/Rapid Fielding activities. Systems developed will be integrated onto current and future platforms to reduce the number of weapons required to hold HDBTs at risk and will result in more targets engaged per mission flown. Direct Strike Penetrators will provide critical global strike capability not met by inventory conventional weapons and will hold at risk the best protected high value assets essential to an enemy's war fighting ability. The project also provides an opportunity to quickly insert emerging technologies into existing and developing aircraft munitions and fuzes.

A Hard Target Munitions (HTM) Analysis-of-Alternatives (AoA) was conducted in 2014 to determine the best weapons and/or development efforts for addressing the HDBT mission area. The HTM AoA determined that it was necessary to develop a family of HTMs in order to apply effects to the entire range of HDBT sets. The Air Force is using the AoA to develop, produce and modify HDBT weapons identified as the most effective and affordable. Modeling and simulation is used to assess and characterize current inventory and to drive design and explore the utility of new classes of penetrator munitions.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY24 0.0M was expended for civilian pay expenses in this program element, and in FY25 0.0M is forecasted for civilian pay expenses in this program.

This program leverages digital acquisition tenets of open, agile, and digital. Common component development, in collaboration with other weapon systems, to reduce redundant costs between systems with similar subsystems requirements. Invests in analytical, information management, data management, digital environments, networks, facilities, and security infrastructure upgrades directly supporting development and sustainment of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604327F I <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Program</i>
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This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	141.826	19.266	0.000	0.000	0.000
Current President's Budget	113.552	19.266	154.417	0.000	154.417
Total Adjustments	-28.274	0.000	154.417	0.000	154.417
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-23.200	0.000			
• SBIR/STTR Transfer	-5.074	0.000			
• Other Adjustments	0.000	0.000	154.417	0.000	154.417

**Change Summary Explanation**

FY2023 Total Reprogramming 23.200M: one 13.200 Above Threshold Reprogramming and three Below Threshold Reprogramming totaling 10.000M.

FY2025 increase due to Next Generation Penetrator New Start, 125.606M.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Next Generation Penetrator	0.000	0.000	125.606
<b>Description:</b> Next Generation Penetrator (A20K) is the development and demonstration of an advanced large penetrator concept to augment Combatant Command (CCMD) capability against hard and deeply buried targets. Utilize subscale, sled, and phenomenology testing in concert with modeling and simulation efforts to design necessary warhead components that meet current lethality, survivability, and penetration performance parameters. Culminating in full scale testing and delivery of a prototype technical data package.			
<b>FY 2024 Plans:</b> N/A			
<b>FY 2025 Plans:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)		<b>R-1 Program Element (Number/Name)</b> PE 0604327F I Hard and Deeply Buried Target Defeat System (HDBTDS) Program		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Modeling and simulation for weapon design development, test & evaluation, long lead target design/construction, and ground test support for subscale and full-scale test execution. <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Next Generation Penetrator will be a new start in FY25.				
<b>Title:</b> Massive Ordnance Penetrator (MOP) Modification (Mod) <b>Description:</b> Modification of Smart Fuze functionality to enhance MOP weapon performance, holding additional hard and deeply buried targets (HDBT) at risk in multiple CCMD. Construct relevant HDBTs for testing. Execute MOP testing in support of modification efforts to include sub-scale and full-scale ground and flight tests. Analyze MOP weapon effectiveness. <b>FY 2024 Plans:</b> Continue long-lead target build and test & evaluation of MOP Mod for enhanced capability as well as accuracy enhancement efforts to hold HDBTs at risk. <b>FY 2025 Plans:</b> Continue extensive target build(s) and test & evaluation of MOP Mod for enhanced capability as well as accuracy enhancement efforts to hold HDBTs at risk. <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to continued target build and test & evaluation of MOP Mod for enhanced capability.		112.484	19.016	28.811
<b>Title:</b> Advanced 5,000 lb (A5K) Penetrator <b>Description:</b> GBU-72 Advanced 5,000 lb (A5K) Penetrator is an improved 5,000 lb class penetrator to address capability gaps identified in the HTM AoA. Conduct A5K design, development, integration, modeling and simulation, and testing to improve performance against increasingly hardened targets. This effort utilizes existing and improved technologies to field an integrated penetrator weapon system to include: an improved penetrator warhead, a smart fuze system that can detect layers/voids, and a modified Joint Direct Attack Munition (JDAM) tail kit for all weather, precision guidance, navigation, and control. <b>FY 2024 Plans:</b> Continue conducting A5K integration, modeling and simulation, and testing to improve performance against increasingly hardened targets to include DT/OT through -5 execution and data analysis. Closeout activities for DT/OT -3 through -5. Captive Carry flights by AFSEO for fielding recommendation. <b>FY 2025 Plans:</b>		1.068	0.250	0.000

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604327F I <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Program</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
N/A			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding decrease due to A5K development completing.			
<b>Accomplishments/Planned Programs Subtotals</b>	113.552	19.266	154.417

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PAAF 01 353190: <i>Massive Ordnance Penetrator (MOP)</i>	19.743	14.074	8.750	-	8.750	0.000	0.000	0.000	0.000	0.000	42.567
• PAAF 01 353020: <i>General Purpose Bombs</i>	148.102	142.118	144.417	-	144.417	180.390	176.466	180.278	183.851	0.000	1,155.622

**Remarks**  
Program Support Costs (PSC) Other Government Costs: Travel, Government Purchase Card (GPC), Program Support Personnel.

**E. Acquisition Strategy**  
MOP uses sole source cost type contracts to complete development, test, and evaluation activities.

The initial GBU-72/A5K penetrator design was accomplished through modeling, simulation, and analysis producing potential designs. The designs were developed based on the performance parameters of survivability, lethality, accuracy and penetration. The Government determined the optimum A5K design to then manufacture production representative prototypes to include warheads, fuzes and modified JDAM kits. These assets will be used to conduct and successfully complete qualification testing and integration.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604327F / <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Program</i>	<b>Project (Number/Name)</b> 645341 / <i>Direct Strike Penetrator Systems</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MOP Modification and Integration	SS/ Various	Boeing : St Louis, MO	0.000	-		-		1.000	Oct 2024	-		1.000	Continuing	Continuing	-
MOP Test Asset, Replenish (Cong Add \$)	SS/CPFF	Boeing : St Louis, MO	0.000	35.000	Sep 2023	-		-		-		-	0.000	35.000	-
Next Generation Penetrator Product Development	TBD	Not specified. : TBD	0.000	-		-		124.000	Dec 2024	-		124.000	0.000	124.000	-
<b>Subtotal</b>			0.000	35.000		-		125.000		-		125.000	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MOP System Contractor Support	MIPR	DOTC : Albuquerque, NM	0.000	-		2.143	Dec 2023	1.000	Oct 2024	-		1.000	Continuing	Continuing	-
A5K System T&E Contractor Support	MIPR	DOTC/ARA/NGIS : Albuquerque, NM	0.000	-		-		-		-		-	0.000	0.000	-
A5K System T&E Government Support	MIPR	MCAAP : McAlester, OK	0.000	-		-		-		-		-	0.000	0.000	-
DCA Civ Pay	Allot	AFLCMC/EBD : Eglin AFB, FL	0.000	-		-		-		-		-	0.000	0.000	-
<b>Subtotal</b>			0.000	-		2.143		1.000		-		1.000	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MOP Test & Evaluation	Various	AFLCMC : Eglin, Holloman, Edw, FL	0.000	25.634	Dec 2022	4.419	Dec 2023	1.000	Oct 2024	-		1.000	Continuing	Continuing	-
MOP Target Construction and Instrumentation	Various	DTRA : Albuquerque, NM	0.000	48.630	Jan 2023	11.204	Jan 2024	24.311	Oct 2024	-		24.311	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604327F / <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Program</i>	<b>Project (Number/Name)</b> 645341 / <i>Direct Strike Penetrator Systems</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A5K Developmental Test & Evaluation	Various	96 TW, 780 TS : Eglin, Holloman, FL	0.000	0.508	Jan 2023	0.225	Mar 2024	-		-		-	0.000	0.733	-
A5K Operational Test & Evaluation	Various	96 TW, Det 1 : Eglin, WSMR, FL	0.000	0.416	May 2023	-		-		-		-	0.000	0.416	-
<b>Subtotal</b>			0.000	75.188		15.848		25.311		-		25.311	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MOP Program Support Costs	Various	AFLCMC/EBD : Eglin AFB, FL	0.000	3.220	Oct 2022	1.250	Dec 2023	1.500	Dec 2024	-		1.500	Continuing	Continuing	-
A5K Program Support Costs	Various	AFLCMC/EBD : Eglin AFB, FL	0.000	0.144	Jan 2023	0.025	Nov 2023	-		-		-	0.000	0.169	-
Next Generation Penetrator Program Support Costs	Various	ALFCMC/EBD : Eglin AFB, FL	0.000	-		-		1.606	Dec 2024	-		1.606	0.000	1.606	-
<b>Subtotal</b>			0.000	3.364		1.275		3.106		-		3.106	Continuing	Continuing	N/A

**Remarks**  
MOP Modification program support costs funding increased to support additional testing activities.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	113.552	19.266	154.417	-	154.417	Continuing	Continuing	N/A

**Remarks**  
Program Support Costs (PSC) Other Government Costs: Travel, Government Purchase Card (GPC), Program Support Personnel.  
MOP Target Construction & Development increased due to target set requirements.



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604327F / <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Program</i>	<b>Project (Number/Name)</b> 645341 / <i>Direct Strike Penetrator Systems</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Direct Strike Penetrator Systems</i></b>				
MOP Modification Analysis and Testing	1	2023	4	2027
A5K Design, Development and Testing	1	2023	1	2025
Next Generation Penetrator Modeling & Simulation, Design, Product Development, Integration and Test	1	2025	4	2026

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	42.068	37.121	59.539	0.000	59.539	62.696	64.123	67.668	69.003	Continuing	Continuing
642812: <i>Acquisition/System Security Engineering</i>	-	20.227	17.137	25.336	0.000	25.336	35.796	36.532	37.854	38.601	Continuing	Continuing
642834: <i>Mitigations</i>	-	15.815	14.261	27.203	0.000	27.203	19.725	20.269	22.226	22.665	Continuing	Continuing
642836: <i>Mission Risk Analysis</i>	-	6.026	5.723	7.000	0.000	7.000	7.175	7.322	7.588	7.737	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

This program funds activities at the Cyber Resiliency Office for Weapon Systems (CROWS), which provides cyber capabilities and acquisition support to weapon system programs across the Department of the Air Force (DAF). The CROWS improves the cyber resiliency of DAF weapon systems to preserve mission effectiveness in contested cyberspace environments. Its goal is to integrate cyber resiliency into emerging and fielded weapon systems in order to mitigate critical cyber-based vulnerabilities. The CROWS' mission directly aligns with the National Defense Strategy (NDS). The NDS highlights integrated deterrence as vital to safeguarding U.S. national interests from aggression and strategic attacks by building a resilient, survivable Joint Force in the cyber domain, which requires the Department of Defense (DoD) to prioritize investments in cyber defense, resilience, and the continued integration of cyber capabilities into the full spectrum of military operations.

This program addresses cyber resiliency to improve weapon system survivability and mitigate mission risks through three primary activities. The first activity comprises DAF Program Executive Office (PEO) and Program Management Office (PMO) acquisition guidance, training, acquisition tool-development, and resourcing to facilitate weapon system-focused cyber resiliency integration. Notably, this includes hiring, training, and embedding Cyber Focus Teams (CFTs) directly within PEOs and PMOs. Additionally, the first activity includes developing capabilities to share cyber intelligence and vulnerability information across multiple acquisition programs to help identify, develop, and prototype enterprise counter cyber threat technologies. The second activity is to conduct weapon systems cyber analysis to identify and prioritize threat-informed vulnerabilities, and then identify, develop, and present viable courses of action to mature the material and nonmaterial mitigation trade space. The third activity is to design mitigation strategies and prototype mitigation solutions, emphasizing critical vulnerabilities that impact multiple weapon systems.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	43.372	37.121	60.818	0.000	60.818
Current President's Budget	42.068	37.121	59.539	0.000	59.539
Total Adjustments	-1.304	0.000	-1.279	0.000	-1.279
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.304	0.000			
• Other Adjustments	0.000	0.000	-1.279	0.000	-1.279

**Change Summary Explanation**

The FY 2025 funding request was reduced by \$1.384 million to account for the availability of prior year execution balances.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>				<b>Project (Number/Name)</b> 642812 / <i>Acquisition/System Security Engineering</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
642812: <i>Acquisition/System Security Engineering</i>	-	20.227	17.137	25.336	0.000	25.336	35.796	36.532	37.854	38.601	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Acquisition/System Security Engineering (SSE) project encompasses several activities. First, it develops DAF and DoD system security engineering and acquisition security processes, policies, and contracting language. Additionally, it explores and develops digital engineering solutions to efficiently and effectively document, map, and report the evolving cyber vulnerability landscape for individual DAF weapon systems. Second, this project refines intelligence collection and processes to provide actionable information on weapon system cyber threats. Third, it delivers cyber resiliency training, manning strategies, and CFTs, which provide weapon system cyber acquisition expertise to PEOs and PMOs to bridge cyber resiliency/security manpower, experience, and knowledge gaps. Each CFT's unique mix of expertise, knowledge, and skills is required to effectively counter weapon system cyber threats, which are innately different and more complex than "traditional" networked, Internet Protocol-based systems. Fourth, this project enables rapid response to emerging threats by identifying low Technology Readiness Level (TRL) cyber resilient technology projects, via non-traditional industry partners and DoD laboratories, for accelerated maturation activities to shorten fielding timelines for operational use. Additionally, it identifies, evaluates, and prioritizes emerging cyber techniques, products, and technologies for further development and prototyping to posture DAF weapon systems to counter emerging threats. Fifth, the project bolsters DAF cyber resiliency/security by supporting common secure environments for program offices to share information on classified weapon system cyber intelligence, threats, and vulnerabilities. Sixth, it supports Defense Industrial Base data protection efforts and DAF PEOs with program protection efforts including hardware assurance, software assurance, supply chain risk management, and other weapon system cybersecurity/resiliency activities.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Acquisition/System Security Engineering	20.227	17.137	25.336
<b>Description:</b> Evaluates, transitions, and applies cyber resiliency activities into policy, processes, and products to enhance weapon system cybersecurity.			
<b>FY 2024 Plans:</b> Continue to evolve the Acquisition/SSE requirements, processes, policies, and contracting language to influence cyber resiliency in all phases of the acquisition process. Focus and consolidate intelligence collection and processes to provide actionable information on cyber threats to the weapons system community. Transition common security environments to system and mission owners to enable program offices to collaborate/share information on classified weapon system cyber intelligence threats and vulnerabilities as well as the necessary verification and validation infrastructure (technology, hardware/software modeling and lab resources) to understand, reconcile, and program against emerging cyber resiliency attack vectors. Continue delivery of cyber expertise to PEOs through CFT manpower, continue to identify acquisition cyber resiliency training gaps, analyze required			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642812 / <i>Acquisition/System Security Engineering</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>knowledge and skill sets, and develop increasingly more technical and hands on training to support the acquisition workforce. Identify, evaluate, and prioritize emerging cyber techniques, products, and technologies for further development and prototyping to posture DAF weapon systems to counter emerging threats.</p> <p><b><i>FY 2025 Plans:</i></b> Expand Acquisition/SSE requirements, processes, policies, and contracting language to influence cyber resiliency in all phases of the acquisition process. Refine intelligence collection and processes to provide actionable information on cyber threats to the weapons system community. Develop digital engineering concepts to federate virtual environments and enable program offices to collaborate and share classified weapon system cyber intelligence threats, vulnerabilities, verification, and validation infrastructure (technology, hardware/software modeling and lab resources) with system and mission owners. Facilitate understanding, reconciliation, and adequate programming against current and emerging cyber attack vectors. Delivery of cyber expertise, mitigations, and mission risk analysis to PEOs through CFTs, and to identify acquisition cyber resiliency training gaps, analyze required knowledge and skill sets, and develop increasingly more technical and hands-on training to support the acquisition workforce. Identify, evaluate, and prioritize emerging cyber techniques, products, and technologies for further development and prototyping of digitally engineered solutions to standardize automated processes that will develop a more robust security posture for DAF weapon systems and response to emerging threats.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 funding increased compared to FY 2024 by \$8.199 million due to Air Force and Space Force organizational needs growth in cyber risk assessments, acquisition and operational requirements, and mitigation demands submissions accompanying expanded CROWS embedded CFT manning levels. Increased funding will be placed in developing a broader range of cyber resiliency technologies through enhancing methods to identify cyber threats to weapon systems, building a more robust process of assessing low TRL technologies for their potential advancement, and expanding opportunities to mature prospective technologies into mitigation solutions and enabling weapon system cyber attributes to digitally reference architectures and models, standardize cyber ontology, and trace and assess software bill of materials.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	20.227	17.137	25.336

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
When possible, activities in this effort will leverage current competitively-awarded contracts. Additional necessary contracts funded in this program element will be awarded using either competitive or sole source procedures, whichever is most appropriate. The government agency responsible for managing the program is

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642812 / <i>Acquisition/System Security Engineering</i>

the Air Force Life Cycle Management Center, Cyber Resiliency Office for Weapon Systems, Wright-Patterson Air Force Base, Ohio and Hanscom Air Force Base, Massachusetts.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642812 / <i>Acquisition/System Security Engineering</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Common Secure Environment	Various	Various : Various	-	2.600	Nov 2022	-		-		-		-	Continuing	Continuing	-
Intel collection skills to identify cyber threats to weapon systems	Various	Various : Various	-	2.000	Dec 2022	3.000	Dec 2023	3.000	Dec 2024	-		3.000	Continuing	Continuing	-
Education and Training	Various	Various : Various	-	1.600	Jan 2023	1.500	Jan 2024	1.500	Jan 2025	-		1.500	Continuing	Continuing	-
Cyber Resiliency Technologies Development	Various	Various : Various	-	6.627	Nov 2022	4.381	Nov 2023	9.230	Nov 2024	-		9.230	Continuing	Continuing	-
<b>Subtotal</b>			-	12.827		8.881		13.730		-		13.730	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Security Engineering requirements, policy and guidance documents (DTIC)	Various	DTIC : Various	-	0.456	Jan 2023	0.456	Jan 2024	0.456	Jan 2025	-		0.456	Continuing	Continuing	-
MITRE	Various	MITRE : Bedford, MA	-	4.944	Nov 2022	5.000	Nov 2023	5.150	Nov 2024	-		5.150	Continuing	Continuing	-
CMU/SEI	Various	Carnegie Mellon Univ. : Pittsburgh, PA	-	0.800	Dec 2022	0.800	Dec 2023	1.000	Dec 2024	-		1.000	Continuing	Continuing	-
Direct Cite Authority - Civ Pay	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	6.200		6.256		6.606		-		6.606	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS, Travel, Government Purchase Card	Various	Various : Various	-	1.200	Dec 2022	2.000	Dec 2023	5.000	Dec 2024	-		5.000	Continuing	Continuing	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642812 / <i>Acquisition/System Security Engineering</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Acquisition/System Security Engineering</b>																												
Transition common cyber security environments																												
Support common cyber security environments																												
Prototype and deliver enhanced system security engineering processes and products																												
Prototype and deliver cyber security design and contractual requirements																												
Prototype and deliver acquisition cyber intel analysis products and techniques																												
Develop weapon system cyber training																												
Deploy cyber focus teams																												
Maintain cyber focus teams																												
Prototype advanced cyber resiliency technology																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642812 / <i>Acquisition/System Security Engineering</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Acquisition/System Security Engineering</b>				
Transition common cyber security environments	1	2023	4	2024
Support common cyber security environments	1	2025	4	2029
Prototype and deliver enhanced system security engineering processes and products	1	2023	4	2029
Prototype and deliver cyber security design and contractual requirements	1	2023	4	2029
Prototype and deliver acquisition cyber intel analysis products and techniques	1	2023	4	2029
Develop weapon system cyber training	1	2023	4	2029
Deploy cyber focus teams	1	2023	4	2025
Maintain cyber focus teams	1	2026	4	2029
Prototype advanced cyber resiliency technology	1	2023	4	2029

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642834 / <i>Mitigations</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
642834: <i>Mitigations</i>	-	15.815	14.261	27.203	0.000	27.203	19.725	20.269	22.226	22.665	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Mitigations project prototypes mitigations to high risk cyber vulnerabilities and recommends a transition path for fielded weapon systems, subsystems, and support systems. As part of the project, the CROWS performs the engineering analysis and partners with program offices for the affected weapon systems to develop a mitigation strategy. The project also supports the CROWS to lead the non-recurring engineering effort to prototype mitigation solutions that can be fielded on multiple weapon systems and transition the mitigation to programs for implementation and sustainment. Finally, the project enables the CROWS to develop a centralized data repository that catalogs proven materiel mitigations for use across DAF weapon system program offices to maximize prototyping returns on investment.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b>Title:</b> Cyber Mitigation Prototyping	15.815	14.261	27.203
<b>Description:</b> Support and evaluate weapon systems' cyber risk assessments to identify, validate, and prioritize mitigations required for cyber vulnerabilities/susceptibilities. Partner with system owners and acquisition PMOs to develop and transition prototype mitigations.			
<b>FY 2024 Plans:</b> Narrow focus on prototyping mitigation opportunities for cyber vulnerabilities on fielded weapon systems, subsystems, and support systems in realistic, high-fidelity environments and identifying threat-informed risks/vulnerabilities. Continue to collaborate with system owners and acquisition program offices to prototype mitigation projects and implement technology transfer of prototyped solutions within the associated acquisition program office, concentrating on major weapon systems. Mature centralized data repository for mitigations addressing weapon system cyber risks and vulnerabilities. Continue to support mitigation integration requirements by translating/mapping threats to enterprise mitigation techniques using mature methodologies for weapon system common reference architectures. Manage Office of the Secretary of Defense (OSD) and National Security Agency (NSA) requests on DAF weapon systems' cyber vulnerability and mitigation activities.			
<b>FY 2025 Plans:</b> Increase prototyping mitigation activities for cyber vulnerabilities on fielded weapon systems, subsystems, and support systems in realistic, high-fidelity environments and identifying threat-informed risks/vulnerabilities. Grow collaborations with system owners and acquisition program offices to prototype mitigation projects and implement technology transfer of prototyped solutions within the associated acquisition program office, concentrating on major weapon systems. Mature centralized data repository for mitigations addressing weapon system cyber risks and vulnerabilities. Evolve mitigation integration requirements by translating/			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642834 / <i>Mitigations</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
mapping threats to mitigation techniques using mature methodologies for weapon system common reference architectures. Manage and respond to OSD's and NSA's requests on DAF weapon systems' cyber vulnerability and mitigation activities.  <b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 funding increased compared to FY 2024 by \$12.942 million due to greater emphasis and support given to weapon system cyber risk mitigation solutions including DoD Strategic Cybersecurity Program (SCP) mitigation projects and technologies that can increase the cyber resiliency of numerous lower priority weapon systems. Funding increase will broaden focus, selection opportunities, and range of possible material and non-material solutions for mitigation demonstrations and platform integration activities for high priority weapons that support combatant command Operational Plans (OPLANs) and SCP projects.				
<b>Accomplishments/Planned Programs Subtotals</b>		15.815	14.261	27.203
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b> When possible, activities in this effort will leverage current competitively-awarded contracts. Additional necessary contracts funded in this program element will be awarded using either competitive or sole source procedures. The government agency responsible for managing the program is the Air Force Life Cycle Management Center, Cyber Resiliency Office for Weapon Systems, Wright-Patterson Air Force Base, Ohio and Hanscom Air Force Base, Massachusetts.				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 4				PE 0604414F / Cyber Resiliency of Weapon Systems-ACS				642834 / Mitigations							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Material Solutions for Major Weapon Systems	Various	Various : Various	-	3.519	Jan 2023	2.271	Jan 2024	10.109	Jan 2025	-		10.109	Continuing	Continuing	-
Material Solutions for Subsystems	Various	Various : Various	-	2.204	Dec 2022	1.500	Dec 2023	6.568	Dec 2024	-		6.568	Continuing	Continuing	-
Non-Material Solutions	Various	Various : Various	-	0.834	Dec 2022	1.000	Dec 2023	4.335	Dec 2024	-		4.335	Continuing	Continuing	-
Centralized Data Repository	Various	Various : Various	-	0.404	Dec 2022	0.500	Dec 2023	1.951	Dec 2024	-		1.951	Continuing	Continuing	-
<b>Subtotal</b>			-	6.961		5.271		22.963		-		22.963	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MITRE	Various	MITRE : Bedford, MA	-	3.000	Jan 2023	3.000	Jan 2024	2.000	Jan 2025	-		2.000	Continuing	Continuing	-
Defense Technical Information Center (DTIC)	Various	DTIC : Various	-	0.240	Jan 2023	0.240	Jan 2024	0.240	Jan 2025	-		0.240	Continuing	Continuing	-
<b>Subtotal</b>			-	3.240		3.240		2.240		-		2.240	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
A&AS, Travel, Government Purchase Card	Various	Various : Various	-	5.614	Dec 2022	5.750	Dec 2023	2.000	Dec 2024	-		2.000	Continuing	Continuing	-
<b>Subtotal</b>			-	5.614		5.750		2.000		-		2.000	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	15.815		14.261		27.203		-		27.203	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642834 / <i>Mitigations</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Mitigations</b>																												
Prototype cyber mitigations on known cyber vulnerabilities																												
Identify transition plan for tested mitigations to known cyber vulnerabilities																												
Centralized Data Repository																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642834 / <i>Mitigations</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Mitigations</b>				
Prototype cyber mitigations on known cyber vulnerabilities	1	2023	4	2029
Identify transition plan for tested mitigations to known cyber vulnerabilities	1	2023	4	2029
Centralized Data Repository	1	2023	4	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>				<b>Project (Number/Name)</b> 642836 / <i>Mission Risk Analysis</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
642836: <i>Mission Risk Analysis</i>	-	6.026	5.723	7.000	0.000	7.000	7.175	7.322	7.588	7.737	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Mission Risk Analysis project discovers and analyzes cyber susceptibilities/vulnerabilities to DAF weapon systems and characterizes their risks. The project promotes the enhancement of cyber discovery methodologies and capabilities within the DAF. The focus is on assessing the gaps in technologies that can mitigate cyber vulnerabilities. This activity builds upon existing efforts that identify and mitigate cyber vulnerabilities and does not duplicate similar ongoing efforts or conduct redundant assessments on systems that have already been evaluated. The CFT members developed under the Acquisition/System Security Engineering project 642812, contribute diverse assessment data sets from various weapon system platforms to enhance the CROWS' ability to identify and validate vulnerabilities across the fielded fleet. This activity disseminates cyber risk information to inform acquisition decisions, provides feedback to focus future assessments, and also feeds into the Mitigations project 642834.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Cyber Mission Risk Analysis	6.026	5.723	7.000
<b>Description:</b> Discovers, analyzes, and coordinates information sharing of mission risk and risk discovery activities for DAF weapon systems.			
<b>FY 2024 Plans:</b> Manage coordination of cyber vulnerability assessments and validate, mature, and continue development of capabilities to provide focused assessments where required. Refine developing solutions to find, consolidate, analyze, assess, and share cyber vulnerabilities through an enterprise-level data analysis capability and data strategy. Continue to provide subject matter expertise through the Cyber Risk Analyst Working Group (CRA WG) to augment DoD cyber vulnerability assessments and ongoing discovery tasks.			
<b>FY 2025 Plans:</b> Expand coordination of cyber vulnerability assessments and validate, mature, and continue development of capabilities to provide focused assessments where required. Acquire and develop solutions to meet emerging mission requirements to find, consolidate, analyze, assess, and share cyber vulnerabilities through an enterprise-level data analysis capability and data strategy. Increase traceability between mission risk analysis vulnerability assessments and mitigations efforts. Proliferate subject matter expertise through the CRA WG to augment DoD cyber vulnerability assessments and ongoing discovery tasks.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding increased compared to FY 2024 by \$1.277 million due to the need to further the research, design, modernization, and delivery of accessible, efficient, and interoperable enterprise-wide data sharing capabilities/applications to bolster program			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642836 / <i>Mission Risk Analysis</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
system protection in response to expanded DAF-wide organizational demands. Cloud-based data strategies, cross-domain solutions, and software solutions will be explored for possible application implementation and migration into a cloud environment to improve enterprise-wide data utilization with standard, mandated, and maturing applications.			
<b>Accomplishments/Planned Programs Subtotals</b>	6.026	5.723	7.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

When possible, activities in this effort will leverage current competitively-awarded contracts. Additional necessary contracts funded in this program element will be awarded using either competitive or sole source procedures, whichever is most appropriate. The government agency responsible for managing the program is the Air Force Life Cycle Management Center, Cyber Resiliency Office for Weapon Systems, Wright-Patterson Air Force Base, Ohio and Hanscom Air Force Base, Massachusetts.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force			<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642836 / <i>Mission Risk Analysis</i>	

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Mission Risk Analysis</b>																												
Develop, institutionalize and utilize a Data Capture Repository and Analytics Team (DCRA)																												
Execute risk analysis and discovery on weapons systems and across mission areas. Leverage and augment existing and emerging assessment environments and tools.																												
Engineer solution candidates for reducing cyber risk with DAF weapon systems.																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604414F / <i>Cyber Resiliency of Weapon Systems-ACS</i>	<b>Project (Number/Name)</b> 642836 / <i>Mission Risk Analysis</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Mission Risk Analysis</i></b>				
Develop, institutionalize and utilize a Data Capture Repository and Analytics Team (DCRA)	1	2023	4	2029
Execute risk analysis and discovery on weapons systems and across mission areas. Leverage and augment existing and emerging assessment environments and tools.	1	2023	4	2029
Engineer solution candidates for reducing cyber risk with DAF weapon systems.	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604534F / <i>Adaptive Engine Transition Program (AETP)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	276.659	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	276.659
640866: <i>Advanced Engine Transition Program (AETP)</i>	-	276.659	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	276.659
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

The Adaptive Engine Transition Program (AETP) will design and manufacture multiple adaptive engine prototypes, complete component rig assessments, characterize materials, and inform manufacturing process improvements. The prototype engines will demonstrate fuel efficiency increases, thrust increases, and new component technologies by performing sea-level, altitude, and durability assessments across multiple power settings. These assessments will provide data to quantify the capability and reduce risk in areas such as thermal capacity, reliability, and supportability, among others. The program will also demonstrate adaptive engine technology can be scaled to meet military fighter engine size requirements while ensuring appropriate manufacturing and technology readiness levels by producing flight-weight prototypes. AETP test objectives are foundational risk reduction activities for the Next Generation Adaptive Propulsion (NGAP) program providing capability enabling options for Next Generation Air Dominance (NGAD) capabilities.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F. In FY 2023 3.576 million was expended for civilian pay expenses in this program element, and in FY 2024 0.000 million is forecasted for civilian pay expenses in this program element.

Prior to FY 2023, the AETP was reported in Project 643608, Advanced Engine Development in PE 0604004F, Advanced Engine Development.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 Program Element (Number/Name)</b> PE 0604534F I Adaptive Engine Transition Program (AETP)
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	286.096	0.000	0.000	0.000	0.000
Current President's Budget	276.659	0.000	0.000	0.000	0.000
Total Adjustments	-9.437	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-9.437	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

**Change Summary Explanation**

FY 2025 - No funding requested or required; program discontinued and closing out in FY 2024 with FY 2023 funding.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> Adaptive Engine Transition Program	276.659	0.000	0.000
<b>Description:</b> The Adaptive Engine Transition Program (AETP) will design and manufacture multiple adaptive engine prototypes, complete component rig assessments, characterize materials, and inform manufacturing process improvements. The prototype engines will demonstrate fuel efficiency increases, thrust increases, and new component technologies by performing sea-level, altitude, and durability assessments across multiple power settings. These assessments will provide data to quantify the capability and reduce risk in areas such as thermal capacity, reliability, and supportability, among others. The program will also demonstrate adaptive engine technology can be scaled to meet military fighter engine size requirements while ensuring appropriate manufacturing and technology readiness levels by producing flight-weight prototypes. AETP test objectives are foundational risk reduction activities for the Next Generation Adaptive Propulsion program providing capability enabling options for Next Generation Air Dominance (NGAD) capabilities.			
<b>FY 2024 Plans:</b> No FY 2024 funding required or requested; program discontinued and closing out with FY 2023 funding.			
<b>FY 2025 Plans:</b> No funding required or requested; program discontinued and closing out in FY 2024 with FY 2023 funding.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604534F / <i>Adaptive Engine Transition Program (AETP)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
FY 2025 funding did not change compared to FY 2024 due to no funding being requested in FY 2024 or FY 2025.			
<b>Accomplishments/Planned Programs Subtotals</b>	276.659	0.000	0.000

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

The Air Force awarded two limited source, cost plus incentive fee contracts back in FY 2016 to General Electric and Pratt & Whitney due to their unique qualifications to design a high performance, flight-weight adaptive turbine engine in the thrust class for AETP. Incentive categories include engine weight, performance factors, and maintainability and supportability, with specific metrics for each category incentivized. In December 2022, a new Contract Line Item was added to the General Electric contract for continued maturation of fuel efficient adaptive engine component technologies and reduce associated risk in preparation for next-generation propulsion system development for combat aircraft applications. The periods of performance for these contracts were extended to support AETP close out in FY 2024. The government agency responsible for managing this program is the Air Force Life Cycle Management Center, Propulsion Directorate, Wright-Patterson Air Force Base, Ohio.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604534F / Adaptive Engine Transition Program (AETP)	<b>Project (Number/Name)</b> 640866 / Advanced Engine Transition Program (AETP)
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Adaptive Engine Transition Program - GE	C/CPIF	GE : Evendale, OH	-	221.495	Oct 2022	-		-		-		-	0.000	221.495	-
Adaptive Engine Transition Program - PW	C/CPIF	PW : East Hartford, CT	-	40.411	Oct 2022	-		-		-		-	0.000	40.411	-
<b>Subtotal</b>			-	261.906		-		-		-		-	0.000	261.906	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Adaptive Engine Transition Program - Program Management Support	Various	Various : TBD	-	14.753	Dec 2022	-		-		-		-	Continuing	Continuing	-
Not specified.	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	14.753		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		-	276.659	-	-	-	Continuing	Continuing	N/A

**Remarks**  
 GE - General Electric PW - Pratt & Whitney  
  
 FY 2023 - Growth in Management Services costs affiliated with program office growth for acquisition planning activities and propulsion industrial base supply chain studies.  
  
 FY 2024 - No funding required or requested; program discontinued and closing out with FY 2023 funding.  
  
 FY 2025 - No funding required or requested; program discontinued and closing out in FY 2024 with FY 2023 funding.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604534F / <i>Adaptive Engine Transition Program (AETP)</i>	<b>Project (Number/Name)</b> 640866 / <i>Advanced Engine Transition Program (AETP)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Adaptive Engine Transition Program</i></b>	
Detailed Design, Engine Fabrication, Engine Assessments, Transition Planning and Design Improvements	[REDACTED]
Program Close Out	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604534F / <i>Adaptive Engine Transition Program (AETP)</i>	<b>Project (Number/Name)</b> 640866 / <i>Advanced Engine Transition Program (AETP)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Adaptive Engine Transition Program</i></b>				
Detailed Design, Engine Fabrication, Engine Assessments, Transition Planning and Design Improvements	1	2023	3	2024
Program Close Out	3	2023	4	2024

**Note**

The Adaptive Engine Transition Program (AETP) consisted of five phases: detailed design, engine fabrication, engine assessments, transition planning and design improvements. Design improvements included engine weight reduction initiatives; engine design progression related to performance, durability and other requirements; engine controls and accessories development; additional altitude testing and engine tear-down; and life cycle cost studies.

AETP deliverables include military adaptive engine detailed design parameters and models; multiple engine sets of hardware (plus spare parts); matured technologies; major rig assessment data (controls, combustor, etc.); program reviews; and technology, afford-ability, sustainability and integration studies.

The AETP is not transitioning to a program of record and closing out in FY 2024. AETP advanced materials, technologies, manufacturing, assembly, and test results are informing design activities and prototype planning for the Next Generation Adaptive Propulsion program. Adaptive engine modeling, validated by AETP performance testing, is informing planning for future next generation capabilities.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>					<b>R-1 Program Element (Number/Name)</b>							
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	-	0.000	0.000	22.667	0.000	22.667	22.832	13.033	13.419	13.705	Continuing	Continuing
640011: <i>Architecture &amp; Integration Core Ops and Gap Assessment</i>	-	0.000	0.000	9.780	0.000	9.780	9.907	10.099	10.397	10.619	Continuing	Continuing
640012: <i>Maturation and Modernization</i>	-	0.000	0.000	2.842	0.000	2.842	2.879	2.934	3.022	3.086	Continuing	Continuing
646090: <i>Hard and Deeply Buried Targets (HDBT)</i>	-	0.000	0.000	10.045	0.000	10.045	10.046	0.000	0.000	0.000	0.000	20.091

**Note**

This program, BA 4, PE 0604609F, project 640011, Architecture and Integration Core Ops, is a new start.  
 This program, BA 4, PE 0604609F, project 640011, Gap Assessments and Acquisition Planning, is a new start.  
 This program, BA 4, PE 0604609F, project , Maturation and Modernization, is a new start.  
 This program, BA 4, PE 0604609F, project , Hard and Deeply Buried Targets (HDBT), is a new start.

**A. Mission Description and Budget Item Justification**

The objective of the Requirements and Concept Maturation (RACM) program element is to identify, assess, mature and transition critical technologies to ensure warfighter capability is aligned to current and future threats. This PE ensures foundational resources for four capability development functions including stakeholder coordination and alignment; weapon system architecture construction; requirements development; and system maturation and program transition. RACM also provides robust mission and threat informed concept characterizations at all appropriate levels of classification in support of early acquisition activities and system suitability assessments. RACM activities include, but are not limited to, early systems engineering, requirements refinement, capability gap analysis, operational prototyping, risk assessment and mitigation, cost estimation, initial product support and related pre-acquisition planning and analyses supporting collaborative development planning and builds on knowledge gained from technology development and transition efforts. These tasks provide timely decision-support to senior leaders to ensure effective, affordable, and supportable capabilities become successful programs of record. RACM also supports all activities and costs needed to support the Air Force to further these types of development projects, as well as, required program support costs (PSC).

This program element may include necessary civilian pay expenses required to manage, execute, and deliver RACM capabilities for emergent or unanticipated weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605832F, 0605833F, 0605898F, 0606398F. In FY25 3.655M is forecasted for civilian pay expenses in this program element.

This program element includes FY25 and continuation funds transferred from program element 0606017F Requirements Analysis and Maturation.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>
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This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b><u>FY 2023</u></b>	<b><u>FY 2024</u></b>	<b><u>FY 2025 Base</u></b>	<b><u>FY 2025 OCO</u></b>	<b><u>FY 2025 Total</u></b>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	22.667	0.000	22.667
Total Adjustments	0.000	0.000	22.667	0.000	22.667
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	22.667	0.000	22.667

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>				<b>Project (Number/Name)</b> 640011 / <i>Architecture &amp; Integration Core Ops and Gap Assessment</i>				
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
640011: <i>Architecture &amp; Integration Core Ops and Gap Assessment</i>	-	0.000	0.000	9.780	0.000	9.780	9.907	10.099	10.397	10.619	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This program, BA 4, PE 0604609F, project 640011, Architecture and Integration Core Ops, is a new start.  
 This program, BA 4, PE 0604609F, project 640011, Gap Assessments and Acquisition Planning, is a new start.

**A. Mission Description and Budget Item Justification**

This BPAC includes, but is not limited to, activities for real-time, high-fidelity, live-virtual-constructive modeling, simulation, and analysis to evaluate stakeholder-focused warfighting capabilities, strategies, concepts of operation, tactics, emerging technologies, and human system interfaces to support and enable acquisition, test, and training for current and emerging capability concepts. This includes pre-systems acquisition planning activities, initial product support planning, developing capability concepts into high-confidence initial designs supporting dependency analysis, performance estimation, risk identification, and additional concept refinement in coordination with Air Force priorities to prioritize recommendations for science and technology investments in the critical path for Operational Initiatives (OIs) and key capability enablers. These funds may cover, but are not limited to, hardware, software, travel, personnel and other costs needed to accomplish the mission.

Engineering and Mission Assessments provides decision support for stakeholder-focused AF capability development through, but not limited to, such things as capability stakeholder engagement and management to include user, requirements, S&T and acquisition communities to ensure effective coordination aligned to USAF and DoD priorities including OIs. Emerging requirements are executed as directed by AF demand signals & priorities. These mission assessments deliver engineering, gap analysis, risk assessment, and capability development to meet decision support of the AF with regards to acquisition and operational suitability considerations to include maintainability, supportability, affordability, environmental effects and training.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver RACM capabilities for emergent or unanticipated weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605832F, 0605833F, 0605898F, 0606398F. In FY25 1.950M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Architecture and Integration Core Ops	-	0.000	5.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 640011 / <i>Architecture &amp; Integration Core Ops and Gap Assessment</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> The Architecture and Integration Directorate operational costs, include but are not limited to, supporting modeling, simulation and analysis infrastructure, networking equipment, facility operations and resources in support of constructive and virtual environments. Network and integration facilities allow for analysis and development needed to provide cutting-edge technology across multiple security levels to meet the needs of the Air Force. This includes project support and operational support costs.</p> <p><b>FY 2024 Plans:</b> N/A</p> <p><b>FY 2025 Plans:</b> Continue to execute pre-systems acquisition activities. Ensure equipment, facility, and lab operations are available across multiple security levels to develop capability concepts into high-level initial designs and/or initial prototypes supporting dependency analysis, performance estimation, risk identification, and additional concept refinement in coordination with Air Force, DoD and acquisition leadership. Develop prioritized recommendations for science and technology investments in the critical path OIs and key capability enablers.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 increased compared to FY 2024 by \$5.000 million due to the standup of the Architecture and Integration Core Ops project.</p>				
<p><b>Title:</b> Gap Assessments and Acquisition Planning</p> <p><b>Description:</b> Provides a core AF capability to deliver stakeholder-focused development analysis and decision support to the Air Force with current year and future initiatives by performing technical analysis, risk assessments, concept development, engineering support, integration, and software solutions leveraging agile approaches. This core capability provides increased acquisition maturation and initiation of high-confidence programs of record. Tasks include but are not limited to a coordinated and program-informed modeling, simulation and analysis along with agile software development, that complements and supports other activities associated with early acquisition, and the assessment of readiness of concepts and capabilities for acquisition efforts. Provides acquisition decision support in consideration of, but not limited to, produceability, reliability, affordability, environmental effects, and training requirements. Includes a developmental security operation focused responsiveness to emerging AF requirements. This includes project support and operational support costs.</p> <p><b>FY 2024 Plans:</b> N/A</p> <p><b>FY 2025 Plans:</b></p>		-	0.000	4.780

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 640011 / <i>Architecture &amp; Integration Core Ops and Gap Assessment</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Continue to provide capability development and analysis expertise to improve support to AF and acquisitions communities by increasing Concept Development/Developmental Planning (CD/DP) to deliver timely data that informs and enables the future of the AF. This includes, but is not limited to, hardware, software and personnel required to execute the analysis and development needed to provide state-of-the-art solutions.  <b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 increased compared to FY 2024 by \$4.780 million due to the standup of the Gap Assessments and Acquisition Planning project.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	0.000	9.780

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Acquisition strategy will be tailored for each individual Concept Development and Development planning project directed by the Air Force Stakeholders.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 4				PE 0604609F / Requirements Analysis & Concept Maturation				640011 / Architecture & Integration Core Ops and Gap Assessment							
<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Concept Development and Maturation	TBD	TBD : TBD	-	-		-		2.332	Jan 2025	-		2.332	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		2.332		-		2.332	Continuing	Continuing	N/A
<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA	Various	Not specified. : TBD	-	-		-		5.000	Jan 2025	-		5.000	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		5.000		-		5.000	Continuing	Continuing	N/A
<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	TBD	Not specified. : TBD	-	-		-		0.498	Jun 2025	-		0.498	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.498		-		0.498	Continuing	Continuing	N/A
<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Civ Pay	TBD	AFLCMC/FZA : WPAFB, OH	-	-		-		1.950	Oct 2024	-		1.950	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		1.950		-		1.950	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	-		-		9.780		-		9.780	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 640011 / <i>Architecture &amp; Integration Core Ops and Gap Assessment</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Architecture and Integration Core Ops</b>	
Developmental Evaluation	
<b>Gap Assessments and Acquisition Planning</b>	
CD/DP	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 640011 / <i>Architecture &amp; Integration Core Ops and Gap Assessment</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Architecture and Integration Core Ops</i></b>				
Developmental Evaluation	2	2025	4	2029
<b><i>Gap Assessments and Acquisition Planning</i></b>				
CD/DP	1	2025	4	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>				<b>Project (Number/Name)</b> 640012 / <i>Maturation and Modernization</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
640012: <i>Maturation and Modernization</i>	-	0.000	0.000	2.842	0.000	2.842	2.879	2.934	3.022	3.086	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This program, BA 4, PE 0604609F, project , Maturation and Modernization, is a new start.

**A. Mission Description and Budget Item Justification**

Provides a core AF capability to execute prototyping efforts for acquisition and technological risk reduction to provide rapid results for the Air Force and increased acquisition maturation and initiation of high-confidence programs of record. This also provides for other activities needed to mature and modernize concepts and systems to transition to traditional program offices. These activities are executed across multiple security levels and include but are not limited to, developmental security operations, agile software development and integration, prototyping, testing, field assessments, concept maturation, initial product support planning, prototype deployments to operational locations, to deliver decision quality data and move concepts from R&D to acquisition program offices.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver RACM capabilities for emergent or unanticipated weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605832F, 0605833F, 0605898F, 0606398F. In FY25 0.550M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Maturation and Modernization	-	0.000	2.842
<b>Description:</b> Provides a core AF capability to execute prototyping efforts for acquisition and technological risk reduction to provide rapid results for the Air Force and increased acquisition maturation and initiation of high-confidence programs of record. This also provides for other activities needed to mature and modernize concepts and systems to transition to traditional program offices. These activities are executed across multiple security levels and include but are not limited to, developmental security operations, agile software development and integration, system prototyping, testing, field assessments, concept maturation, prototype deployments to operational locations, to deliver decision quality data and move concepts from a pure R&D activity to acquisition program offices.			
<b>FY 2024 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 640012 / <i>Maturation and Modernization</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
N/A			
<p><b><i>FY 2025 Plans:</i></b> Assess and continue to support Air Force capability development through prototyping efforts needed to inform critical reviews of acquisition factors in regard to reliability, availability, compatibility and other elements. Continue to support Air Force and DoD level guidance on prototyping needs and push for transitioning technologies to program offices or back to the research labs. Continue to exploit agile software practices to provide prototype capabilities to decision makers. Continue to leverage existing projects and infrastructure to ensure Air Force and warfighter capability development needs are met.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 increased compared to FY 2024 by \$2.842 million due to the standup of the Maturation and Modernization project.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	-	0.000	2.842

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The acquisition strategy will be tailored to each individual Maturation and Modernization project.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 4				PE 0604609F / Requirements Analysis & Co ncept Maturation				640012 / Maturation and Modernization							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Maturation & Modernization	C/CPAF	Not specified. : TBD	-	-		-		1.317	Jan 2025	-		1.317	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		1.317		-		1.317	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support Costs	C/CPAF	Not specified. : TBD	-	-		-		0.825	Jan 2025	-		0.825	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.825		-		0.825	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test	Various	Not specified. : TBD	-	-		-		0.150	Jul 2025	-		0.150	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.150		-		0.150	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Civilian Pay	Allot	Not specified. : TBD	-	-		-		0.550	Jan 2025	-		0.550	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.550		-		0.550	Continuing	Continuing	N/A
			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract				
<b>Project Cost Totals</b>			-	-	-	2.842	-	2.842	Continuing	Continuing	N/A				
<b>Remarks</b>															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 640012 / <i>Maturation and Modernization</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Maturation and Modernization</i></b>	
Development Evaluation	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 640012 / <i>Maturation and Modernization</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Maturation and Modernization</i></b>				
Development Evaluation	2	2025	4	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>				<b>Project (Number/Name)</b> 646090 / <i>Hard and Deeply Buried Targets (HDBT)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
646090: <i>Hard and Deeply Buried Targets (HDBT)</i>	-	0.000	0.000	10.045	0.000	10.045	10.046	0.000	0.000	0.000	0.000	20.091
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This program, BA 4, PE 0604609F, project , Hard and Deeply Buried Targets (HDBT), is a new start.

**A. Mission Description and Budget Item Justification**

The objective of this Air Force-led, DoD-wide effort for Hard and Deeply Buried Targets (HDBT), includes, but is not limited to, an understanding of how ensembles of current and potential future strike capabilities can hold at risk the growing number of sophisticated complexes that are protected, deceptive, and prolific as reported by Intelligence analysts. Analysis will be informed by campaign level warfighting contexts including competing demands for priority platforms and effects. This analysis will ultimately support, but not be limited to, ongoing program planning reviews and be a basis for initiating specific concept Analyses of Alternatives. This program supports all required activities to complete Concept Development and Development Planning (CD/DP) for HDBT up to standing up a Program of Record (PoR). This includes pre-systems acquisition planning activities, initial product support, risk identification, and additional concept refinement in coordination with Air Force priorities to prioritize recommendations for science and technology investments in the critical path for Operational Initiatives (OIs) and key capability enablers. These funds may cover, but are not limited to, hardware, software, travel, personnel and other costs needed to accomplish the mission.

This program is in Budget Activity 4, RDT&E Management Support because this budget activity includes, but is not limited to, research, development, concept development and maturation, test and evaluation efforts, prototyping and funds to sustain and/or modernize the installations or operations required for general research, development, test and evaluation. This also includes program support and operational support costs necessary to further the program up until the standup of a PoR.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver HDBT capabilities for emergent or unanticipated weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 605827F, 0605828F, 605829F, 0605832F, 0605833F, 0605898F, 0606398F. In FY25 1.200M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Hard and Deeply Buried Targets (HDBT)	-	0.000	10.045
<b>Description:</b> HDBT includes, but is not limited to the development of an "Ensemble Analysis" to inform, shape, and guide follow-on efforts. This includes program support and operational support costs.			
<b>FY 2024 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 646090 / <i>Hard and Deeply Buried Targets (HDBT)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
N/A				
<b>FY 2025 Plans:</b> Start activities to conduct an ensemble analysis for HDBT.				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 increased compared to FY2024 by \$10.045 million due to the standup of the HDBT program.				
<b>Accomplishments/Planned Programs Subtotals</b>		-	0.000	10.045
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b>				
This program's acquisition strategy is still being finalized. Currently, an ensemble analysis is being implemented in FY25 to inform the Air Force to further identify capability gaps and finalize the program acquisition strategy.				

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2025 Air Force</b>												<b>Date: March 2024</b>			
<b>Appropriation/Budget Activity</b> 3600 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>				<b>Project (Number/Name)</b> 646090 / <i>Hard and Deeply Buried Targets (HDBT)</i>							
<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Ensemble Analysis and CD/DP	TBD	TBD : TBD	-	-		-		4.895	Jan 2025	-		4.895	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		4.895		-		4.895	Continuing	Continuing	N/A
<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Program Support Costs	Various	Not specified. : TBD	-	-		-		2.100	Jan 2025	-		2.100	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		2.100		-		2.100	Continuing	Continuing	N/A
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Test	C/CPAF	Not specified. : TBD	-	-		-		0.950	Jun 2025	-		0.950	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.950		-		0.950	Continuing	Continuing	N/A
<b>Management Services (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Civilian Pay	Allot	Not specified. : TBD	-	-		-		2.100	Jan 2025	-		2.100	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		2.100		-		2.100	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	-		-		10.045		-		10.045	Continuing	Continuing	N/A
<b>Remarks</b>															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 646090 / <i>Hard and Deeply Buried Targets (HDBT)</i>

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>HDBT</b>																												
Ensemble Analysis	████████████████████																											
Concept Development/Development Planning													████████████████████															

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604609F / <i>Requirements Analysis &amp; Concept Maturation</i>	<b>Project (Number/Name)</b> 646090 / <i>Hard and Deeply Buried Targets (HDBT)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>HDBT</i></b>				
Ensemble Analysis	2	2025	4	2025
Concept Development/Development Planning	1	2026	4	2026

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604668F <i>I Joint Transportation Management System (JTMS)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	27.758	37.026	174.723	0.000	174.723	156.381	239.158	227.638	179.024	0.000	1,041.708
646682: <i>JTMS DEVELOPMENT</i>	-	27.758	37.026	174.723	0.000	174.723	156.381	239.158	227.638	179.024	0.000	1,041.708
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

This initiative provides an overarching solution to reform functional financial and logistics capabilities within the Transportation of Things and is aimed at the third pillar of the 2022 National Defense Strategy—business reform. The program will deliver integrated, streamlined transportation and financial data and processes, supporting the Joint Deployment and Distribution Enterprise (JDDE). Services and DoD agencies will have a system to automate the linkage between transportation action tasks and transportation business related tasks across the full spectrum of financial activity, from obligations through general ledger accounting. It will also close all major gaps that prevent auditability within the transportation spend across DoD and achieve significant gains in two of the focus areas of the Department of Defense's Data Strategy: Senior Leader Decision Support and Business Analytics. Through the JTMS's ability to seamlessly integrate financial data and information with transportation operations in the joint domain, it will give JDDE users the ability to see to the transactional level in a resilient transportation network while reducing duplicate capabilities.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system like capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023 \$3M was expended for civilian pay expenses in this program element, and in FY2024 \$8M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	27.758	37.026	0.000	0.000	0.000
Current President's Budget	27.758	37.026	174.723	0.000	174.723
Total Adjustments	0.000	0.000	174.723	0.000	174.723
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	174.723	0.000	174.723

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604668F <i>I Joint Transportation Management System (JTMS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> Joint Transportation Management System Acquisition/Development	27.758	37.026	174.723
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**Description:** Engage in key pre-acquisition activities to support a projected FY25 prime integrator award including but not limited to drafting or executing key management plans and the programmatic activities required to inform the acquisition such as Project Management, Configuration Management, Risk Management, Release Management, Testing, and Training. Solution analysis and recommendations to the Functional Sponsor as a result of a completed analysis of alternatives to support the projected prime integrator award. Procure and establish the appropriate hosting environment lead time away to support the chosen materiel solution and initiate accreditation activities per the required Risk Management Framework (RMF) classification.

**FY 2024 Plans:**

Continue key pre-acquisition activities to support a projected FY25 prime integrator award including but not limited to drafting or executing key management plans and the programmatic activities required to inform the acquisition and implementation; Activities underway include:

- 1) Document as-is architectures across CONUS freight, Sealift, Airlift, and OCONUS freight lines of business
- 2) Business Process Reengineering across CONUS freight, Sealift, Airlift, and OCONUS freight lines of business
- 3) Organizational Change Management
- 4) Auditability Systems Requirements Definition
- 5) Market Research and Acquisition/Procurement Strategy Development

**FY 2025 Plans:**

Continuing activities and capturing the enterprise-level "as-is" distribution processes to increase overall JDDE understanding and to assist JTMS impact assessment and business process reengineering. Also continuing to include studies and analysis to support both current program planning and execution and future program planning.

- 1) Document as-is architectures across Sealift, Airlift, and OCONUS freight lines of business
- 2) Business Process Reengineering across CONUS freight, Sealift, Airlift, and OCONUS freight lines of business
- 3) Organizational Change Management
- 4) Auditability Systems Requirements Definition
- 5) Prime Integrator Phase-In activities
- 6) Stand up and secure cloud hosting environment
- 7) Begin material solution business process reengineering for CONUS freight line of business
- 8) Design/configure material solution to support lines of operation under CONUS freight
- 9) Procure ERP software licensing

**FY 2024 to FY 2025 Increase/Decrease Statement:**

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604668F <i>I Joint Transportation Management System (JTMS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
With the approved acquisition memorandum from OUSD A&S, the JTMS received funding to pursue a material solution to solve auditability across the JDDE.			
<b>Accomplishments/Planned Programs Subtotals</b>	27.758	37.026	174.723

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

Follow the DoD Instruction 5000.75 process for a Defense Business System. The program will utilize various contracts (where appropriate) to reform financial and transportation processes within the Transportation of Things.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604668F / Joint Transportation Management System (JTMS)	<b>Project (Number/Name)</b> 646682 / JTMS DEVELOPMENT
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JTMS Contract and software procurement	C/TBD	TBD : Scott AFB, IL	-	-		-		138.173	Apr 2025	-		138.173	Continuing	Continuing	9.773
<b>Subtotal</b>			-	-		-		138.173		-		138.173	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Pre Acquisition Support	C/Various	TBD : Scott AFB, IL	-	12.352	Oct 2022	10.858	Oct 2023	13.350	Oct 2024	-		13.350	Continuing	Continuing	6.460
<b>Subtotal</b>			-	12.352		10.858		13.350		-		13.350	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Joint Program Office Support	C/Various	TBD : Scott AFB, IL	-	15.406	Oct 2022	26.168	Oct 2023	23.200	Oct 2024	-		23.200	Continuing	Continuing	20.964
<b>Subtotal</b>			-	15.406		26.168		23.200		-		23.200	Continuing	Continuing	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	27.758	37.026	174.723	-	174.723	Continuing	Continuing	N/A

**Remarks**  
In FY23, \$17.5M was returned to Air Force for higher information and technology priorities.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604668F / <i>Joint Transportation Management System (JTMS)</i>	<b>Project (Number/Name)</b> 646682 / <i>JTMS DEVELOPMENT</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Pre-Acquisition</i></b>	
Pre-Acquisition Activities	
<b><i>Program Acquisition</i></b>	
JTMS Development	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604668F / <i>Joint Transportation Management System (JTMS)</i>	<b>Project (Number/Name)</b> 646682 / <i>JTMS DEVELOPMENT</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Pre-Acquisition</i></b>				
Pre-Acquisition Activities	1	2023	2	2025
<b><i>Program Acquisition</i></b>				
JTMS Development	3	2025	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	27.586	31.833	4.840	0.000	4.840	5.012	5.114	5.300	5.405	Continuing	Continuing
640211: <i>GLOBAL ACCESS</i>	-	7.071	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.071
640212: <i>C2/OPTIMIZATION/ MODELING AND SIMULATION</i>	-	15.587	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.587
640213: <i>CYBER</i>	-	4.928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.928
640216: <i>Deployment and Distribution Innovation</i>	-	0.000	31.833	4.840	0.000	4.840	5.012	5.114	5.300	5.405	Continuing	Continuing

**Note**  
 Project 640211, 640212, 640213 will be consolidated into one project 640216 starting in FY24.  
 FY25 and beyond ~\$27M of BA4 BPAC 640216 shifted to new BA3 BPAC 630004.

**A. Mission Description and Budget Item Justification**  
 Provides for the collaborative development, integration, field demonstration and assessment of contested environment Joint Deployment and Distribution Enterprise (JDDE) and Joint Petroleum Enterprise (JPE) capabilities. Needed capabilities include: innovation in delivery methods, seaport and airfield improvements, inventory/cargo management, materiel handling, cargo/container security, secure collaboration with commercial/interagency/coalition partners, and distributed global mobility C4  
 This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	27.586	31.833	32.544	0.000	32.544
Current President's Budget	27.586	31.833	4.840	0.000	4.840
Total Adjustments	0.000	0.000	-27.704	0.000	-27.704
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-27.704	0.000	-27.704

**Change Summary Explanation**

FY25 and beyond \$27M of BA4 BPAC 640216 was ZBT to new BA3 BPAC 630004

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640211 / <i>GLOBAL ACCESS</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
640211: <i>GLOBAL ACCESS</i>	-	7.071	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.071
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
ZBT has been approved to consolidate BPACs 640211, 640212, and 640213 into one BPAC 640216

**A. Mission Description and Budget Item Justification**

This program provides for the development, integration, demonstration and detailed assessment of DOD procedures/technologies targeted at optimizing throughput at the nodes as well as across the conduits of the deployment and distribution supply chains, from origin to point of use as well as return. Needed capabilities include inventory/cargo management, materiel handling innovations, improved physical node access, port throughput improvements, innovative delivery methods (e.g., precision airlift, autonomous re-supply), and cargo/container security. This project addresses required mission support to combatant commanders and other customers of DOD's distribution and transportation systems in the area of deployment/distribution velocity management, manned/unmanned systems to the point of effect, and increased global reach in austere/anti-access environments.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.0M was expended for civilian pay expenses in this program element and in FY24, 0.0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<p><b>Title:</b> Petroleum Undersea Sustainment Hose</p> <p><b>Description:</b> Provide an agile, submersible over-the-shore conduit that can be pre-positioned or immediately employed from vessels of opportunity such as a commercial offshore supply vessel (OSV).</p> <p><b>FY 2024 Plans:</b> See BPAC 640216</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>	0.260	0.000	-
<p><b>Title:</b> Airdrop System - Precision Extended Glide</p> <p><b>Description:</b> Demonstrate a long range powered parafoil system to reduce risk to delivery aircraft</p> <p><b>FY 2024 Plans:</b></p>	0.300	0.000	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640211 / <i>GLOBAL ACCESS</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Collision Avoidance and Navigation Insight System/Aerial Port of the Future		1.000	0.000	-
<b>Description:</b> Autonomous Technologies applied to the 60K Tunner to improve throughput and safety				
<b>FY 2024 Plans:</b> Project ends in FY23				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Submersible Matting		0.064	0.000	-
<b>Description:</b> Develop a submersible matting system (SUBMAT) to facilitate mobility across the shoreline and wet/dry gaps by combining current soil stability technology and mobility matting into a single product.				
<b>FY 2024 Plans:</b> Project ends in FY23				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Rapid Available Interface for trans-Loading		0.500	0.000	-
<b>Description:</b> Provides a process to rapidly assess the condition, design acceptable repairs and delivers pre-kitted rail repair and retrofit solutions. The standardized repair kits allows for the development of Tactics, Techniques and Procedures (TTPs) for each repair that can be scaled to address a range of damages.				
<b>FY 2024 Plans:</b> See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Repair and Retrofit of Railway Systems		0.750	0.000	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640211 / <i>GLOBAL ACCESS</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> The standardized repair kits allows for the development of Tactics, Techniques and Procedures (TTPs) for each repair that can be scaled to address a range of damages.</p> <p><b>FY 2024 Plans:</b> Project ends FY23</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>				
<p><b>Title:</b> Drone Supported Surface Deployment</p> <p><b>Description:</b> Determine the suitability of using modern drones and drone mapping technology for capturing data for input to systems such as the Integrated Computerized Deployment System (ICODES) and the Transportation Geospatial Information System (TGIS)</p> <p><b>FY 2024 Plans:</b> Currently no FY24 funding/plans</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>		0.350	0.000	-
<p><b>Title:</b> Buoyant Roll On/Roll Off Interface Kit</p> <p><b>Description:</b> Prototype consisting of the RO/RO ramp to interface to a commercial supply vessel and a section of floating causeway and ancillary equipment sufficient to conduct a limited operational assessment</p> <p><b>FY 2024 Plans:</b> See BPAC 640216</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>		0.400	0.000	-
<p><b>Title:</b> 35 Thousand Foot Airdrop</p> <p><b>Description:</b> Develop capabilities to airdrop from 35 thousand feet to increase aircraft standoff range from threat.</p> <p><b>FY 2024 Plans:</b> See BPAC 640216</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>		0.200	0.000	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640211 / <i>GLOBAL ACCESS</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
N/A				
<b>Title:</b> Replenishment from Ships to Point of Need Delivery <b>Description:</b> Unmanned system launched from ships and capable of carrying supplies up to 100 miles inland. <b>FY 2024 Plans:</b> Project ends FY23 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A		0.525	0.000	-
<b>Title:</b> Use of Dual Row Airdrop System with Joint Light Tactical Vehicle <b>Description:</b> Increasing the strength of C-17 dual row rails to enable dropping the JLTV <b>FY 2024 Plans:</b> Project ends in FY23 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A		0.300	0.000	-
<b>Title:</b> Enhanced Vision Navigation for Joint Precision Airdrop System <b>Description:</b> Advanced technologies to improve airdrop capabilities to the warfighter. <b>FY 2024 Plans:</b> See BPAC 640216 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A		0.531	0.000	-
<b>Title:</b> Aerial Delivery Platform <b>Description:</b> Platform for air dropping mutiple vehicles <b>FY 2024 Plans:</b> See BPAC 640216 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>		0.499	0.000	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640211 / <i>GLOBAL ACCESS</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
N/A				
<b>Title:</b> Modular Autonomous Ready Dynamic Positioning System <b>Description:</b> Position for sealift lighterage assets  <b>FY 2024 Plans:</b> See BPAC 640216  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A		0.387	0.000	-
<b>Title:</b> Spectrum Exploitation for Emissions Control <b>Description:</b> Mitigate/reduce risks of emissions detection from civilian/commercial vessels  <b>FY 2024 Plans:</b> See BPAC 640216  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A		0.300	0.000	-
<b>Title:</b> Resilient Expeditionary Agile Littoral Logistics <b>Description:</b> Transfer of fuel ashore from various conveyances from off-shore platform  <b>FY 2024 Plans:</b> Project ends FY23  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A		0.705	0.000	-
<b>Accomplishments/Planned Programs Subtotals</b>		7.071	0.000	-
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640211 / <i>GLOBAL ACCESS</i>

**D. Acquisition Strategy**

Requirements for joint deployment and distribution enterprise technology enhancements are annually identified, validated and prioritized by the Joint Deployment & Distribution Enterprise (JDDE) community. Pursuit of the development of new capabilities to meet these requirements is managed by the United States Transportation Command (USTRANSCOM). Prototype products, once evaluated by the users, are spirally transitioned by the operational community.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640211 / <i>GLOBAL ACCESS</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Deployment and Distribution</i></b>	
Integrated Logistics Support	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640211 / <i>GLOBAL ACCESS</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Deployment and Distribution</i></b>				
Integrated Logistics Support	1	2023	4	2023

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>				<b>Project (Number/Name)</b> 640212 / <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
640212: <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>	-	15.587	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.587
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

ZBT has been approved to consolidate BPACS 64021, 640212, 640213 and 640215 into one BPAC 640216

**A. Mission Description and Budget Item Justification**

This program provides for the development, integration, demonstration and detailed assessment of capabilities which improve deployment, distribution and supply chain decision-making/collaboration (e.g., planning stage to real-time execution/retrograde operations) without need for highly specialized operators. Projects in this area address the following: decision support tools, distribution process simulations/analytics, distribution demand forecasting/execution monitoring, automated decision-maker support (e.g., queuing, alerting, courses of action), automated status monitoring with information fusion to include drilldown capability, and resilient Command & Control (C2) infrastructure capabilities. Current planning, forecasting, and collaboration capabilities do not permit full synchronization of people, processes and assets to execute planned operations. Automated tools must be able to dynamically analyze/predict demand and provide input to advanced distribution planning systems to include the capability for Combatant Commanders to manage theater transportation operations from the port of debarkation to the point of need. Transportation information exchange across the DOD is inhibited by disparate systems, multiple data standards and insufficient interfaces. The ability to rapidly determine the impact of any delays/changes and conduct "what-if" impact assessments on the closure of force packages is required. This project addresses the required mission support to combatant commanders and other customers in the area of C2, Optimization, and Modeling and Simulations. The Joint Transportation Management System (JTMS) will develop and configure a commercial-off-the-shelf (COTS) transportation/financial management product to deliver DoD enterprise-wide end-to-end transportation and transportation-related financial business process reform.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY21 0M was expended for civilian pay expenses in this program element (PE). In FY22, Joint Transportation Management System (JTMS) 15.5M was placed in this PE, for civilian pay expenses, until a separate PE could be established. No other FY will include civilian pay expenses in this PE.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> TRANSCOM Innovation	5.596	0.000	-
<b>Description:</b> Rapidly develop and integrate technology solutions for the enterprise			
<b>FY 2024 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640212 / <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Iron Spider		0.891	0.000	-
<b>Description:</b> Support plans that are released on unclassified, untrusted commercial networks in order to solicit and contract with vendors capable of supplying theater forces.				
<b>FY 2024 Plans:</b> See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Safety Analysis of Modified Midwest Guardrail		0.350	0.000	-
<b>Description:</b> Research and physical testing to gather and analyze data for improving Entry Control Facilities (ECF) design and operations, improve road safety on installations, and reduce overall costs				
<b>FY 2024 Plans:</b> Project ends FY23				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Data Lake		1.675	0.000	-
<b>Description:</b> Develop and demonstrate the capability that allows incongruent data to be brought together to provide automated decision support.				
<b>FY 2024 Plans:</b> No current project funding/plans				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> End-to-End Deployment and Distribution Modeling		0.300	0.000	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640212 / <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Provide an integrated deployment/distribution environment to provide continuous and optimal balancing of total demand verse capacity from planning through mission execution.</p> <p><b>FY 2024 Plans:</b> No current funding/plans</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>				
<p><b>Title:</b> Massachusetts Institute of Technology Lincoln Labs</p> <p><b>Description:</b> Partnership with MIT-LL to research efforts to improve enterprise operational architecture supporting high-end analytics, integrated information technology/data structures, understanding of cloud capabilities and multi-level cyber security defense.</p> <p><b>FY 2024 Plans:</b> See BPAC 640216</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>		1.698	0.000	-
<p><b>Title:</b> Modeling &amp; Simulation Innovation</p> <p><b>Description:</b> Select student research/faculty-assisted projects (e.g., Joint Transportation Asset Scheduling Kit, Next Generation Cargo Capability, Applying Post Modern Portfolio Theory to Mitigate Risk in International Shipping, Optimal CH-47/C-130 Workload Balance, Remotely Piloted Aircraft Performing Airdrop Mission).</p> <p><b>FY 2024 Plans:</b> Collaboration partnership with AFIT for student research</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>		0.105	0.000	-
<p><b>Title:</b> Infrastructure Information Confidence Model</p> <p><b>Description:</b> Inform decision makers of the quality of primary and alternate data sources they are using to make decisions</p> <p><b>FY 2024 Plans:</b></p>		0.341	0.000	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640212 / <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Ends in FY23				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Aerial Delivery and Autonomous Deployment of Unmanned Vehicles <b>Description:</b> Develop ability to deliver unmanned systems from existing airdrop systems <b>FY 2024 Plans:</b> See BPAC 640216 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A		1.010	0.000	-
<b>Title:</b> Program Execution <b>Description:</b> Provide technical assistance and program management support to the USTRANSCOM RDT&E Program. <b>FY 2024 Plans:</b> See BPAC 640216 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A		1.150	0.000	-
<b>Title:</b> Analyzer Driven Data Integrity <b>Description:</b> Increase data integrity <b>FY 2024 Plans:</b> See BPAC 640216 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A		0.238	0.000	-
<b>Title:</b> Strategic Theater Orchestration and Resource Management <b>Description:</b> Ability to manage theater lift assets <b>FY 2024 Plans:</b>		0.615	0.000	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640212 / <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Risk Assessment and Vetting for the Enterprise <b>Description:</b> Assessing deployment distribution risk		0.700	0.000	-
<b>FY 2024 Plans:</b> See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Component Level Operational Decision Advantage <b>Description:</b> develop detailed decision support tool		0.500	0.000	-
<b>FY 2024 Plans:</b> See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> JDDE Mission Assurance Coordinator <b>Description:</b> Develop a JDDE-wide method for mission coordination		0.418	0.000	-
<b>FY 2024 Plans:</b> See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Accomplishments/Planned Programs Subtotals</b>		15.587	0.000	-
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640212 / <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>

**D. Acquisition Strategy**  
Requirements for joint deployment and distribution enterprise technology enhancements are annually identified, validated and prioritized by the Joint Deployment & Distribution Enterprise (JDDE) community. Pursuit of the development of new/improved capabilities to meet these requirements is managed by the United States Transportation Command (USTRANSCOM). Prototype products, once evaluated by the users, are spirally transitioned by the operational community.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640212 / <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integrated Logistics Support	Various	Various : Belleville, IL	-	15.587	Nov 2022	-		-		-		-	0.000	15.587	-
<b>Subtotal</b>			-	15.587		-		-		-		-	0.000	15.587	N/A

**Remarks**  
Funds will be realigned within PE.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	15.587	-	-	-	-	0.000	15.587	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640212 / <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Deployment and Distribution</i></b>	
Integrated Logistics Support	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640212 / <i>C2/OPTIMIZATION/MODELING AND SIMULATION</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Deployment and Distribution</i></b>				
Integrated Logistics Support	1	2023	4	2023

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640213 / <i>CYBER</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
640213: <i>CYBER</i>	-	4.928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.928
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

ZBT has been approved to consolidate BPACS 64021, 640212, 640213 and 640215 into one BPAC 640216

**A. Mission Description and Budget Item Justification**

This program provides for the development, integration, demonstration and detailed assessment of capabilities to ensure USTRANSCOM mission assurance is in a persuasive/dynamic cyber environment. USTRANSCOM requires the procedures/technologies to improve cyber surveillance and control of networks across multiple domains and the ability to continue critical network operations in contested unclassified and classified network environments. The Command also needs the ability to differentiate between valid/unauthorized users and determine/quantify the trustworthiness of hardware/software systems. Additionally USTRANSCOM must have the ability to rapidly analyze & correlate data regarding malicious activities, select/evoke real-time defense actuators, perform automated reasoning capabilities that address data quality issues, and the ability to rapidly return to a known/safe operating state.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.0M was expended for civilian pay expenses in this program element and in FY24, \$0.0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<p><b>Title:</b> Oversight</p> <p><b>Description:</b> Enable continuous tracking of adversary cyber groups and campaigns targeting USTRANSCOM and USINDOPACOM enterprise and their partners</p> <p><b>FY 2024 Plans:</b> See BPAC 640216</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>	1.330	0.000	-
<p><b>Title:</b> Cyber Mission Assurance Technologies</p> <p><b>Description:</b> Near real-time understanding of the operational impact of cyber risks, threats, and disruptions.</p> <p><b>FY 2024 Plans:</b></p>	2.598	0.000	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640213 / <i>CYBER</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Title:</b> Lincoln Labs		1.000	0.000	-
<b>Description:</b> Partnership with MIT-LL to research efforts to improve enterprise operational architecture supporting high-end analytics, integrated information technology/data structures, understanding of cloud capabilities and multi-level cyber security defense.				
<b>FY 2024 Plans:</b> See BPAC 640216				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A				
<b>Accomplishments/Planned Programs Subtotals</b>		4.928	0.000	-
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b>				
Requirements for joint deployment and distribution enterprise technology enhancements are annually identified, validated and prioritized by the Joint Deployment & Distribution Enterprise (JDDE) community. Pursuit of the development of new/improved capabilities to meet these requirements is managed by the United States Transportation Command (USTRANSCOM). Prototype products, once evaluated by the users, are spirally transitioned by the operational community.				



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640213 / <i>CYBER</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Deployment and Distribution</i></b>	
Integrated Logistics Support	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640213 / <i>CYBER</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Deployment and Distribution</i></b>				
Integrated Logistics Support	1	2023	4	2023

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>				<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
640216: <i>Deployment and Distribution Innovation</i>	-	0.000	31.833	4.840	0.000	4.840	5.012	5.114	5.300	5.405	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This program, BA 4, PE 0604776F, project , Airdrop Mission Planner Multiservice Interoperability, is a new start.

FY24 ZBT consolidates BPACS 640211, 640212, 640213 into BPAC 640216.

27M of BPAC 060216 being shifted to new BA3 BPAC 630004 Deployment and Distribution Deployment & Prototyping in FY25. Same shift in FY26 and beyond.

**A. Mission Description and Budget Item Justification**

Provides for the collaborative development, integration, field demonstration and assessment of contested environment Joint Deployment and Distribution Enterprise (JDDE) and Joint Petroleum Enterprise (JPE) capabilities. Needed capabilities include: innovation in delivery methods, seaport and airfield improvements, inventory/ cargo management, materiel handling, cargo/container security, secure collaboration with commercial/interagency/coalition partners, and distributed global mobility C4

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Transportation Innovation	-	0.438	0.892
<b>Description:</b> Research technologies to support the JDDE			
<b>FY 2024 Plans:</b> Research various technology solutions to support the JDDE			
<b>FY 2025 Plans:</b> FY25 plans in BPAC 630004			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY25 in BPAC 630004			
<b>Title:</b> Data Lakes	-	0.904	0.000
<b>Description:</b> Various efforts to maximize data, detect anomalies, and support decision support			
<b>FY 2024 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Develop zero trust and automated mapping software <b>FY 2025 Plans:</b> FY25 in BPAC 630004 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY25 in BPAC 630004				
<b>Title:</b> Airdrop Mission Planner Multiservice Interoperability <b>Description:</b> Develop Android Tactical Assault Kit (ATAK) and Windows Tactical Assault Kit (WINTAK) for United States Army (USA), Air Force (USAF), Marine Corps (USMC), Special Operations Command (USSOCOM) and other services or organizations conducting airdrop operations. <b>FY 2024 Plans:</b> AMP-MI WINTAK Plugin Development <b>FY 2025 Plans:</b> FY25 in BPAC 630004 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY25 in BPAC 630004		-	0.496	0.000
<b>Title:</b> End-to-End Distribution Modeling <b>Description:</b> Developing the model of record for all programmatic analysis for transportation/distribution. <b>FY 2024 Plans:</b> Understanding effects of adversary kinetic, non-kinetic, and cyber actions that impact/influence logistics decisions, plus integration with warfight models <b>FY 2025 Plans:</b> FY25 in BPAC 630004 <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY25 in BPAC 630004		-	0.880	0.000
<b>Title:</b> Drone Supported Service Deployment <b>Description:</b> Use of drones to monitor and optimize deployment and distribution operations.		-	0.350	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>FY 2024 Plans:</b> Hardware and software designed to consistently: 1) operate during adverse weather conditions, 2) offer extended range and autonomous flying capability, 3) provide customized RFID and cargo anomaly detection support , 4) offer complete centralized multi-mission control, and lastly 5) transition and operate seamlessly as a part of the Integrated Computerized Deployment System (ICODES).</p> <p><b>FY 2025 Plans:</b> Project Ends FY24</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Project ends</p>				
<p><b>Title:</b> Petroleum Undersea Sustainment Hose</p> <p><b>Description:</b> Provide an agile, submersible over-the-shore conduit that can be pre-positioned or immediately employed from vessels of opportunity such as a commercial offshore supply vessel (OSV).</p> <p><b>FY 2024 Plans:</b> Addresses Sea Basing Technologies/Logistics-Over-The-Shore need to enhance the Joint Force Commander's flexibility</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> NA</p>		0.000	0.800	-
<p><b>Title:</b> Aerial Delivery - Low Cost Modular GPS Denied Kit</p> <p><b>Description:</b> Demonstrate a low size, weight, power and cost kit that can provide GPS-denied navigation, aerial delivery platforms</p> <p><b>FY 2024 Plans:</b> Contract engineering, flight testing</p> <p><b>FY 2025 Plans:</b> FY25 in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY25 in BPAC 630004</p>		0.000	0.750	0.000
<p><b>Title:</b> Airdrop System - Precision Extended Glide</p>		0.000	1.300	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Demonstrate a long range powered parafoil system to reduce risk to delivery aircraft</p> <p><b>FY 2024 Plans:</b> Systems Engineering, Component Procurements.</p> <p><b>FY 2025 Plans:</b> FY25 in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Development costs vary as project progresses</p>				
<p><b>Title:</b> Container Airdrop</p> <p><b>Description:</b> Enable the airdrop of a standard 20ft ISO container from a C-17 utilizing standard low altitude airdrop methods</p> <p><b>FY 2024 Plans:</b> Develop Container-Platform Lock System</p> <p><b>FY 2025 Plans:</b> FY25 in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Development costs vary as project progresses</p>		0.000	0.500	0.000
<p><b>Title:</b> Expeditionary Concrete Construction for Ports of Debarkation</p> <p><b>Description:</b> Use indigenous materials for contingency construction while minimizing logistics required to enable the construction</p> <p><b>FY 2024 Plans:</b> Material procurement and characterization</p> <p><b>FY 2025 Plans:</b> FY25 in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Costs vary by FY as development proceeds.</p>		0.000	0.500	0.000
<p><b>Title:</b> Global Reach</p>		0.000	0.803	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Tactical Situation, COP, mission planning, intelligence, communications resiliency, ship survivability capabilities</p> <p><b>FY 2024 Plans:</b> Conduct design activities to include but not limited to staff, operator and crew interviews, site, Information Technology (IT) and network surveys to better understand MSC's near, mid and long-term strategic and operational needs.</p> <p><b>FY 2025 Plans:</b> FY25 in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Costs vary as project progresses</p>				
<p><b>Title:</b> Scalable Autonomous Modular Propulsion Kits</p> <p><b>Description:</b> Develop scalable modular propulsion kits with marine automation for installation on ocean/riverine commercial barges</p> <p><b>FY 2024 Plans:</b> Autonomous control system used to convert manned vessels to autonomous unmanned capability</p> <p><b>FY 2025 Plans:</b> FY25 in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Development varies by FY</p>		0.000	0.891	0.000
<p><b>Title:</b> Large Area Runway Repair Gone Expeditionary</p> <p><b>Description:</b> Deliver TTPs/equipment to enhance capabilities to repair large craters</p> <p><b>FY 2024 Plans:</b> Develop new and mature technologies that will enable airbase recovery</p> <p><b>FY 2025 Plans:</b> Continue to develop new and mature technologies that will enable airbase recovery</p>		0.000	1.000	1.000
<p><b>Title:</b> Theater Mitigation Alternatives at Military Entry Control Facilities</p> <p><b>Description:</b> Research and physical testing to gather and analyze data for improving Entry Control Facilities</p>		0.000	1.136	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>FY 2024 Plans:</b> Begin reserach efforts to gather required data</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> NA</p>				
<p><b>Title:</b> Buoyant Roll On/Roll Off Interface Kit</p> <p><b>Description:</b> Prototype consisting of the RO/RO ramp to interface to a commercial supply vessel and a section of floating causeway and ancillary equipment sufficient to conduct a limited operational assessment</p> <p><b>FY 2024 Plans:</b> Continue to develop a prototype rapidly deployable ship-to-shore connector capability</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> NA</p>		0.000	0.750	-
<p><b>Title:</b> 35 Thousand Foot Airdrop</p> <p><b>Description:</b> Develop capabilities to airdrop from 35 thousand feet to increase aircraft standoff range from threat.</p> <p><b>FY 2024 Plans:</b> Continuing to work parafoil and parachute technologies</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> NA</p>		0.000	0.500	-
<p><b>Title:</b> Enhanced Vision Navigation for Joint Precision Airdrop System</p> <p><b>Description:</b> Support to oversee the development of advanced technologies to improve airdrop and other capabilities to the warfighter.</p> <p><b>FY 2024 Plans:</b> Monitor projects progression to ensure costs, schedule, performance</p> <p><b>FY 2025 Plans:</b> FY25 in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>		0.000	0.540	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Cost of living				
<b>Title:</b> Aerial Delivery Platform <b>Description:</b> Platform for air dropping mutiple vehicles  <b>FY 2024 Plans:</b> Development of platform prototype  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> NA		0.000	1.445	-
<b>Title:</b> Modular Autonomous Ready Dynamic Positioning System <b>Description:</b> Position for sealift lighterage assets  <b>FY 2024 Plans:</b> develop prototypes  <b>FY 2025 Plans:</b> Continue to develop prototype  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Development costs vary as project progresses		0.000	1.181	0.764
<b>Title:</b> AI-Powered Sensitive Data Masking <b>Description:</b> Focus on masking structured data, building an organizational knowledge base, and masking unstructured data  <b>FY 2024 Plans:</b> Identify a focused subset of operational data that is commonly shared across trusted partners.  <b>FY 2025 Plans:</b> FY25 plans in BPAC 630004  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Development costs vary as project progresses		0.000	0.300	0.000
<b>Title:</b> Iron Spider <b>Description:</b> Support plans that are released on unclassified, untrusted commercial networks in order to solicit		0.000	0.775	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
and contract with vendors capable of supplying theater forces.				
<p><b>FY 2024 Plans:</b> Continue to allow permissioned transactional blockchain network integrated with an identity blockchain that controls access</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> NA</p>				
<p><b>Title:</b> Massachusetts Institute of Technology Lincoln Labs</p> <p><b>Description:</b> Partnership with MIT-LL to research efforts to improve enterprise operational architecture supporting high-end analytics, integrated information technology/data structures, understanding of cloud capabilities and multi-level cyber security defense.</p> <p><b>FY 2024 Plans:</b> Multiple efforts to increase decision support</p> <p><b>FY 2025 Plans:</b> FY25 plans in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> NA</p>		0.000	2.467	0.000
<p><b>Title:</b> Modeling &amp; Simulation Innovation</p> <p><b>Description:</b> Select student research/faculty-assisted projects (e.g., Joint Transportation Asset Scheduling Kit, Next Generation Cargo Capability, Applying Post Modern Portfolio Theory to Mitigate Risk in International Shipping, Optimal CH-47/C-130 Workload Balance, Remotely Piloted Aircraft Performing Airdrop Mission).</p> <p><b>FY 2024 Plans:</b> Collaboration partnership with AFIT for student research</p> <p><b>FY 2025 Plans:</b> FY25 plans in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> No significant increase</p>		0.000	0.110	0.000
<p><b>Title:</b> Aerial Delivery and Autonomous Deployment of Unmanned Vehicles</p>		0.000	1.904	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Develop ability to deliver unmanned systems from existing airdrop systems</p> <p><b>FY 2024 Plans:</b> Develop release mechanism for unmanned vehicle</p> <p><b>FY 2025 Plans:</b> FY25 plans in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Development costs vary as project progresses</p>				
<p><b>Title:</b> Program Execution</p> <p><b>Description:</b> Provide technical assistance and program management support to the USTRANSCOM RDT&amp;E Program.</p> <p><b>FY 2024 Plans:</b> TRL 4-6: Program support to explore technology solutions to capability gaps identified through Joint Concept Development documents, the Joint capabilities Integration and Development System process, Joint Experimentation, etc, to increase the responsiveness, efficiency and effectiveness of the Joint Deployment and Distribution Enterprise.</p> <p><b>FY 2025 Plans:</b> FY25 plans in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Cost of living</p>		0.000	1.056	0.000
<p><b>Title:</b> Analyzer Driven Data Integrity</p> <p><b>Description:</b> Increase data integrity</p> <p><b>FY 2024 Plans:</b> Contiune plan design</p> <p><b>FY 2025 Plans:</b> FY25 plans in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>		0.000	0.397	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
No significant decrease				
<b>Title:</b> Strategic Theater Orchestration and Resource Management <b>Description:</b> Provide ability more effectively and efficiently manage theater lift assets  <b>FY 2024 Plans:</b> Established Strategic-Theater Scenarios  <b>FY 2025 Plans:</b> FY25 plans in BPAC 630004  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Development cots vary as project progresses		0.000	1.310	0.000
<b>Title:</b> Risk Assessment and Vetting for the Enterprise <b>Description:</b> Effort will provide the ability to assess deployment distribution risk factors  <b>FY 2024 Plans:</b> Move from desig to development phases  <b>FY 2025 Plans:</b> Complete development  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Costs vary as project progresses		0.000	1.900	0.700
<b>Title:</b> Component Level Operational Decision Advantage <b>Description:</b> Develop detailed decision support tool that provides insight at the component level  <b>FY 2024 Plans:</b> Initiate the agile software development approach  <b>FY 2025 Plans:</b> Continue the agile software development approach  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Costs vary as project progresses		0.000	1.524	1.484
<b>Title:</b> JDDE Mission Assurance Coordinator		0.000	0.426	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Develop a JDDE-wide method for mission coordination</p> <p><b>FY 2024 Plans:</b> Iterations of conceive, build, and test solutions</p> <p><b>FY 2025 Plans:</b> FY25 plans in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Ramping up of development phase</p>				
<p><b>Title:</b> Oversight</p> <p><b>Description:</b> Enable continuous tracking of adversary cyber groups and campaigns targeting USTRANSCOM and USINDOPACOM enterprise and their partners</p> <p><b>FY 2024 Plans:</b> Continue anomaly detection and predictive analysis to dynamically assess threats, attack vectors and adversary intent</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> NA</p>		0.000	1.330	-
<p><b>Title:</b> Cyber Mission Assurance Technologies</p> <p><b>Description:</b> Near real-time understanding of the operational impact of cyber risks, threats, and disruptions.</p> <p><b>FY 2024 Plans:</b> Continue to develop integrated analysis/decision processes involving complex ops/cyber data by selecting pre-approved actions and coordinating stakeholders in the fight-through of cyber risks/disruptions to executing missions and Cyber Critical Asset Lists</p> <p><b>FY 2025 Plans:</b> FY25 plans in BPAC 630004</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Costs vary as project progresses</p>		0.000	3.170	0.000
<b>Accomplishments/Planned Programs Subtotals</b>		0.000	31.833	4.840

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

~\$27M of BPAC in FY25 being shifted to new BA3 BPAC. Same shift of funds in the out years as well.

**D. Acquisition Strategy**

Requirements for joint deployment and distribution enterprise technology enhancements are annually identified, validated and prioritized by the Joint Deployment & Distribution Enterprise (JDDE) community. Pursuit of the development of new/improved capabilities to meet these requirements is managed by the United States Transportation Command (USTRANSCOM). Prototype products, once evaluated by the users, are spirally transitioned by the operational community.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<i>Deployment and Distribution</i>	
Integrated Logistics Support	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604776F / <i>Deployment &amp; Distribution Enterprise R&amp;D</i>	<b>Project (Number/Name)</b> 640216 / <i>Deployment and Distribution Innovation</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Deployment and Distribution</i></b>				
Integrated Logistics Support	1	2024	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	298.057	210.806	234.342	0.000	234.342	229.573	222.131	300.559	261.414	Continuing	Continuing
645350: <i>Experimentation</i>	-	175.143	95.233	69.108	0.000	69.108	73.406	74.462	76.345	77.851	Continuing	Continuing
645351: <i>Prototyping</i>	-	122.914	108.495	155.094	0.000	155.094	145.640	136.360	212.389	171.492	Continuing	Continuing
645352: <i>Architecture Design and Evaluation</i>	-	0.000	7.078	10.140	0.000	10.140	10.527	11.309	11.825	12.071	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The Tech Transition Program addresses the gap between initial system-level technology or concept development and demonstration, and successful acquisition and operational capability implementation. The Tech Transition Program matures new warfighting concepts, rapidly develops fieldable prototypes, and performs experimentation to assess military utility of transition-ready weapon systems. This program utilizes multiple approaches and integrated activities to field technology for the warfighter focusing on efforts that are directly tied to the Secretary of the Air Force's (SecAF) Operational Imperatives.

Experimentation efforts explore new concepts and their applications in potential future operating environments within a system-of-systems context taking risks early in the acquisition process to drive a more optimized and efficient acquisition approach significantly reducing overall acquisitions costs.

Prototyping enables integration and demonstration of emerging technologies to quickly move them into warfighting capability. Following strategic guidance the Department of the Air Force has institutionalized Experimentation and Prototyping to achieve smarter, faster, and more efficient acquisitions that move technologies rapidly into the most critical warfighting capabilities.

The Tech Transition Program allows acquisition program managers (the capability developers) and warfighters (the capability recipients and end users) to prototype, integrate, and demonstrate candidate technologies and assess them in an operational system of systems environment in partnership with Combatant Commanders, Major and Field Commands, Program Executive Officers, schoolhouses, simulation facilities, and development planning organizations.

Architecture Design and Evaluation is directed by the DAF PEO C3BM with oversight by the Secretary of the Air Force along with the Chief of Staff of the Air Force, Chief of Space Operations, and Senior Acquisition Executive. This activity is supported by the Air Force Research Laboratory.

The total cost of the AKCS Middle Tier of Acquisition effort is \$64.27 million, including RDT&E and procurement of prototype units. The AKCS is fully funded across the Future Years Defense Program.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F, 0605831F, and/or 0606017F.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>
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This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	370.810	210.806	192.833	0.000	192.833
Current President's Budget	298.057	210.806	234.342	0.000	234.342
Total Adjustments	-72.753	0.000	41.509	0.000	41.509
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-72.753	0.000	41.509	0.000	41.509

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project: 645350: Experimentation**

Congressional Add: *Program Increase - Autonomous Air Combat Operations*

Congressional Add: *Program Increase Advanced Rotary Engine Hybrid Power System*

Congressional Add: *Program Increase - Operational Additive Manufacturing Capabilities*

Congressional Add: *Program Increase Advanced Air Mobility*

Congressional Add: *Program Increase - F35 Logistics Enhancements*

Congressional Add: *Program Increase - Hybrid Autonomous Maritime Expeditionary Logistics*

Congressional Add: *Program Increase Versatile Aerial Power System*

Congressional Add Subtotals for Project: 645350

**Project: 645351: Prototyping**

Congressional Add: *Program increase - Logistics Enhancements*

Congressional Add: *Program increase - Alternative PNT phase III Demonstration*

Congressional Add Subtotals for Project: 645351

	<b>FY 2023</b>	<b>FY 2024</b>
	10.000	-
	10.000	-
	9.800	-
	5.500	-
	10.000	-
	2.000	-
	10.000	-
	57.300	-
	0.000	0.000
	0.000	-
	0.000	0.000

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>
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<b>Congressional Add Details (\$ in Millions, and Includes General Reductions)</b>		<b>FY 2023</b>	<b>FY 2024</b>
Congressional Add Totals for all Projects		57.300	0.000

**Change Summary Explanation**

The FY 2025 funding request was reduced by \$3.019 million to account for the availability of prior year execution balances.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>				<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
645350: <i>Experimentation</i>	-	175.143	95.233	69.108	0.000	69.108	73.406	74.462	76.345	77.851	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Experimentation project funds experimentation campaigns to explore new concepts and their applications in operationally relevant environments and within a system-of-systems warfighting context. Operational Experimentation Campaigns are directly aligned and integrated with the SecAF and DAF priorities. Concepts and enabling technologies including but not limited to, target custody, airborne targeting and tracking, autonomy, spectrum warfare, artificial intelligence, machine learning, expeditionary base defense, agile combat operations, and joint all-domain operations hold great promise, yet their transition to acquisition programs and fielded capabilities is typically hampered due to uncertainties regarding their military utility and organizational adoption. Experimentation campaigns assess hypotheses that new capabilities will deliver decisive competitive advantage against our adversaries in a dynamic threat environment. These campaigns dramatically shorten and reduce the overall cost of the acquisition process by delivering robust information including operational utility assessments, training, tactics, and procedures (TTPs), total life cycle cost estimates, preliminary product support strategy, reliability and maintainability metrics, operational utility assessments and Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy implications.

A key element of the experimentation campaigns is strong stakeholder partnerships and buy-in from senior DAF leadership including the Secretary of the Air Force, Air Force Futures, Air Force Plans and Programs, US Space Force Futures and Integration, Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics, warfighting Major Commands and Combatants Commands (capability recipients/end users), Space and Missile Systems Center and Air Force Material Command (capability developers) that ensures rapid transition of capabilities when operational utility, affordability, sustainability, and industrial capacity meet the Department of Air Force needs.

Experimentation campaigns are centered on an operational level warfighting concept to provide context for assessment. They use wargaming, simulation, demonstrations, and field/flight experimentation to evolve, refine, and validate the warfighting concepts leading to solid, evidence-based materiel and non-materiel capability development approaches with associated recommendations. Experimentation campaigns improve the effectiveness of operations by refining concepts and generating new information to address challenging threats of the future which aids the fielding of advanced technologies by providing the credible evidence needed to make sound strategic decisions and investment choices. Warfighting concepts evolve based on the latest threat assessments and the Experimentation Campaigns are likewise modified to ensure the Department of the Air Force retains a competitive advantage. Much of the Operational Experimentation efforts are more thoroughly described at higher classification levels.

Experimentation is focused on rapid learning and then pivoting existing or future capability development efforts based on that knowledge to ensure the most pressing operational gaps are addressed and our warfighting advantages are preserved. Further details can be provided in the appropriate forum.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> Experimentation Campaigns	117.843	95.233	69.108	0.000	69.108

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<p><b>Description:</b> Execution of Experimentation Campaigns to identify the competitive advantages of operational warfighting concepts and the technologies that enable these concepts. Activities may include flight tests, operational exercises, joint-service exercises, digital engineering, system-of-systems integration facilitated workshops, wargaming, modeling and simulation, and virtual and hardware prototyping to enable experimentation campaigns.</p> <p><b>FY 2024 Plans:</b> Continue to execute Experimentation Campaigns that aim to assess and enable competitive advantages against near-peer adversaries and advance multi-domain operations to bring a convergence of effects, as directed by Department of the Air Force Leadership.</p> <p>In FY 2024 the App Enabled Rapidly Reprogrammable EW/EMS Systems (AERRES) program will evaluate the operational utility of open architectures for rapidly reprogrammable Electronic Warfare (EW) and assess the competitive advantages of Artificial Intelligence/Machine Learning Electromagnetic Spectrum (EMS) algorithms on several operational platforms in tactical operations. Software focused EW and AI/ML tools will enable responsive Electronic Attack to rapidly adapt and defeat near-peer RF threats.</p> <p>SDPE's Hawkeye Experimentation Campaign will perform end-to-end operational experimentation of a long-range joint-service kill chain, scale the capability up to the throughput needed for an operational system, and work with DOD USG organizations to transition the capability onto a DOD digital infrastructure. All relevant data from multiple domains is shared to contribute to the optimized joint-service targeting solution. The accuracy and latency of each data stream is coherently fused to form optimal targeting information. The target information is then passed through multiple communications pathways to the platforms. Under the FY 2019-2022 Hawkeye effort, all key elements were integrated in a simulated kill chain and demonstrated in live testing. Characterized of each element was completed at limited scale, and shown to be effective. The current effort fully integrates the Hawkeye effort into existing and new more resilient kill chains, scales the advancements to large numbers of platforms across the DoD, and transitions the capability to an operational digital infrastructure. FY 2024 funding will focus on targeting efficiency to demonstrate communications, track extraction, and weapon/target pairing.</p> <p>The Base Defense Battle Management Command and Control Experimentation efforts will continue to assess the operational effectiveness, maintainability, reliability, and suitability of the Hypervelocity Ground Weapon System (HGWS) to protect agile base operations. The system will be integrated with an operationally fielded USAF Command and Control (C2) systems providing centralized control and fusion of Joint Service sensors to</p>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>
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**B. Accomplishments/Planned Programs (\$ in Millions)**

improve weapons quality track. Efforts will focus on evaluating the Air Defense Controller to reduce manpower, improve target engagement, cut engagement timelines, and assess operator limitations versus raids of various threats.

SDPE will also explore low cost, nontraditional platforms such as high-altitude balloons and un-crewed, long endurance air platforms to sense and track adversary platforms and actions. SDPE will assess the operational capability of multiple long endurance platforms and their ability to work as a system of systems to collect and disseminate critical information. Additional efforts will continue to identify and evaluate potential game-changing Agile Combat Employment operations that enable Air Force expeditionary operations in austere, difficult to locate positions. Smaller experimentation campaigns will be undertaken to address the strategic dilemma posed at Air University's Chief of Staff of the Air Force sponsored Blue Horizons program.

Only those Experimentation efforts that are deemed the absolute highest priority by the Department of the Air Force Leadership will be executed aiming to create technologies and processes that will provide the largest competitive advantages and produce the most significant dilemmas for our adversaries will be investigated or executed. Data from all efforts is provided directly to the Secretary of the Air Force, AF Plans and Programs (A8), Futures (5/7), Secretary of the Air Force for Acquisition, Technology and Logistics (AQ), and US Space Force Futures and Integration (S8), and the Space Warfighting Analysis Center (SWAC) to drive capability development.

***FY 2025 Base Plans:***

Continue to execute Experimentation Campaigns that aim to assess and enable competitive advantages against near-peer adversaries and advance multi-domain operations to bring a convergence of effects, as directed by Department of the Air Force Leadership. Several Operational Experimentation Campaigns will conclude in FY 2024 efforts focused on rapidly reprogrammable EW/EMS Systems and base defense systems.

SDPE's Hawkeye Experimentation Campaign will continue to perform an end-to-end operational experimentation of a long-range, joint-service kill chain, scale the capability up to the throughput needed for an operational system, and work with DOD USG organizations to transition the capability onto a DOD digital infrastructure. All relevant data from multiple domains is shared to contribute to the optimized joint-service targeting solution. The accuracy and latency of each data stream is coherently fused to form optimal targeting information. The target information is then passed through multiple communications pathways to the platforms. Under the FY 2019-2022 Hawkeye effort, all key elements were integrated in a simulated kill chain and demonstrated in live testing. Characterized of each element was completed at a limited scale and shown to be effective. The current effort

FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<p>fully integrates the Hawkeye effort into existing and new more resilient, kill chains, scales the advancements to large numbers of platforms across the DoD, and transitions the capability to an operational digital infrastructure. Specifically, in FY 2025, funding will focus on operational testing of weapon/target pairing capabilities and implementation of track extraction techniques.</p> <p><b>FY 2025 OCO Plans:</b> Not Applicable</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding decreased compared to FY 2024 by \$29.445 million to account for the availability of prior year execution balances.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	117.843	95.233	69.108	0.000	69.108

	FY 2023	FY 2024
<b>Congressional Add:</b> Program Increase - Autonomous Air Combat Operations	10.000	-
<b>FY 2023 Accomplishments:</b> Conduct Congressionally - Directed Efforts		
<b>Congressional Add:</b> Program Increase Advanced Rotary Engine Hybrid Power System	10.000	-
<b>FY 2023 Accomplishments:</b> Conduct Congressionally - Directed Efforts		
<b>Congressional Add:</b> Program Increase - Operational Additive Manufacturing Capabilities	9.800	-
<b>FY 2023 Accomplishments:</b> Conduct Congressionally - Directed Efforts		
<b>Congressional Add:</b> Program Increase Advanced Air Mobility	5.500	-
<b>FY 2023 Accomplishments:</b> Conduct Congressionally - Directed Efforts		
<b>Congressional Add:</b> Program Increase - F35 Logistics Enhancements	10.000	-
<b>FY 2023 Accomplishments:</b> Conduct Congressionally - Directed Efforts		
<b>Congressional Add:</b> Program Increase - Hybrid Autonomous Maritime Expeditionary Logistics	2.000	-
<b>FY 2023 Accomplishments:</b> Conduct Congressionally - Directed Efforts		
<b>Congressional Add:</b> Program Increase Versatile Aerial Power System	10.000	-
<b>FY 2023 Accomplishments:</b> Conduct Congressionally - Directed Efforts		
<b>Congressional Adds Subtotals</b>	57.300	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 04 0604025F: <i>Rapid Defense Experimentation Reserve (RDER)</i>	-	154.300	-	-	-	-	-	-	-	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

Experimentation campaigns will aid the advancement and transition of advanced technologies by providing the credible evidence decision makers need to make sound strategic decisions and investment choices, to provide the warfighter with advanced capabilities. Air Force Futures, Air Force Plans and Programs, US Space Force Futures and Integration, and the Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics direct experimentation campaigns. The Air Force Strategic Development Planning and Experimentation (SDPE) Office located at Wright-Patterson Air Force Base, Ohio and Eglin Air Force Base manages and executes each experimentation campaign. Contracting strategies vary based on the activities of each campaign.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Experimentation Campaigns	C/Various	Various : Various	-	-		19.467	Jan 2024	1.000	Jan 2025	-		1.000	Continuing	Continuing	-
Experimentation Campaign Hawkeye Contract 1	C/CPAF	L3 Harris : Salt Lake City, UT	-	-		-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Hawkeye Contract 2	C/CPFF	Lockheed : Fort Worth, TX	-	-		-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Hawkeye Contract 3	C/CPFF	Space X : Hawthorne, CA	-	-		-		15.000	Jan 2025	-		15.000	Continuing	Continuing	-
Experimentation Campaign Hawkeye Contract 4	Various	Various : Various	-	10.000	Dec 2022	20.000	Oct 2023	-		-		-	Continuing	Continuing	-
Experimentation Campaigns Hawkeye Contract 5	Various	Various : Various	-	18.000	Nov 2022	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Hawkeye Contract 6	Various	Various : Various	-	2.000	Dec 2022	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Hawkeye Contract 7	C/CPAF	GA-CCRI : Charlottesville, VA	-	-		-		16.000	Mar 2025	-		16.000	Continuing	Continuing	-
Experimentation Campaign Hawkeye Contract 8	C/CPAF	KBR Wyle : Colorado Springs, CO	-	-		-		10.000	Jan 2025	-		10.000	Continuing	Continuing	-
Experimentation Campaign Autonomous Attributable Aircraft	Various	Various : Various	-	-		4.000	Jan 2024	-		-		-	Continuing	Continuing	-
Experimentation Campaign Autonomous Attributable Aircraft Contract 1	C/CPFF	Lockheed : Palmdale, CA	-	2.000	Jul 2023	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Autonomous Attributable Aircraft Contract 2	C/CPFF	Kratos : Colorado Springs, CO	-	2.000	May 2023	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Autonomous Attributable Aircraft Contract 3	C/CPFF	Calspan : Buffalo, NY	-	2.000	Jul 2023	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Autonomous Attributable Aircraft Contract 4	C/CPAF	Leidos : Reston, VA	-	2.000	Sep 2023	-		-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / Tech Transition Program	<b>Project (Number/Name)</b> 645350 / Experimentation
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Experimentation Campaign Autonomous Attributable Aircraft Contract 5	C/CPAF	Infoscitex : Dayton, OH	-	2.000	Jun 2023	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Autonomous Attributable Aircraft Contract 6	C/CPAF	Fregata : St Louis, MO	-	2.000	Dec 2023	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Autonomous Attributable Aircraft Contract 7	C/CPAF	GRE OTA : FL	-	-		-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Blue Horizons	Various	Various : Various	-	2.250	Dec 2022	2.000	Nov 2023	3.500	Dec 2024	-		3.500	Continuing	Continuing	-
Experimentation Campaign Base Defense Gun Weapon System 1	C/CPFF	Raytheon : Tucson, AZ	-	7.000	Jan 2023	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Base Defense Gun Weapon System 2	C/CPAF	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Base Defense National Advanced Surface to Air Missile System	C/CPFF	BAE : Minneapolis, MN	-	12.000	Dec 2022	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Counter AI	C/CPAF	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Experimentation Campaign AERRES	Various	Various : Various	-	6.500	Dec 2022	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign AMTI	Various	Various : Various	-	5.000	Feb 2023	3.000	Jan 2024	-		-		-	Continuing	Continuing	-
Experimentation Campaign Agile Combat Employment	Various	Various : Various	-	5.000	Dec 2022	-		0.000		-		0.000	Continuing	Continuing	-
Experimentation Campaign Saint Contract 1	TBD	TBD : TBD	-	-		-		5.705	Jan 2025	-		5.705	Continuing	Continuing	-
Congressional Add - Autonomous Air Combat Operations	Various	Various : Various	-	10.000	Oct 2023	-		-		-		-	0.000	10.000	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / Tech Transition Program	<b>Project (Number/Name)</b> 645350 / Experimentation
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Congressional Add - advanced rotary engine hybrid power system	Various	Various : Various	-	10.000	Oct 2023	-		-		-		-	Continuing	Continuing	-
Congressional Add - operational additive manufacturing capabilities	Various	Various : Various	-	9.800	Dec 2023	-		-		-		-	Continuing	Continuing	-
Congressional Add - advanced air mobility	Various	Various : Various	-	5.500	Aug 2023	-		-		-		-	Continuing	Continuing	-
Congressional Add - F-35 Logistics Enhancements	Various	Various : Various	-	10.000	Jun 2024	-		-		-		-	Continuing	Continuing	-
Congressional Add - hybrid autonomous maritime expeditionary logistics	Various	Various : Various	-	2.000	Nov 2023	-		-		-		-	Continuing	Continuing	-
Congressional Add - Versatile Aerial Power System	Various	Various : Various	-	10.000	Dec 2023	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Unmanned Adversary Air (ADAIR UX)	Various	Various : Various	-	8.341	Jul 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	145.391		48.467		51.205		-		51.205	Continuing	Continuing	N/A

**Remarks**  
Experimentation is focused on rapid learning and then pivoting based on that learning. Therefore, specific plans are not detailed to prevent locking into an approach that will likely shift based on current experimentation efforts. Further budget details can be provided in the appropriate forum.

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Experimentation Campaign Support	Various	Various : Various	-	1.361	Mar 2023	4.000	Jan 2024	-		-		-	Continuing	Continuing	-
Experimentation Campaign Autonomous Attributable Aircraft Support 1	MIPR	Perduco/GSA : O'Fallon, IL	-	5.200	Nov 2022	1.000	Nov 2023	-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Experimentation Campaign Autonomous Attributable Aircraft Support 2	MIPR	OO-ALC : Ogden, UT	-	-		-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Hawkeye	Various	Various : Various	-	-		2.000	Dec 2023	1.000	Jan 2025	-		1.000	Continuing	Continuing	-
Experimentation Campaign Base Defense	MIPR	Various : Various	-	4.000	Nov 2022	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Blue Horizons	MIPR	DOE : Oak Ridge, TN	-	0.250	Nov 2022	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign AERRES 1	MIPR	AAFC/AFR : Adelphi, MD	-	0.500	Oct 2022	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign AERRES 2	MIPR	SWRI : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Experimentation Campaign AMTI	Various	Various : Various	-	1.000	Oct 2022	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	12.311		7.000		1.000		-		1.000	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Experimentation Campaign Test and Evaluation	MIPR	Various : Various	-	2.480	Dec 2022	5.000	Dec 2023	-		-		-	Continuing	Continuing	-
Experimentation Campaign Hawkeye	Various	Various : Various	-	-		10.000	Oct 2023	10.000	Jan 2025	-		10.000	0.000	20.000	-
Experimentation Campaign Autonomous Attributable Aircraft T&E 1	MIPR	Various : Various	-	5.094	Apr 2023	14.260	Feb 2024	-		-		-	Continuing	Continuing	-
Experimentation Campaign AERRES 1	MIPR	96 OSS : Eglin AFB, FL	-	3.770	Dec 2022	-		-		-		-	Continuing	Continuing	-
Experimentation Campaign AERRES 2	MIPR	586th : CA	-	-		-		-		-		-	Continuing	Continuing	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Experimentation</b>																												
Experimentation Campaigns																												
<b>App Enabled Rapidly Reprogrammable EW/ EMS Systems (AERRES)</b>																												
App Enabled Rapidly Reprogrammable EW/ EMS Systems (AERRES)																												
<b>Congressional Add - Autonomous Air Combat Operations</b>																												
Congressional Add - Autonomous Air Combat Operations																												
<b>Base Defense Experiment</b>																												
Base Defense Experiment - NASAM and HGWS																												
<b>Autonomous Attributable Aircraft Experiment (AAAx)</b>																												
Autonomous Attributable Aircraft Experiment (AAAx)																												
<b>Blue Horizons Projects</b>																												
Blue Horizons Projects																												
<b>Counter AI</b>																												
Counter AI Experimentation																												
<b>ADAIR UX</b>																												
ADAIR UX																												
<b>Hawkeye</b>																												
Hawkeye																												
<b>Pathfinders</b>																												
Pathfinders																												

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / Tech Transition Program	<b>Project (Number/Name)</b> 645350 / Experimentation
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Congressional Add - Advanced Rotary Engine Hybrid Power System</b>																												
Congressional Add - Advanced Rotary Engine Hybrid Power system																												
<b>Congressional Add - Operational Additive Manufacturing Capabilities</b>																												
Congressional Add - Operational Additive Manufacturing Capabilities																												
<b>Congressional Add - Advanced Air Mobility</b>																												
Congressional Add - Advanced Air Mobility																												
<b>Congressional Add - F-35 Logistics Enhancements</b>																												
Congressional Add - F-35 Logistics Enhancements																												
<b>Congressional Add - Hybrid Autonomous Maritime Expeditionary Logistics</b>																												
Congressional Add - Hybrid Autonomous Maritime Expeditionary Logistics																												
<b>Congressional Add - Versatile Aerial Power System</b>																												
Congressional Add - Versatile Aerial Power System																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Experimentation</b>				
Experimentation Campaigns	1	2023	4	2028
<b>App Enabled Rapidly Reprogrammable EW/EMS Systems (AERRES)</b>				
App Enabled Rapidly Reprogrammable EW/EMS Systems (AERRES)	1	2023	4	2023
<b>Congressional Add - Autonomous Air Combat Operations</b>				
Congressional Add - Autonomous Air Combat Operations	1	2023	4	2023
<b>Base Defense Experiment</b>				
Base Defense Experiment - NASAM and HGWS	1	2023	4	2023
<b>Autonomous Attritable Aircraft Experiment (AAAx)</b>				
Autonomous Attritable Aircraft Experiment (AAAx)	1	2023	4	2024
<b>Blue Horizons Projects</b>				
Blue Horizons Projects	1	2023	4	2028
<b>Counter AI</b>				
Counter AI Experimentation	1	2023	4	2023
<b>ADAIR UX</b>				
ADAIR UX	1	2023	4	2023
<b>Hawkeye</b>				
Hawkeye	1	2023	4	2026
<b>Pathfinders</b>				
Pathfinders	1	2023	4	2028
<b>Congressional Add - Advanced Rotary Engine Hybrid Power System</b>				
Congressional Add - Advanced Rotary Engine Hybrid Power system	1	2023	4	2023
<b>Congressional Add - Operational Additive Manufacturing Capabilities</b>				

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**Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645350 / <i>Experimentation</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Congressional Add - Operational Additive Manufacturing Capabilities	1	2023	4	2023
<b><i>Congressional Add - Advanced Air Mobility</i></b>				
Congressional Add - Advanced Air Mobility	1	2023	4	2023
<b><i>Congressional Add - F-35 Logistics Enhancements</i></b>				
Congressional Add - F-35 Logistics Enhancements	1	2023	4	2023
<b><i>Congressional Add - Hybrid Autonomous Maritime Expeditionary Logistics</i></b>				
Congressional Add - Hybrid Autonomous Maritime Expeditionary Logistics	1	2023	4	2023
<b><i>Congressional Add - Versatile Aerial Power System</i></b>				
Congressional Add - Versatile Aerial Power System	1	2023	4	2023

**Note**

Experimentation is focused on rapid learning and then pivoting based on that learning. They are used to determine the competitive advantage a technology or warfighting concept can have over our adversaries and ascertain operational utility. Often Experimentation Campaigns uncover new ways to use existing technology or how to exploit new Science and Technology for our competitive gain. Further schedule details regarding individual experimentation campaigns can be provided in the appropriate forum.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>				<b>Project (Number/Name)</b> 645351 / <i>Prototyping</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
645351: <i>Prototyping</i>	-	122.914	108.495	155.094	0.000	155.094	145.640	136.360	212.389	171.492	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Prototyping project enables demonstration of emerging technologies in an operational environment to determine and evaluate the competitive advantage against our adversaries and how the technology is integrated into the future fight.

Lifecycle Prototyping investments focus on three major thrusts (1) advancing capabilities of legacy weapon systems, (2) militarizing novel mature commercial technologies, and (3) exploring partnerships with Department of the Air Force Program Executive Officers to rapidly transition technologies. Prototype project investments that advance capabilities of legacy weapon systems focus on kinetic energy effectors for base defense and expeditionary employment operations, and software defined electronic warfare and communication capabilities. Prototype projects that seek to militarize novel mature commercial technologies will focus on artificial intelligence, autonomy, cyber warfare capabilities, digital engineering, and novel weapon and aircraft technologies.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> Lifecycle Prototyping	122.914	20.274	66.837	0.000	66.837
<b>Description:</b> Following Strategic Department of Defense and Department of the Air Force direction cross-functional teams composed of operators, technologists, engineers, acquisition, and requirements personnel from across the Department of the Air Force execute Prototyping Campaigns to determine if and how much of a competitive advantage these systems can produce against our adversaries. Developmental Prototypes are an opportunity to understand the operational utility of a new warfighting concept or technology, while avoiding the pitfalls of entering a lengthy, formal acquisition program without the requisite knowledge of performance trade-offs and technical and programmatic risks. Prototypes integrated into carefully crafted operational Experimentation Campaigns provide immediate feedback to Department of the Air Force senior leaders driving rapid acquisition or divestment with minimal resources. Prototype efforts provide an initial capability if warranted that can act as a catalyst for future rapid acquisition. Exploring innovative prototypes that range across the full Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy spectrum gives Department of the Air Force senior leaders a quicker understanding of the potential operational utility, leading to better decisions on what to pursue with limited acquisition resources.					
<b>FY 2024 Plans:</b> A Rapid Dragon (palletized munitions) operational prototype will be built and will launch heterogeneous weapon loads identified by Department of the Air Force senior leaders that will provide strategic advantages against					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645351 / <i>Prototyping</i>
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**B. Accomplishments/Planned Programs (\$ in Millions)**

China and other peer adversaries. SDPE will continue to work with DAF, MAJCOM, and COCOM partners to identify the most appropriate weapon systems. Palletized munition prototypes will be built and integrated into Joint Operations and Allied Partner exercises to understand the operational advantages that can be exploited across services and strategic allied partners. SDPE will continue to work with allied partners to assess the integration of the palletized effects concept in joint coalition exercises.

Under Project SAINT, SDPE will build a digital environment to assess the ability to establish and maintain custody of adversary high value moving targets using cross-service, cross-agency, and commercial sensing capabilities. As part of the effort, SDPE will understand and utilize sense making algorithms to provide track fusion from distributed, multi-domain sensing sources within differing accuracies and time of arrival.

**FY 2025 Base Plans:**  
SDPE will complete operational testing of the Rapid Dragon (palletized effects) system while assessing the strategic advantages the system provides against China and other peer adversaries. SDPE will continue to work with DAF, MAJCOM, COCOM, and the Air Force Life Cycle Management Center to transition the system and warfighting concept as needed. Rapid Dragon will integrate new palletized effects into the delivery system to include kinetic, non-kinetic, and a long distance resupply vehicle for Humanitarian Aid/Disaster Relief. The Operational Prototype will be built and integrated into Joint Operations and Allied Partner exercises to understand the operational advantages that can be exploited across services and strategic allied partners. SDPE will continue to work with allied partners to assess the integration of the palletized effects concept in joint coalition exercises.

SAINT will prototype a Custody Engine that will maintain continual custody of high value moving targets through cooperative and autonomous orchestration with ISR collection nodes and battlespace manager nodes among the JADC2 enterprise. SDPE will also continue to assess the digital environment demonstrated as part of the SAINT effort and its ability to establish and maintain custody of adversary high value moving targets using cross-service, cross-agency, and commercial sensing capabilities. Work will utilize and test sense making algorithms to provide track fusion from distributed, multi-domain sensing sources within differing accuracies and time of arrival. Working with the Command, Control, Communications and Battle Management (C3BM) office, SDPE will integrate SAINT capabilities into existing and future AF digital networks.

ETV conducts multi-phase prototyping and demonstration activities for modular and open-architected Enterprise Test Vehicles (ETV) - or test "truck" - designs to reduce risk across all future advanced weapons capabilities. ETV demos will lead to prototype demonstrations of weaponized ETVs. Each phase will cultivate flexibility in

FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645351 / <i>Prototyping</i>
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**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<p>integrating internal components to meet evolving weapons requirements while maintaining a keen focus on affordability and the mitigation of prolonged time-to-field cycles. Phases will include "proof of manufacturability" demonstrations to prove out high-rate distributed manufacturing methods. Demonstrations will be performed to prove out modularity between weapon variants and between third-party vendor components. Technology challenges will be performed to identify and stimulate affordable, highly manufacturable components in the marketplace. Demonstrations will include maturing different options for weapon employment, to include palletized employment, collaborating air launch, ground launch, and others. Successful demonstration will transition to production. The first demonstration will be a low-cost cruise missile design, also known as Franklin, to be used as an affordable mass weapon.</p> <p><b>FY 2025 OCO Plans:</b> Not Applicable</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding increased by \$52.268 million from FY 2024 due to funding for SAINT and Enterprise Test Vehicle (ETV).</p>					
<p><b>Title:</b> Rapid Defense Experimentation Reserve</p> <p><b>Description:</b> The Department of Defense implement multiple RDER experimentation series through Service nominated projects with execution timelines ranging from one to two years. The USD (R&amp;E) will review project progress, and recommend new projects at least annually with the goal of quickly incorporating the most promising innovative prototypes into experiments, and promptly terminating projects that fail to achieve expectations. To incentivize a disciplined approach to rapidly identify, incorporate, and execute projects largely through the Military Services, the Department will fund approved Service projects for the upcoming fiscal year out of the Department reserves. Funding decisions on additional funds in follow-on years for new projects, and funding decrements for project terminations will be incorporated in budgets annually based on emerging requirements and periodic assessments of project viability. Services will execute these funds under oversight of the OSD in a manner consistent with the experimentation scenario for which individual projects were selected. Service experimentation outcomes will be designed to validate required capabilities enabling the JWC by evaluating and integrating prototyped technologies in operationally relevant, multi-domain environments. Experimentation results will facilitate Joint Staff analysis in the evaluation of the Joint Warfighting Concept, assist the Joint Requirements Oversight Counsel in requirements determination, and inform the Deputy's Management Action Group to make budget decisions that effect changes throughout the Department.</p> <p><b>FY 2024 Plans:</b></p>	0.000	0.000	0.000	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645351 / <i>Prototyping</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
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<p>Not Applicable</p> <p><b>FY 2025 Base Plans:</b> Not Applicable</p> <p><b>FY 2025 OCO Plans:</b> Not Applicable</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Not Applicable</p>					
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<p><b>Title:</b> Blended Wing Body - Next Generation Aircraft</p> <p><b>Description:</b> In partnership with other government agencies, allies, industry stakeholders, and private investors, the Blended Wing Body (BWB) aircraft design, manufacture, certification, and flight test campaign will demonstrate a 30% increase in aerodynamic efficiency over traditional tube-and-wing aircraft. For military applications, initial analysis shows increased combat capability for both aerial refueling and cargo aircraft (e.g. an aircraft with 30% increased aerodynamic efficiency, with current commercial off-the-shelf engine technology, can provide at least 60% increased aerial refueling offload at range). Project goals include flight demonstration of a large prototype BWB aircraft with advanced aerodynamic and structural design features for increased fuel efficiency and decreased noise footprint that scales up or down to enable acquisition by a broader community of government and industry stakeholders. This project works in coordination with DOD's Chief Sustainability Officer and the Air Force Operational Energy office.</p> <p><b>FY 2024 Plans:</b> Continue execution of prototype development of a blended wing body (BWB) aircraft. Utilize digital environment for airframe design iteration and risk reduction. Manufacturing technology maturation and risk reduction, as well as design integration of advanced composites, non-cylindrical pressure vessel technology expanding on work done by NASA, flight control laws, and nacelle-airframe optimization. Complete initial requirements generation phase, continue BWB aircraft multi-domain design optimization, structural analysis and component testing, and avionics and flight control system integration plan. Incorporate life-cycle sustainment cost considerations into design phase. Initial airworthiness and test planning for prototype BWB aircraft.</p> <p><b>FY 2025 Base Plans:</b> Execute prototype development of a blended wing body (BWB) aircraft. Creation of digital environment for airframe design iteration and risk reduction. Manufacturing technology maturation and risk reduction, as well as design integration of advanced composites, non-cylindrical pressure vessel technology expanding on work done</p>	0.000	88.221	88.257	-	88.257
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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645351 / <i>Prototyping</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
by NASA, flight control laws, and nacelle-airframe optimization. Complete initial requirements generation phase, continue BWB aircraft design, structural analysis and component testing, and avionics and flight control system integration plan. Incorporate life-cycle sustainment cost considerations into design phase. Initial airworthiness and test planning for prototype BWB aircraft.					
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Not Applicable					
<b>Accomplishments/Planned Programs Subtotals</b>	122.914	108.495	155.094	0.000	155.094

	FY 2023	FY 2024
<b><i>Congressional Add:</i></b> Program increase - Logistics Enhancements	0.000	0.000
<b><i>FY 2023 Accomplishments:</i></b> Not Applicable		
<b><i>FY 2024 Plans:</i></b> Not Applicable		
<b><i>Congressional Add:</i></b> Program increase - Alternative PNT phase III Demonstration	0.000	-
<b><i>FY 2023 Accomplishments:</i></b> Not Applicable		
<b>Congressional Adds Subtotals</b>	0.000	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 04 0604025F: <i>Rapid Defense Experimentation Reserve (RDER)</i>	-	154.300	-	-	-	-	-	-	-	Continuing	Continuing
• RDTE 04 0604009F: <i>AFWERX Prime</i>	41.909	-	-	-	-	-	-	-	-	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**  
Prototyping campaigns will aid the advancement and transition of advanced technologies by providing the credible evidence decision makers need to make sound strategic decisions and investment choices, to provide the warfighter with advanced capabilities. Air Force Futures, Air Force Plans and Programs, US Space Force Futures and Integration, and the Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics direct experimentation campaigns. The Air

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>	<b>Project (Number/Name)</b>
3600 / 4	PE 0604858F / <i>Tech Transition Program</i>	645351 / <i>Prototyping</i>

Force Strategic Development Planning and Experimentation (SDPE) Office located at Wright-Patterson Air Force Base, Ohio and Eglin Air Force Base manages and executes each experimentation campaign. Contracting strategies vary based on the activities of each campaign.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645351 / <i>Prototyping</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototyping Requirements	Various	Not specified. : Various	-	-		20.274	Mar 2024	-		-		-	Continuing	Continuing	-
Prototyping Campaign Global Lightning Commercial Space Internet Contract 1	C/CPFF	Raytheon : McKinney, TX	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Global Lightning Commercial Space Internet Contract 3	C/CPFF	SpaceX : Hawthorne, CA	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Global Lightning Commercial Space Internet Contract 4	C/CPFF	Northrop Grumman : San Diego, CA	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Global Lightning Commercial Space Internet Contract 5	C/CPFF	L3 : Salt Lake City, UT	-	-		-		-		-		-	0.000	0.000	-
Prototyping Campaign Global Lightning Commercial Space Internet Contract 8	C/CPFF	Lockheed Martin : Fort Worth, TX	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Base Defense Contract 1	C/CPFF	BAE : Minneapolis, MN	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Hawkeye	C/CPFF	Space X : Hawthorne, CA	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Hawkeye Contract 2	C/CPFF	Ball Aerospace : Boulder, CO	-	-		-		-		-		-	Continuing	Continuing	-
Experimentation Campaign Unmanned Adversary Air (ADAIR UX)	Various	Various : TBD	-	36.659	Jul 2023	-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Autonomous Attributable Aircraft Contract 1	C/CPFF	CALSPAN : Buffalo, NY	-	-		-		-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / Tech Transition Program	<b>Project (Number/Name)</b> 645351 / Prototyping
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototyping Campaign Autonomous Attributable Aircraft Contract 2	C/CPFF	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Autonomous Attributable Aircraft Contract 3	C/CPFF	Lockheed : Various	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Palletized Munitions (Rapid Dragon) Contract 1	C/CPFF	Lockheed Martin : Orlando, FL	-	20.000	May 2023	-		20.000	Dec 2024	-		20.000	Continuing	Continuing	-
Prototyping Campaign Saint Contract 1	TBD	TBD : TBD	-	-		-		11.295	Jan 2025	-		11.295	Continuing	Continuing	-
Regional Operating Picture	C/Various	Persistent Systems, LLC : New York, NY	-	32.000	May 2023	-		-		-		-	Continuing	Continuing	-
Congressional Add alternative PNT phase III demonstration	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Next Gen Large Aircraft (BWB)	MIPR	DIU : Mountain view, CA	-	-		79.518	Dec 2023	-		-		-	Continuing	Continuing	-
Next Gen Large Aircraft (BWB) Contract 1	TBD	TBD : TBD	-	-		-		88.257	Jan 2025	-		88.257	Continuing	Continuing	-
Enterprise Test Vehicle (ETV)	TBD	TBD : TBD	-	-		-		25.473	Jan 2025	-		25.473	Continuing	Continuing	-
Congressional Add Logistics Enhancements	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Rapid Defense Experimentation Reserve (RDER) CONCEAD	Various	Various : Various	-	0.000	Mar 2023	-		-		-		-	Continuing	Continuing	-
Rapid Defense Experimentation Reserve (RDER) Global Thunder	Various	Various : Various	-	0.000	Dec 2022	-		-		-		-	Continuing	Continuing	-
Rapid Defense Experimentation Reserve (RDER) Classified	Various	Various : Various	-	0.000	Nov 2022	-		-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / Tech Transition Program	<b>Project (Number/Name)</b> 645351 / Prototyping
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Rapid Defense Experimentation Reserve (RDER) TURUL	Various	Various : Various	-	0.000	Jan 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	88.659		99.792		145.025		-		145.025	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototyping Campaign Global Lightning Commercial Space Internet Support 1	MIPR	BAH : Tysons Corner, VA	-	-		-		-		-		-	0.000	0.000	-
Prototyping Campaign Global Lightning Commercial Space Internet Support 3	MIPR	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Base Defense Support 1	MIPR	JHU : Baltimore, MD	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Base Defense Support 3	MIPR	Navy : Dahlgren, VA	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Palletized Munitions (Rapid Dragon)	MIPR	Dahlgren Navy : Dahlgren, VA	-	1.500	Apr 2023	-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Palletized Munitions (Rapid Dragon) 2	MIPR	412 TW : Edwards AFB, CA	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Palletized Munitions Support	Various	Various : Various	-	2.000	Apr 2023	-		3.900	Dec 2024	-		3.900	Continuing	Continuing	-
Prototyping Campaign Autonomous Attributable Aircraft	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / Tech Transition Program	<b>Project (Number/Name)</b> 645351 / Prototyping
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototyping Campaign Podded Position Navigation and Timing Prototyping	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Regional Operating Picture	C/Various	Persistent Systems, LLC : New York, NY	-	5.500	Jan 2023	-		-		-		-	Continuing	Continuing	-
Next Generation Large Aircraft Test Support (BWB)	MIPR	Various : Various	-	-		3.053	Nov 2023	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	9.000		3.053		3.900		-		3.900	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototyping Campaign Global Lightning Commercial Space Internet	MIPR	Various : Various	-	-		-		-		-		-	0.000	0.000	-
Prototyping Campaign Palletized Munitions (Rapid Dragon)	MIPR	Various : Various	-	6.546		-		2.000	Dec 2024	-		2.000	Continuing	Continuing	-
Prototyping Campaign Base Defense	MIPR	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Autonomous Attributable Aircraft	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Hawkeye	MIPR	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
Regional Operating Picture	C/Various	Persistent Systems LLC : New York, NY	-	18.000	Jan 2023	-		-		-		-	Continuing	Continuing	-
Prototyping Campaign Podded Position	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / Tech Transition Program	<b>Project (Number/Name)</b> 645351 / Prototyping
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Navigation and Timing Prototyping															
Next Generation Large Aircraft (BWB)	MIPR	Various : Various	-	-		2.877	Jan 2024	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	24.546		2.877		2.000		-		2.000	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prototyping Contractor Support	Various	Various : Various	-	0.327	Sep 2023	0.698		0.400	Nov 2024	-		0.400	Continuing	Continuing	-
Prototyping Program Management Administration Costs	Various	Various : Various	-	0.382	Feb 2023	2.075	Nov 2023	3.769	Mar 2025	-		3.769	Continuing	Continuing	-
<b>Subtotal</b>			-	0.709		2.773		4.169		-		4.169	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	122.914	108.495	155.094	-	155.094	Continuing	Continuing	N/A

**Remarks**  
Additional details can be provided in the appropriate forum.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / Tech Transition Program	<b>Project (Number/Name)</b> 645351 / Prototyping
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b><i>Lifecycle Prototyping</i></b>																												
Lifecycle Prototyping																												
Commercial Space Internet (Global Lightning)																												
Base Defense - Hyper Velocity Gun Weapons System Prototype																												
Rapid Dragon (Palletized Munitions)																												
Regional Operating Picture																												
Autonomous Attributable Aircraft Prototyping																												
Hawkeye Prototyping																												
Congressional Add - Logistics Enhancements																												
Congressional Add - Alternative PNT Phase III demonstration																												
Rapid Defense Experimentation Reserve (RDER) CONCEAD																												
Rapid Defense Experimentation Reserve (RDER) Global Thunder																												
Rapid Defense Experimentation Reserve (RDER) Classified																												
Rapid Defense Experimentation Reserve (RDER) TURUL																												
<b><i>Blended Wing Body</i></b>																												
Air Vehicle Design																												
Airframe Manufacturing																												
Avionics and Flight Controls																												
Aircraft Integration and Tests																												
Structural Analyses and Tests																												
Aircraft Sub-Systems and Propulsion																												



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645351 / <i>Prototyping</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Lifecycle Prototyping</i></b>				
Lifecycle Prototyping	1	2023	4	2028
Commercial Space Internet (Global Lightning)	1	2023	4	2023
Base Defense - Hyper Velocity Gun Weapons System Prototype	1	2023	4	2023
Rapid Dragon (Palletized Munitions)	1	2023	4	2023
Regional Operating Picture	4	2023	4	2023
Autonomous Attritable Aircraft Prototyping	1	2023	4	2023
Hawkeye Prototyping	1	2023	4	2028
Congressional Add - Logistics Enhancements	1	2023	4	2023
Congressional Add - Alternative PNT Phase III demonstration	1	2023	4	2023
Rapid Defense Experimentation Reserve (RDER) CONCEAD	1	2023	4	2023
Rapid Defense Experimentation Reserve (RDER) Global Thunder	1	2023	4	2023
Rapid Defense Experimentation Reserve (RDER) Classified	1	2023	4	2023
Rapid Defense Experimentation Reserve (RDER) TURUL	1	2023	4	2023
<b><i>Blended Wing Body</i></b>				
Air Vehicle Design	1	2023	3	2025
Airframe Manufacturing	2	2024	1	2026
Avionics and Flight Controls	2	2023	1	2026
Aircraft Integration and Tests	1	2026	3	2026
Structural Analyses and Tests	2	2023	4	2026
Aircraft Sub-Systems and Propulsion	2	2023	1	2026
Flight Simulations	2	2023	4	2026
Ground Tests (including wind tunnel testing)	1	2025	4	2026

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**Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645351 / <i>Prototyping</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Loads Tests	1	2026	3	2026
Flight Readiness, Demonstration, and Initial Test Activities	3	2026	1	2027

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>				<b>Project (Number/Name)</b> 645352 / <i>Architecture Design and Evaluation</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
645352: <i>Architecture Design and Evaluation</i>	-	0.000	7.078	10.140	0.000	10.140	10.527	11.309	11.825	12.071	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

In September 2022, the Secretary of the Air Force (SecAF) directed the standup of the DAF Integrating Program Executive Office for Command, Control, Communication and Battle Management (DAF PEO C3BM). The construct emerged out of the Operational Imperatives (OI) analysis that identified a significant need for C3BM integration and a greater level of systems engineering and technical discipline across the enterprise to ensure the effectiveness of ABMS in supporting DAF operations. Notably, DAF PEO C3BM combines the previous efforts of the DAF Rapid Capabilities Office (RCO) ABMS program and the DAF Chief Architect Office (CAO). Furthermore, DAF PEO C3BM works in a federated manner with other PEOs across the DAF with C3BM equity to orchestrate end-to-end capability delivery. By bringing the ABMS and CAO portfolio of programs and authorities under a single PEO and then conferring unto that PEO the responsibility to integrate broader DAF battle management and C2 capabilities, one organization now has the architectural authorities to direct technical integration activities across the DAF while also having the acquisition authorities of a PEO to execute organic materiel solutions to field a survivable, distributable command and control capability into the integrated DAF BATTLE NETWORK.

Architecture Design and Evaluation is directed by the DAF PEO C3BM with oversight by the Secretary of the Air Force along with the Chief of Staff of the Air Force, Chief of Space Operations, and Senior Acquisition Executive. This activity is supported by the Air Force Research Laboratory.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Department of the Air Force Tech Architecture. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F, 0605831F and/or 0604858F.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> DAF Architecture Design and Integration	0.000	7.078	10.140	-	10.140
<b>Description:</b> DAF PEO C3BM combined the roles of the Chief Architect and the Chief Engineer into a single office called the Architecture and Systems Engineering (ASE) office, which is responsible for the technical integrity of the DAF BATTLE NETWORK as we integrate ABMS capabilities, the rest of the DAF's C2 systems,					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645352 / <i>Architecture Design and Evaluation</i>

**B. Accomplishments/Planned Programs (\$ in Millions)**

and other Services' capabilities under JADC2. Architecture integration in system-of-systems mission threads and environments is critical to deliberately advancing the DAF's technological edge by informing architecture design, acquisition investments, system requirements for future capabilities, and acquisition baseline updates for current systems.

Architecture Design and Evaluation provides the subject matter expertise to develop mission-focused architectures to enable cross-cutting architecture development across Program Executive Offices, Major Commands, and Space Deltas. Architecture Design and Evaluation analyzes science, technology, research, development, and experimentation enterprises to determine the technical and operational feasibility of new technical concepts.

***FY 2024 Plans:***

- Provide subject matter expertise and product development capability to develop and maintain:
- Digital engineering - Create or leverage common way for all the mission integration teams to aggregate various data products and make them available to the community. Fund Model-Based Systems Engineering at multiple security levels, to include TS/SCI and SAP level, for all ASE and DAF/OSD/Joint partners. Develop Modeling & Simulation capabilities to enable evaluation of C3BM systems.
  - Mission Domain Architectures and Mission Integration Teams - Support operational analysis, architecture modeling, systems engineering, risk reduction, and architecture test and evaluation.
  - Operational Response Team - Support operational integration and experimentation of C3BM Digital Infrastructure development.

***FY 2025 Base Plans:***

- Continue to provide subject matter expertise and product development capability to develop and maintain:
- Continue digital engineering - Create or leverage common way for all the mission integration teams to aggregate various data products and make them available to the community. Fund Model-Based Systems Engineering at multiple security levels, to include TS/SCI and SAP level, for all ASE and DAF/OSD/Joint partners. Develop Modeling & Simulation capabilities to enable evaluation of C3BM systems.
- Continue Mission Domain Architectures and Mission Integration Teams - Support operational analysis, architecture modeling, systems engineering, risk reduction, and architecture test and evaluation.
- Continue Operational Response Team - Support operational integration and experimentation of C3BM Digital Infrastructure development.

***FY 2024 to FY 2025 Increase/Decrease Statement:***

<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645352 / <i>Architecture Design and Evaluation</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
FY 2025 funding increased from FY 2024 by \$3.068 million due to adding SME expertise for architecture development and product development to ensure the technical integrity of the system of systems integration across air, space, maritime, land, and homeland defense domains to integrate across PEO, Major Commands and Space Deltas.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	7.078	10.140	-	10.140

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 04 0604006F: <i>Dept of the Air Force Tech Architecture</i>	0.000	2.620	2.899	-	2.899	3.138	3.919	4.281	-	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / Tech Transition Program	<b>Project (Number/Name)</b> 645352 / Architecture Design and Evaluation
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C3BM Architecture Development	Various	Various : Various	-	-		6.000	Oct 2023	8.000		-		8.000	Continuing	Continuing	-
<b>Subtotal</b>			-	-		6.000		8.000		-		8.000	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C3BM ORT Evaluation	Various	Various : Various	-	-		0.078	Oct 2023	1.000		-		1.000	Continuing	Continuing	-
<b>Subtotal</b>			-	-		0.078		1.000		-		1.000	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration	Various	Various : Various	-	-		1.000	Oct 2023	1.140		-		1.140	Continuing	Continuing	-
<b>Subtotal</b>			-	-		1.000		1.140		-		1.140	Continuing	Continuing	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	7.078	10.140	-	10.140	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645352 / <i>Architecture Design and Evaluation</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>DAFTADIE Product Development</b>	
C3BM Architecture Development	[REDACTED]
<b>Test and Evaluation</b>	
C3BM ORT Evaluation	[REDACTED]
<b>Management Services ( in Millions)</b>	
Program Management Administration	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604858F / <i>Tech Transition Program</i>	<b>Project (Number/Name)</b> 645352 / <i>Architecture Design and Evaluation</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>DAFTADIE Product Development</i></b>				
C3BM Architecture Development	1	2024	4	2028
<b><i>Test and Evaluation</i></b>				
C3BM ORT Evaluation	1	2024	4	2028
<b><i>Management Services ( in Millions)</i></b>				
Program Management Administration	1	2024	4	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604860F <i>I Operational Energy and Installation Resilience</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	24.603	46.305	63.194	0.000	63.194	43.550	28.821	20.058	19.769	Continuing	Continuing
644860: <i>Operational Energy and Installation Resilience</i>	-	24.603	46.305	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
644861: <i>Operational Energy</i>	-	0.000	0.000	37.799	0.000	37.799	25.499	9.172	8.159	17.829	Continuing	Continuing
644862: <i>Installation Resiliency</i>	-	0.000	0.000	25.395	0.000	25.395	18.051	19.649	11.899	1.940	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The Operational Energy and Installation Resilience program develops, matures, prototypes, demonstrates, and assesses technologies, software, and processes for decreasing operational energy risk and increasing installation resilience. The Air Force is the DOD's (Department of Defense) largest consumer of operational energy, and requires resilient installations as power projection platforms to execute its missions. Technology transition, agile software development, and process integration efforts with a focus in these areas enable the Air Force to optimize operational energy use for maximum combat capability and mitigate multi-domain energy threats to installations. The objective of this program is to prioritize, validate, and facilitate implementation of validated solutions.

Starting in FY2025, Budget, Program, and Activity Code (BPAC) 644860: Operational Energy and Installation Resilience is broken out into two BPACs to provide additional program visibility: 644861: Operational Energy and 644862: Installation Resilience. On-going programs transferred from BPAC 644860 into these two BPACs are not new starts.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver science and technology capabilities. The use of such program funds would be in addition to the civilian pay expense budgeted in program element 0601102F, 0602020F, 0602102F, 0602201F, 0602202F, 0602203F, 0602204F, 0602602F, 0602605F, 0602788F, 1206601SF, and 0602298F.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	25.500	46.305	50.396	0.000	50.396
Current President's Budget	24.603	46.305	63.194	0.000	63.194
Total Adjustments	-0.897	0.000	12.798	0.000	12.798
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.897	0.000			
• Other Adjustments	0.000	0.000	12.798	0.000	12.798

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 644860: *Operational Energy and Installation Resilience*

Congressional Add: *Hydrogen Fuel Cell Microgrid Technology*

Congressional Add Subtotals for Project: 644860

Congressional Add Totals for all Projects

	<b>FY 2023</b>	<b>FY 2024</b>
	9.648	0.000
Congressional Add Subtotals for Project: 644860	9.648	0.000
Congressional Add Totals for all Projects	9.648	0.000

**Change Summary Explanation**

FY2025 \$12.798M adjustment is a reprogramming action from program element 0604858F in program element 0604860F.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>				<b>Project (Number/Name)</b> 644860 / <i>Operational Energy and Installation Resilience</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
644860: <i>Operational Energy and Installation Resilience</i>	-	24.603	46.305	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Operational Energy and Installation Resilience program develops, matures, prototypes, demonstrates, and assesses technologies, software, and processes for decreasing operational energy risk and increasing installation resilience. The Air Force is the DOD's (Department of Defense) largest consumer of operational energy, and requires resilient installations as power projection platforms to execute its missions. Technology transition, agile software development, and process integration efforts with a focus in these areas enable the Air Force to optimize operational energy use for maximum combat capability and mitigate multi-domain energy threats to installations. The objective of this program is to prioritize, validate, and facilitate implementation of validated solutions.

Starting in FY2025, Budget, Program, and Activity Code (BPAC) 644860: Operational Energy and Installation Resilience is broken out into two BPACs to provide additional program visibility: 644861: Operational Energy and 644862: Installation Resilience. On-going programs transferred from BPAC 644860 into these two BPACs are not new starts.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver science and technology capabilities. The use of such programs funds would be in addition to the civilian pay expense budgeted in program element 0601102F, 0602020F, 0602102F, 0602201F, 0602202F, 0602203F, 0602204F, 0602602F, 0602605F, 0602788F, 1206601SF, and 0602298F.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Installation Resilience	0.000	7.400	0.000
<b>Description:</b> The Installation Resilience program develops, matures, prototypes, demonstrates, and assesses technologies, software, and processes focused on increasing installation resilience. The Air Force requires resilient installations as power projection platforms to execute its missions. Technology transition, agile software development, and process integration efforts with a focus on resilience will enable the Air Force to mitigate multi-domain energy threats to installations. The objective of this program is to prioritize, validate, and facilitate implementation of validated solutions.			
<b>FY 2024 Plans:</b> Continue to prototype, integrate, demonstrate, and assess installation energy and resilience technologies and methodologies. Efforts include prototype installation resilience energy storage solutions, prototype flightline modernization technologies including common support equipment (e.g. light carts, flightline generators) enabling Agile Combat Employment and Adaptive Operations in Contested Environments, assessing means of securing energy at the tactical edge, and support establishment of a digital			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644860 / <i>Operational Energy and Installation Resilience</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>platform for installation/mission resilience integration. These efforts expand the installation resilience impacts of current efforts and integrate energy logistics into mission readiness.</p> <p><b>FY 2025 Plans:</b> Efforts transitioned to and executed in project 644862 Installation Resilience starting in FY2025.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding decreased compared to FY 2024 due to transition of efforts to project 644862 Installation Resilience starting in FY2025 to increase visibility into the project.</p>				
<p><b>Title:</b> Operational Energy</p> <p><b>Description:</b> Operational energy efforts seek to maximize combat capability by reducing overall DAF mission energy demand. Efforts in this program can include prototyping, demonstration, and transition of technologies, software, and processes that maximize combat capability by optimizing the following areas: platform energy use, mission planning and execution, propulsion sustainment, and energy logistics. Energy education, energy-informed wargaming, digital engineering, and modeling and simulation efforts typically support these areas. Specific examples of prototype and demonstration projects that optimize energy use and decrease energy intensity include legacy aircraft drag reduction technologies, alternate-fuel propulsion systems, ultra-efficient airframe designs, mission scheduling software, air-asset allocation tools, cargo load planning tools, and turbine engine sustainment enhancements for increased fuel efficiency.</p> <p>While similar efforts may be found in other program elements, Operational Energy projects in these technology and process areas are viewed through an "energy lens," specifically geared toward cost-effectively optimizing energy use to maximize combat capability. Ideally, as the Air Force progresses toward an energy-aware culture, all acquisition efforts will incorporate this tenet from the beginning of, and throughout, the acquisition life cycle. This program aims to advance such a culture through successful project execution.</p> <p><b>FY 2024 Plans:</b> Continued software development focused on concurrently increasing aircraft availability, optimizing mobility aircraft allocation, optimizing aircrew scheduling, and optimizing cargo load planning projects that will be enhanced by additional effort in combat air forces training scheduling, advanced data analytics systems for strategic airlift assets, air refueling optimization, and aerial refueling aircraft availability. Additional efforts include augmented reality training tools, aircraft drag reduction technology prototyping and demonstrations, advanced engine sustainment techniques, and mobile applications to support command and control of mobility aircraft. These efforts expand the readiness impacts of current efforts and integrate energy logistics in both training and operations.</p> <p><b>FY 2025 Plans:</b></p>		14.955	38.905	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644860 / <i>Operational Energy and Installation Resilience</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Efforts continues to be executed in project 644861 Operational Energy starting in FY2025.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 funding decreased compared to FY 2024 due to transition of efforts to project 644861 Operational Energy starting in FY2025 to increase visibility into the project.			
<b>Accomplishments/Planned Programs Subtotals</b>	14.955	46.305	0.000

	FY 2023	FY 2024
<b><i>Congressional Add:</i></b> Hydrogen Fuel Cell Microgrid Technology	9.648	0.000
<b><i>FY 2023 Accomplishments:</i></b> Develop and test hydrogen fuel cell microgrid technology.		
<b><i>FY 2024 Plans:</i></b> No funding requested.		
<b>Congressional Adds Subtotals</b>	9.648	0.000

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The efforts within this program element will employ multiple different acquisition strategies to include Federal Acquisition Regulation (FAR)-based contracts and Other Transactional Authority agreements.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644860 / <i>Operational Energy and Installation Resilience</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mobility Air Force Long Range Planning and Allocation Tools	Various	Various : Various	-	5.390	Sep 2023	0.980	Jul 2024	-		-		-	Continuing	Continuing	-
Cargo Optimization - Improved Load Planning	Various	Various : Various	-	0.892	Oct 2023	2.950	Jul 2024	-		-		-	Continuing	Continuing	-
Puckboard Scheduling Engine	Various	Various : Various	-	5.391	Sep 2023	2.950	Jul 2024	-		-		-	Continuing	Continuing	-
Energy Supply Chain Risk Model	Various	Various : Various	-	2.242	Sep 2023	0.980	Aug 2024	-		-		-	Continuing	Continuing	-
KC-46 Winglets	Various	Various : Various	-	-		9.800	Jun 2024	-		-		-	Continuing	Continuing	-
Aircraft Engine Wash	Various	Various : Various	-	-		2.950	Apr 2024	-		-		-	Continuing	Continuing	-
Cargo Optimization-Improved Load Planning Phase II	Various	Various : Various	-	-		2.950	Apr 2024	-		-		-	Continuing	Continuing	-
C-17 Data Bus Recording System (DBRS) and Analysis	Various	Various : Various	-	-		2.950	Apr 2024	-		-		-	Continuing	Continuing	-
Aviato (CAF Scheduling)	Various	Various : Various	-	-		2.950	Jun 2024	-		-		-	Continuing	Continuing	-
Air Refueling Optimization	Various	Various : Various	-	-		2.950	Jul 2024	-		-		-	Continuing	Continuing	-
KC-135 and C-17 Warfighter Posture Predictive Logistics	Various	Various : Various	-	-		1.765	Apr 2024	-		-		-	Continuing	Continuing	-
C-17 Mobile Mission Computer Application for EFB	Various	Various : Various	-	-		0.980	Jun 2024	-		-		-	Continuing	Continuing	-
Hybrid Fuel Cell	Various	Various : Various	-	-		2.500	May 2024	-		-		-	Continuing	Continuing	-
Augmented Reality Adversary Transformation	Various	Various : Various	-	-		2.950	Apr 2024	-		-		-	Continuing	Continuing	-
Energy for Tactical Edge	Various	Various : Various	-	-		1.800	May 2024	-		-		-	Continuing	Continuing	-
Mission Resilience Digital Transformation	Various	Various : Various	-	-		2.500	Jun 2024	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 4				PE 0604860F / Operational Energy and Installation Resilience				644860 / Operational Energy and Installation Resilience							
<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Hydrogen Fuel Cell Microgrid	Various	Various : Various	-	9.648	Jan 2024	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	23.563		44.905		-		-		-	Continuing	Continuing	N/A
<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Direct Cite Authority Civilian Pay	Allot	Not specified: TBD : TBD	-	0.440	Sep 2023	0.600	Sep 2024	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.440		0.600		-		-		-	Continuing	Continuing	N/A
<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Energy and Installation Resilience Management Administration Costs	Various	Various : Various	-	0.600	Jun 2024	0.800	Jun 2025	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.600		0.800		-		-		-	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	24.603		46.305		-		-		-	Continuing	Continuing	N/A
<b>Remarks</b>															
Removed/transitioned lines: C-17 ABDR - Transitioned to Program Office in FY 2023 (PE 0401130F) C-17 Drag Reduction Other - Transitioned to Program Office FY 2023 (PE 0401130F) C-130 ABDR - Transitioned to Program Office in FY 2023 (PE 0401115F) KC-135 ABDR - Transitioned to Program Office in FY 2023 (PE 0401218F)															

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644860 / <i>Operational Energy and Installation Resilience</i>
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	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
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<p>KC-135 VW - Transitioned to Program Office in FY 2023 (PE 0401218F)                      Mobility Aircraft Control Surface Analysis - Transitioned to the Operational Energy Capability Improvement Fund (OECIF) in FY 2023</p>									
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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>			<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644860 / <i>Operational Energy and Installation Resilience</i>	

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Operational Energy</i></b>	
All	
<b><i>Installation Resilience</i></b>	
All	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644860 / <i>Operational Energy and Installation Resilience</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Operational Energy</b>				
All	1	2023	4	2025
<b>Installation Resilience</b>				
All	1	2023	2	2026

**Note**

Operational Energy & Installation Resilience efforts broken out into separate projects, 644861 - Operational Energy and 644862 - Installation Resilience starting in FY2025 to provide additional visibility.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>				<b>Project (Number/Name)</b> 644861 / <i>Operational Energy</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
644861: <i>Operational Energy</i>	-	0.000	0.000	37.799	0.000	37.799	25.499	9.172	8.159	17.829	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Operational Energy program develops, matures, prototypes, and demonstrates technologies, software, and processes focused on decreasing operational energy risk. The Air Force is DOD's largest consumer of operational energy. Technology transition, agile software development, and process integration efforts with a focus in these areas enable the Air Force to optimize operational energy use for maximum combat capability, and mitigate multi-domain energy threats to installations. The objective of this program is to prioritize, validate, and facilitate implementation of validated solutions.

Starting in FY2025, Budget, Program, and Activity Code (BPAC) 644860: Operational Energy and Installation Resilience is broken out into two BPACs to provide additional program visibility: 644861: Operational Energy and 644862: Installation Resilience. On-going programs transferred from BPAC 644860 into these two BPACs are not new starts

This program element may include necessary civilian pay expenses required to manage, execute, and deliver science and technology capabilities. The use of such programs funds would be in addition to the civilian pay expense budgeted in program element 0601102F, 0602020F, 0602102F, 0602201F, 0602202F, 0602203F, 0602204F, 0602602F, 0602605F, 0602788F, 1206601SF, and 0602298F.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Operational Energy	-	0.000	37.799
<p><b>Description:</b> Operational energy efforts seek to maximize combat capability by reducing overall DAF mission energy demand. Efforts in this program can include prototyping, demonstration, and transition of technologies, software, and processes that maximize combat capability by optimizing the following areas: platform energy use, mission planning and execution, propulsion sustainment, and energy logistics. Energy education, energy-informed wargaming, digital engineering, and modeling and simulation efforts typically support these areas. Specific examples of prototype and demonstration projects that optimize energy use and decrease energy intensity include legacy aircraft drag reduction technologies, alternate-fuel propulsion systems, ultra-efficient airframe designs, mission scheduling software, air-asset allocation tools, cargo load planning tools, and turbine engine sustainment enhancements for increased fuel efficiency.</p> <p>While similar efforts may be found in other program elements, Operational Energy projects in these technology and process areas are viewed through an "energy lens," specifically geared toward cost-effectively optimizing energy use to maximize combat capability. Ideally, as the Air Force progresses toward an energy-aware culture, all acquisition efforts will incorporate this tenet</p>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644861 / <i>Operational Energy</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
<p>from the beginning of, and throughout, the acquisition life cycle. This program aims to advance such a culture through successful project execution.</p> <p><b>FY 2024 Plans:</b> Efforts executed in project 644860, Operational Energy and Installation Resilience in FY2024.</p> <p><b>FY 2025 Plans:</b> Continued software development focused on concurrently increasing aircraft availability, optimizing mobility aircraft allocation, optimizing aircrew scheduling, and optimizing cargo load planning projects that will be enhanced by additional effort in combat air forces training scheduling, advanced data analytics systems for strategic airlift assets, air refueling optimization, and aerial refueling aircraft availability. Additional efforts include augmented reality training tools, aircraft drag reduction technology prototyping and demonstrations, advanced engine sustainment techniques, and mobile applications to support command and control of mobility aircraft. These efforts expand the readiness impacts of current efforts and integrate energy logistics in both training and operations.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding increased compared to FY 2024 by 37.799M due to establishment of this project and transition of Operational Energy efforts from project 644860 Operational Energy &amp; Installation Resilience starting in FY 2025 to provide additional visibility.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	-	0.000	37.799

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The efforts within this program element are variable and will employ multiple different acquisition strategies to include Federal Acquisition Regulation (FAR)-based contracts and Other Transactional Authority agreements.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644861 / <i>Operational Energy</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operational Energy	Various	Various : Various	-	-	-	-		1.757	Feb 2025	-		1.757	Continuing	Continuing	-
Aviato	Various	Various : Various	-	-	-	-		3.000	Nov 2024	-		3.000	Continuing	Continuing	-
KC-46 Winglet Development	Various	Various : Various	-	-	-	-		5.000	Feb 2025	-		5.000	Continuing	Continuing	-
Augmented Reality Adversary Air	Various	Various : Various	-	-	-	-		3.000	Dec 2024	-		3.000	Continuing	Continuing	-
KC-46 Winglets	Various	Various : Various	-	-	-	-		6.000	Jan 2025	-		6.000	Continuing	Continuing	-
C-17 Advanced Winglets	Various	Various : Various	-	-	-	-		12.000	Mar 2025	-		12.000	Continuing	Continuing	-
Aircraft Refueling Optimization	Various	Various : Various	-	-	-	-		3.000	Jan 2025	-		3.000	Continuing	Continuing	-
C-17 Mobile Mission Computer Application for EFB	Various	Various : Various	-	-	-	-		1.000	Nov 2024	-		1.000	Continuing	Continuing	-
KC-135 and C-17 Warfighter Posture Predictive Logistics	Various	Various : Various	-	-	-	-		1.800	Feb 2025	-		1.800	Continuing	Continuing	-
<b>Subtotal</b>			-	-	-	-		36.557		-		36.557	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority Civilian Pay	Allot	Not Specified: TBD : TBD	-	-	-	-		0.425	Sep 2026	-		0.425	Continuing	Continuing	-
<b>Subtotal</b>			-	-	-	-		0.425		-		0.425	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644861 / <i>Operational Energy</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Operational Energy</i></b>	
All	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644861 / <i>Operational Energy</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Operational Energy</i>				
All	1	2023	4	2029

**Note**  
Additional details can be provided in the appropriate format.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>				<b>Project (Number/Name)</b> 644862 / <i>Installation Resiliency</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
644862: <i>Installation Resiliency</i>	-	0.000	0.000	25.395	0.000	25.395	18.051	19.649	11.899	1.940	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Installation Resilience program develops, matures, prototypes, and demonstrates technologies, software, and processes focused on increasing installation resilience. The Air Force requires resilient installations to execute its missions. Technology transition, agile software development, and process integration efforts with a focus in these areas enable the Air Force to optimize operational energy use for maximum combat capability, and mitigate multi-domain energy threats to installations. The objective of this program is to prioritize, validate, and implement solutions to that end.

Starting in FY2025, Budget, Program, and Activity Code (BPAC) 644860: Operational Energy and Installation Resilience is broken out into two BPACs to provide additional program visibility: 644861: Operational Energy and 644862: Installation Resilience. On-going programs transferred from BPAC 644860 into these two BPACs are not new starts.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver science and technology capabilities. The use of such programs funds would be in addition to the civilian pay expense budgeted in program element 0601102F, 0602020F, 0602102F, 0602201F, 0602202F, 0602203F, 0602204F, 0602602F, 0602605F, 0602788F, 1206601SF, and 0602298F.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Installation Resilience	-	0.000	25.395
<b>Description:</b> Improve installation resilience through prototyping, integration, and demonstration of energy technologies. The technologies will be assessed in an operational systems environment.			
<b>FY 2024 Plans:</b> Effort executed in project 644860 in FY 2024.			
<b>FY 2025 Plans:</b> Continue to prototype, integrate, demonstrate, and assess installation energy and resilience technologies and methodologies; additional efforts will prototype installation resilience energy storage solutions, support the establishment of a digital platform for installation/mission resilience, prototype flightline modernization technologies, and assess means of securing energy at the tactical edge. These efforts expand the installation resilience impacts of current efforts and integrate energy logistics into mission readiness.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644862 / <i>Installation Resiliency</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
FY 2025 funding increased compared to FY 2024 by 25.395M due to establishment of this project and transition of Installation Resilience efforts from project 644860 Operational Energy & Installation Resilience starting in FY2025 to provide additional visibility.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	0.000	25.395

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The efforts within this program element are variable and will employ multiple different acquisition strategies. In general, projects will seek to inform senior decision makers regarding the suitability of technology and process transition. As an example, for legacy aircraft drag reduction technologies, solutions will be prototyped and demonstrated via ground and/or flight assessments; drag reduction and fuel savings estimates will be validated or refined, suitability for fleet implementation will be assessed (maintainability, return-on-investment, etc.), and recommendations for transition will be made. Both FAR-based contracts and Other Transactional Authority will be utilized.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644862 / <i>Installation Resiliency</i>
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<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
Mission Resilience Digital Transformation	Various	Various : Various	-	-		-		1.800	Jan 2025	-		1.800	Continuing	Continuing	-
Energy for Tactical Edge	Various	Various : Various	-	-		-		2.991	Jan 2025	-		2.991	Continuing	Continuing	-
Hybrid Fuel Cell	Various	Various : Various	-	-		-		1.500	Jan 2025	-		1.500	Continuing	Continuing	-
Large Capacity Energy Storage	Various	Various : Various	-	-		-		2.000	Jan 2025	-		2.000	Continuing	Continuing	-
Solar at Tinker AFB	Various	Various : Various	-	-		-		1.300	Jan 2025	-		1.300	Continuing	Continuing	-
Grid Controller	Various	Various : Various	-	-		-		1.000	Jan 2025	-		1.000	Continuing	Continuing	-
Passive Cooling	Various	Various : Various	-	-		-		0.500	Jan 2025	-		0.500	Continuing	Continuing	-
Gray Water Recovery and Reuse	Various	Various : Various	-	-		-		0.500	Jan 2025	-		0.500	Continuing	Continuing	-
Small port. potable H2O purification Redux	Various	Various : Various	-	-		-		1.200	Jan 2025	-		1.200	Continuing	Continuing	-
Deployable, Efficient Solid Waste Redux	Various	Various : Various	-	-		-		1.300	Jan 2025	-		1.300	Continuing	Continuing	-
Flightline Electrification Pilot	Various	Various : Various	-	-		-		10.000	Jan 2025	-		10.000	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		24.091		-		24.091	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
Direct Cite Authority Civilian Pay	Allot	Not Specified: TBD : TBD	-	-		-		0.425	Sep 2026	-		0.425	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.425		-		0.425	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644862 / <i>Installation Resiliency</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Installation Resilience</i></b>	
All	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0604860F / <i>Operational Energy and Installation Resilience</i>	<b>Project (Number/Name)</b> 644862 / <i>Installation Resiliency</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Installation Resilience</i></b>				
All	1	2023	4	2029

**Note**  
Can provide additional details in appropriate format.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605057F / <i>Next Generation Air-refueling System</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	7.014	0.000	7.014	0.000	0.000	0.000	0.000	Continuing	Continuing
640010: <i>Next Generation Air-refueling System (NGAS)</i>	-	0.000	0.000	7.014	0.000	7.014	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Upon passage of FY 2024 appropriations, PE 0605057F, Next Generation Air-Refueling System (NGAS), Project 652430, Next Generation Tanker Development, Budget Activity 5, future tanker support funding will be transferred to PE 0605057F, Next Generation Air-Refueling System (NGAS), Project 640010, Next Generation Air-refueling System (NGAS), Budget Activity 4. This is a transfer of funding from Budget Activity 5 to Budget Activity 4, in order to provide transparency to the pre-MDAP NGAS program.

**A. Mission Description and Budget Item Justification**

NGAS is an accelerated, advanced air refueling system that meets the future needs of the joint force. NGAS will deliver adaptive and agile platform(s) and mission systems as part of a tanker Family of Systems by the mid-2030s. Air Mobility Command is currently leading an Analysis of Alternatives (AoA) effort that shapes requirements, refines the program's acquisition strategy, and determines the technology development timeline.

The Air Force's assessment includes clean sheet design(s) and purpose-built aircraft to address projected threats and needed capabilities and leverages benefits of full and open competition. The mission systems will include platform agnostic communications, threat agnostic defensive systems, and agile mission execution. The Department of the Air Force (DAF) will also identify opportunities to integrate the mission systems on KC-46A and Tanker Recapitalization aircraft.

In FY 2025, the DAF will fund post-AoA studies, update tanker models and run high-fidelity modeling and simulation to further exercise joint warfighting concepts and plans. In addition, the AoA results will be validated, leading to initial requirements documented in a draft Capabilities Development Document (CDD). Additionally, prep for the acquisition strategy for the Technology, Maturation and Risk Reduction (TMRR) phase and Milestone A preparation will continue. The DAF is awaiting the AoA results before determining NGAS development funding.

Acquisition Agility Act (AAA) Prototyping separate from a Program of Record (POR).

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F and 0606398F. In FY 2023 \$0.000 million was expended for civilian pay expenses in this program element, and in FY 2024 \$0.000 million is forecast for civilian pay expenses in this program element.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605057F / <i>Next Generation Air-refueling System</i>
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This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	7.014	0.000	7.014
Total Adjustments	0.000	0.000	7.014	0.000	7.014
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	7.014	0.000	7.014

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Support	-	-	7.014
<b>Description:</b> NGAS			
<b>FY 2025 Plans:</b> Continue studies and analyses, update tanker models, run high fidelity modeling and simulation, continue acquisition planning, pre-milestone activities, requirements development, acquisition strategy refinement and RFP development for NGAS tanker development and other future tanker development efforts.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increase due to acquisition planning, pre-milestone activities, requirements development, acquisition strategy refinement and contracting activities.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	7.014

<b>D. Other Program Funding Summary (\$ in Millions)</b>											<b>Cost To</b>
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Complete</b>	<b>Total Cost</b>
• RDTE 05 0605057F: <i>Next Generation Air-refueling System</i>	-	7.928	-	-	-	-	-	-	-	0.000	7.928

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605057F / <i>Next Generation Air-refueling System</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**

**E. Acquisition Strategy**

The NGAS platform(s) will be clean sheet design(s) and purpose-built aircraft to address projected threats and needed capabilities and leverages benefits of full and open competition. The yet-to-be determined NGAS acquisition strategy will be based on a future approved CDD requirements and Federal Acquisitions Regulation/ Defense Federal Acquisition Regulation Supplement (FAR/DFARS) compliance. However, the notional acquisition approach is to award Technology Maturation Risk Reduction contracts that mature and develop key future technologies with multiple vendors. In addition, Science and Technology efforts will be funded to develop critical path technologies needed to meet attributes defined in the Advanced Air Refueling Initial Capabilities Document (ICD) to a Technology Readiness Level greater than 5.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0605057F / <i>Next Generation Air-refueling System</i>	<b>Project (Number/Name)</b> 640010 / <i>Next Generation Air-refueling System (NGAS)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>NGAS</b>	
Mission Support and Studies and Analysis	██

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0605057F / <i>Next Generation Air-refueling System</i>	<b>Project (Number/Name)</b> 640010 / <i>Next Generation Air-refueling System (NGAS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>NGAS</b>				
Mission Support and Studies and Analysis	1	2025	2	2026

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605164F / <i>Air Refueling Capability Modernization</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	11.281	19.400	13.661	0.000	13.661	188.577	243.700	97.000	79.758	Continuing	Continuing
645164: <i>Continued Tanker Recapitalization RDT&amp;E</i>	-	11.281	19.400	13.661	0.000	13.661	188.577	243.700	97.000	79.758	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2023, PE 0401221F, KC-46A Tanker Squadrons, Project 655KCY, KC-Y efforts were transferred to PE 0605164F, Air Refueling Capabilities Modernization, Project 645164, Continued Tanker Recapitalization RDT&E.

**A. Mission Description and Budget Item Justification**

Accelerating future tanker capability and recapitalizing the Air Force's aging tanker fleet is a top priority for the Department of the Air Force. In FY 2024, the Department of the Air Force broke from its previous recapitalization approaches (KC-X, KC-Y, KC-Z) in favor of more agile methods, prioritizing and accelerating the right capabilities to deliver fuel to the fight. This new approach continues Tanker Recapitalization (PE 0605164F) efforts between KC-46A (PE 040221F) and the Next Generation Air-refueling System (NGAS) (PE 0605057F). The Department of the Air Force (DAF) will use the Tanker Recapitalization program to replace up to 15 KC-135s legacy tankers per year as they retire. The total number of Tanker Recap aircraft procured will be influenced by the FY 2024 NGAS Analysis of Alternatives and dependent on NGAS's first delivery.

The Tanker Recapitalization program will deliver an air refuelable, commercial derivative, limited development tanker that provides fuel to U.S. and coalition aircraft receivers via a boom or drogue system that can operate in day/night and adverse weather conditions to enable deployment, employment, sustainment, and redeployment of U.S. and coalition forces. The Tanker Recapitalization program will have communication, navigation, and surveillance equipment to support worldwide operations and refueling competences in chemical, biological and hostile threat environments through self-defense/protection (both active and passive) capabilities to include the necessary battlespace awareness to mitigate threats.

The dynamics and mission urgency of the post-production (post DD-250) environment require the program to maintain a flexible and responsive posture to support a broad range of mission support needs. Tanker Recapitalization program will identify, design, develop, integrate, verify, certify, produce, install, field, and sustain a comprehensive range of non-recurring and recurring post-production, air vehicle enhancements and field support needs to include but not limited to programmed Mobility Air Force (MAF) requirements, Combatant Commander Joint or Urgent Operational Needs (JUON/UON), non-programmed Federal Aviation Administration (FAA) directives, requirements identified and supported by HHQ Enterprise Capability Collaboration Teams (i.e., High Value Airborne Asset [HVAA], Air Superiority 2030, and Multi-Domain Command and Control [MDC2]), or correction of field deficiencies.

Tanker Recapitalization program will develop, field, and sustain warfighter capabilities to meet evolving threats and mission support requirements through Block or discrete modification or modernization programs depending on mission urgency, available funding, and programmatic and technical risks. Post-production requirements

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605164F / <i>Air Refueling Capability Modernization</i>
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may include but not limited to avionics and structural systems/architecture and subsystem updates, general mission equipment updates and procurement, general sustainment support, studies and analyses, future tanker requirements simulation and training, and correction of field deficiencies.

Project 645164, Continued Tanker Recapitalization RDT&E will also support Program Support Costs (PSC) activities to include but not limited to market research, acquisition planning, pre-milestone activities, RFP development, test planning, mission planning capability development, future tanker development, and various studies and analyses.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver future tanker weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY 2023 \$0.000 million was expended for civilian pay expenses in this program element, and in FY 2024 \$13.400 million is forecast for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	11.281	19.400	93.999	0.000	93.999
Current President's Budget	11.281	19.400	13.661	0.000	13.661
Total Adjustments	0.000	0.000	-80.338	0.000	-80.338
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-80.338	0.000	-80.338

**Change Summary Explanation**

FY 2025 funding request was reduced by a total of \$80.338 million which includes a reduction of \$74.172 million due to rephasing of limited EMD development work to FY 2026 and \$6.166 million reduction to account for the availability of prior year execution balances.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> Support	11.281	19.400	13.661	0.000	13.661

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605164F <i>I Air Refueling Capability Modernization</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<p><b>Description:</b> Studies and analyses to support Tanker Recapitalization planning activities for future initiatives, future tanker replacement planning, and other Program Office support to include but not limited to market research, acquisition planning, pre-milestone activities, Request for Proposal (RFP) development, test planning, and various studies and analyses.</p> <p><b>FY 2024 Plans:</b> Continue market research, acquisition planning, pre-milestone activities, RFP development and release, test planning, and various studies and analyses for tanker recapitalization and other future tanker development efforts.</p> <p><b>FY 2025 Base Plans:</b> Develop and release RFP, continue proposal development, evaluations and fact finding, test planning, and various studies and analyses for Tanker Recapitalization and other future tanker development efforts.</p> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due restructure of contract and award delay for Engineering &amp; Manufacturing Development.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	11.281	19.400	13.661	0.000	13.661

**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF 02 KC000Y: <i>Tanker Recapitalization</i>	-	-	-	-	-	-	31.406	3,247.486	2,502.626	Continuing	Continuing
• APAF 06 000999: <i>Initial Spares/Repair Parts</i>	-	-	-	-	-	-	-	136.451	139.186	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

The Joint Requirements Oversight Council (JROC) validated the KC-135 Tanker Replacement Aircraft System Capability Development Document in Sept 2023. The Air Force will determine the acquisition strategy based on the Business Case Analysis (BCA) re-look results and JROC validated requirements in 3QFY24.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0605164F / Air Refueling Capability Modernization	<b>Project (Number/Name)</b> 645164 / Continued Tanker Recapitalization RDT&E

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Tanker Recap Development</i></b>	
JROC Validated KC-135 Replacement Aircraft CDD Coordination and Approval	
Industry Engagement	
Develop/Present Pre-Acquisition Strategy Panel	
ASP Development, Coordination and Approval	
RFP Development and Release	
Milestone B	
Proposal Review, Contract Negotiations, Contract Award	
EMD	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0605164F / <i>Air Refueling Capability Modernization</i>	<b>Project (Number/Name)</b> 645164 / <i>Continued Tanker Recapitalization RDT&amp;E</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Tanker Recap Development</i></b>				
JROC Validated KC-135 Replacement Aircraft CDD Coordination and Approval	1	2023	1	2024
Industry Engagement	2	2023	4	2024
Develop/Present Pre-Acquisition Strategy Panel	2	2023	2	2024
ASP Development, Coordination and Approval	2	2024	3	2024
RFP Development and Release	2	2023	2	2025
Milestone B	3	2026	3	2026
Proposal Review, Contract Negotiations, Contract Award	3	2025	2	2026
EMD	3	2026	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0606005F / <i>Digital Transformation Office</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	9.800	0.000	9.800	14.790	15.311	24.531	30.901	0.000	95.333
643316: <i>Digital Transformation Office</i>	-	0.000	0.000	9.800	0.000	9.800	14.790	15.311	24.531	30.901	0.000	95.333
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program encompasses the acquisition and development of common digital tools, software, and training to expedite the delivery of pertinent technologies, capabilities, and weapons throughout the enterprise. This program ensures the swift and cost-effective deployment of software tools to acquisition programs by developing common, enterprise-level, cloud-hosted software tool environments; this will equip the acquisition enterprise with Model-Based Systems Engineering, analytics, requirements management, and product life cycle management tools that will accelerate the delivery of war fighting capabilities. The program's objective is to develop and deploy enterprise-wide approaches for standardizing and scaling digital tool capabilities, resulting in reduced program delivery times. This holistic approach enables unprecedented collaboration with industry, lowers contract deliverable costs through government-approved data architectures and model delivery, and enhances foundational capability across the DAF by providing access to cloud-hosted tools to empower the acquisition workforce.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	9.800	0.000	9.800
Total Adjustments	0.000	0.000	9.800	0.000	9.800
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	9.800	0.000	9.800

**Change Summary Explanation**

FY 2025 increased compared to FY 2024 by 9.7M for Launchpad is due to Air Force funding re-prioritization.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0606005F / <i>Digital Transformation Office</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Title:</b> LaunchPad</p> <p><b>Description:</b> LaunchPad focuses on building and expanding the current Digital Platform as a Service Launchpad offering on CloudOne to be an enterprise solution for access to tools. Scale Digital Engineering Platform as a Service by removing the barriers for pay to play by a program office to onboard to the enterprise solutions for access to critical Digital Materiel Management tools.</p> <p><b>FY 2024 Plans:</b> Not funded in the PB</p> <p><b>FY 2025 Plans:</b> Rearchitect - Acquiring and integration new backend servers, developing baseline codes and containerization for user access for specific requested software, containerization new software to be integration to the environment. Cyber Testing, integration testing - Penetration testing, Authorization To Operate (ATO) package development, User experience design and testing, user acceptance testing. Integration to new environments - Environment integration testing (e.g. LaunchPad 2.0 to AF-PLM, LaunchPad 2.0 to HPCMP) and ATO package development.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 increased compared to FY 2024 by \$9.800 million due to expansion of the current Digital Platform as a Service Launchpad offering on CloudOne to be an enterprise solution for access to tools.</p>	-	0.000	9.800
<b>Accomplishments/Planned Programs Subtotals</b>	-	0.000	9.800

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
N/A



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0606005F / <i>Digital Transformation Office</i>	<b>Project (Number/Name)</b> 643316 / <i>Digital Transformation Office</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>LaunchPad</b>	
4	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0606005F / <i>Digital Transformation Office</i>	<b>Project (Number/Name)</b> 643316 / <i>Digital Transformation Office</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>LaunchPad</b>				
4	1	2025	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Dominance</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	1,608.787	2,326.128	3,306.355	0.000	3,306.355	3,684.211	5,396.538	7,247.656	8,829.396	Continuing	Continuing
646007: <i>Next Generation Air Dominance (NGAD) Platform</i>	-	1,608.787	1,933.918	2,749.208	0.000	2,749.208	3,189.315	3,741.918	4,201.373	5,723.123	Continuing	Continuing
647123: <i>Collaborative Combat Aircraft (CCA)</i>	-	0.000	392.210	557.147	0.000	557.147	494.896	1,654.620	3,046.283	3,106.273	Continuing	Continuing

**Note**

Project 646007, Next Generation Air Dominance (NGAD) Platform, changed from AS 2030 Air Dominance Technologies (ADT)

**A. Mission Description and Budget Item Justification**

Next Generation Air Dominance (NGAD) Family of Systems (FoS) is a portfolio of technologies enabling Air Superiority for the Joint Force in the most challenging operational environments. Key NGAD FoS attributes include enhancements to survivability, lethality, persistence, crewed/uncrewed teaming and interoperability across a range of military operations. Program activities include the employment of digital acquisitions through the application of digital engineering, agile software development, open systems architectures and digital systems infrastructure as well as the design, build, and test of full weapon systems with supporting elements. Funding provides for operational concept exploration, technology studies, multi-domain integration assessments, operational and system architecture development, maturation and risk reduction of air superiority related technologies. These include autonomy, weapon systems, integrated system concept development and demonstration, as well as activities for full weapon system design, build, test, and program management support. Program management support costs include but are not limited to contractor support services, civilian pay, supplies, and facility related expenses. NGAD FoS technologies are available to other DoD systems based on emerging threats, AF priorities, and development capacity. DoD systems incorporating NGAD FoS technologies will include development, integration, and testing of capabilities. This program element supports the Secretary of the Air Force's Operational Imperatives, specifically "Defining the NGAD Family of Systems."

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023, 18.666M was expended for civilian pay expenses in this program element. In FY2024, 46.476M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Dominance</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	1,657.635	2,326.128	3,485.240	0.000	3,485.240
Current President's Budget	1,608.787	2,326.128	3,306.355	0.000	3,306.355
Total Adjustments	-48.848	0.000	-178.885	0.000	-178.885
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	10.000	0.000			
• SBIR/STTR Transfer	-58.848	0.000			
• Other Adjustments	0.000	0.000	-178.885	0.000	-178.885

**Change Summary Explanation**

FY 2023, a Below Threshold Reprogramming occurred to realign 10.000M from PE 0604840F for Project 646007: Next Generation Air Dominance (NGAD) Platform.

FY 2025 changes can be addressed at a higher classification level

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0207110F / Next Generation Air Dominance				<b>Project (Number/Name)</b> 646007 / Next Generation Air Dominance (NGAD) Platform			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
646007: Next Generation Air Dominance (NGAD) Platform	-	1,608.787	1,933.918	2,749.208	0.000	2,749.208	3,189.315	3,741.918	4,201.373	5,723.123	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Project 646007, Next Generation Air Dominance (NGAD) Platform, changed from AS 2030 Air Dominance Technologies (ADT).

**A. Mission Description and Budget Item Justification**

The NGAD program is influenced by the CSAF-approved Air Superiority Enterprise Capability Collaboration Team (ECCT) Flight Plan. The program matures technology and reduces risk through development, integration, and test activities. Key NGAD attributes include enhancements in survivability, lethality, persistence, and interoperability across a range of military operations. Program activities include the employment of digital acquisitions through the application of digital engineering, agile software development, open systems architectures and digital systems infrastructure as well as the design, build, and test of full weapon systems with supporting elements. Funding provides operational concept exploration, technology studies, multi-domain integration assessments, operational and system architecture development, maturation and risk reduction of air superiority related technologies. These include autonomy, weapon systems, integrated system concept development and demonstration, as well as activities for full weapon system design, build, test, and program management support. Program management support costs includes but is not limited to contractor support services, civilian pay, supplies, and facility related expenses. NGAD technologies are designed to become available to other DoD systems based on emerging threats, AF priorities, and development capacity.

In FY2023, 18.666M was expended for civilian pay expenses in this project. In FY2024, 34.597M is forecasted for civilian pay expenses in this project.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> 2030+ Air Dominance	1,608.787	1,933.918	2,749.208
<b>Description:</b> The 2030+ Air Dominance (AD) candidate concepts consist of operational analyses, threat studies, technology candidate assessments and prototyping to identify operational concepts and technologies that improve persistence, survivability, lethality, connectivity, interoperability and affordability in 2030 and beyond. These efforts will provide for contractors to conduct analyses, identify technology candidates and perform concept refinement. Studies are required to develop operational/system architectures to include family of systems and spectral dominance platforms. In addition, technical risk reduction activities will be performed to include development, integration, test and building demonstrative prototypes.			
The 2030+ AD working groups methodically assessed candidate concepts using USAF directives and guidance that informed the NGAD Analysis of Alternatives (AoA). Ongoing studies refine system concepts and operational/system architectures incorporating family of systems and spectral dominance platforms that may be required to inform and support strategic choices.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Dominance</i>	<b>Project (Number/Name)</b> 646007 / <i>Next Generation Air Dominance (NGAD) Platform</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>In addition, technical risk reduction studies utilizing preliminary data from AD concept development have informed strategic USAF experimentation and prototyping efforts. Finally, technical overviews were presented to the Air Force - Scientific Advisory Board (AF-SAB) and other senior leaders.</p> <p><b><i>FY 2024 Plans:</i></b> The Engineering and Manufacturing Development (EMD) phase is planned to begin and program activities include the pursuit of open architecture solutions and the design, build, and test of full weapon systems. NGAD Platform continues to conduct analyses, identify technology candidates and perform concept refinements. Studies required to develop operational/system architectures to include family of systems and spectral dominance platforms continues to mature. Technical risk reduction activities continue to include development, integration, test and building demonstrative prototypes.</p> <p><b><i>FY 2025 Plans:</i></b> The Engineering and Manufacturing Development (EMD) phase will continue; program activities include the pursuit of open architecture solutions and the design, build, and test of full weapon systems. NGAD Platform will continue to conduct analyses, identify technology candidates and perform concept refinements. Studies required to develop operational/system architectures to include family of systems and spectral dominance platforms will also mature. Technical risk reduction activities will continue to include development, integration, test and building demonstrative prototypes.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased due to continued technology maturation, risk reduction activities, hardware prototyping efforts, and increased EMD activities. Additional details for cost increase from FY2024 to FY2025 cannot be provided at this classification level.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	1,608.787	1,933.918	2,749.208

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The Next Generation Air Dominance acquisition strategy is based on a top-down, multi-domain capabilities development planning and oversight framework. Cross-functional teams will conduct analysis, demonstrations, and experiments to quantify the operational value of alternative concepts and technologies to provide solutions to current and future air superiority capability gaps. Additional details on the acquisition strategy cannot be provided at this classification level.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / Next Generation Air Dominance	<b>Project (Number/Name)</b> 646007 / Next Generation Air Dominance (NGAD) Platform
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGAD Research/ Development Efforts	Various	Various : Various	-	1,544.549		1,866.407		2,680.347		-		2,680.347	Continuing	Continuing	-
<b>Subtotal</b>			-	1,544.549		1,866.407		2,680.347		-		2,680.347	Continuing	Continuing	N/A

**Remarks**  
Contractual specifics are not available at this level of security classification.

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGAD Acquisition Support	Various	Various : Various	-	64.238		67.511		68.861		-		68.861	Continuing	Continuing	-
<b>Subtotal</b>			-	64.238		67.511		68.861		-		68.861	Continuing	Continuing	N/A

**Remarks**  
NGAD Acquisition Support includes but is not limited to A&AS, civilian pay, supplies, and facility related expenses.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	1,608.787	1,933.918	2,749.208	-	2,749.208	Continuing	Continuing	N/A

**Remarks**  
Details of contract data are not shown because of the level of security classification.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Dominance</i>	<b>Project (Number/Name)</b> 646007 / <i>Next Generation Air Dominance (NGAD) Platform</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Next Generation Air Dominance (NGAD) Platform</b>	
Concept Exploration	
Integration Studies	
Technology Risk Reduction / Prototyping	
Engineering and Manufacturing Development (EMD)	
FY24 Strategic Planning Choices Presented	
FY25 Strategic Planning Choices Presented	
FY26 Strategic Planning Choices Presented	
FY27 Strategic Planning Choices Presented	
FY28 Strategic Planning Choices Presented	
FY29 Strategic Planning Choices Presented	
FY30 Strategic Planning Choices Presented	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Dominance</i>	<b>Project (Number/Name)</b> 646007 / <i>Next Generation Air Dominance (NGAD) Platform</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Next Generation Air Dominance (NGAD) Platform</i></b>				
Concept Exploration	1	2023	4	2029
Integration Studies	1	2023	4	2029
Technology Risk Reduction / Prototyping	1	2023	4	2029
Engineering and Manufacturing Development (EMD)	3	2024	4	2029
FY24 Strategic Planning Choices Presented	1	2023	1	2023
FY25 Strategic Planning Choices Presented	1	2024	1	2024
FY26 Strategic Planning Choices Presented	1	2025	1	2025
FY27 Strategic Planning Choices Presented	1	2026	1	2026
FY28 Strategic Planning Choices Presented	1	2027	1	2027
FY29 Strategic Planning Choices Presented	1	2028	1	2028
FY30 Strategic Planning Choices Presented	1	2029	1	2029

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0207110F / Next Generation Air Dominance				<b>Project (Number/Name)</b> 647123 / Collaborative Combat Aircraft (CCA)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
647123: Collaborative Combat Aircraft (CCA)	-	0.000	392.210	557.147	0.000	557.147	494.896	1,654.620	3,046.283	3,106.273	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Collaborative Combat Aircraft (CCA) are uncrewed weapon systems capable of enhancing crewed weapon systems to achieve air superiority. The program matures and leverages relevant Science and Technology investments to reduce risk by conducting targeted development, integration and test activities. Key CCA attributes include cost of platforms, mission integrated autonomy, multi-platform interoperability, and lethality enhancement. Program activities include the employment of digital acquisitions through the application of digital engineering, agile software development, and open systems architectures. Funding provides information technology/test/training infrastructure investments, operational concept exploration, technology studies, multi-domain integration, operational assessments, architecture development, integrated weapons systems development and demonstration of air superiority related technologies, and multi-level prototyping as well as program management support. Program management support costs include but are not limited to contractor support services, civilian pay, supplies, and facility related expenses.

In FY2023, civilian pay expenses were expended out of program element 0207179F. In FY2024, 11.8790M is forecasted for civilian pay expenses in this project.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Collaborative Combat Aircraft	0.000	392.210	557.147
<b>Description:</b> The Collaborative Combat Aircraft effort includes operational analyses/studies, technology candidate assessments, development, integration, test, prototyping, and demonstrations to identify operational concepts and technologies that project air power against adversaries. Ongoing studies are conducted to refine CCA concepts as well as air superiority related technologies.			
<b>FY 2024 Plans:</b> Collaborative Combat Aircraft will conduct analyses, identify technology candidates, perform concept refinement studies, development, integration, test, prototyping, and demonstrations to reduce risk and mature CCA concepts and air superiority related technologies in support of the NGAD family of systems.			
<b>FY 2025 Plans:</b> Collaborative Combat Aircraft will continue to conduct analyses, identify technology candidates, perform concept refinement studies, development, integration, test, prototyping, and demonstrations, as well as crewed systems integration to reduce risk and mature CCA concepts and air superiority related technologies in support of the NGAD family of systems.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Domina nce</i>	<b>Project (Number/Name)</b> 647123 / <i>Collaborative Combat Aircraft (CCA)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Funding increased for continued technology maturation, risk reduction activities, and prototyping efforts. Additional details for cost increase from FY2024 to FY2025 cannot be provided at this classification level.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	392.210	557.147

**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDTE 04 0207179F: <i>Autonomous Collaborative Platforms</i>	54.954	0.000	-	-	-	-	-	-	-	0.000	54.954

**Remarks**

**D. Acquisition Strategy**  
The Collaborative Combat Aircraft acquisition strategy is based on a multi-domain capabilities, development, planning, and oversight framework. Cross-functional teams will conduct analysis, demonstrations, and experiments to quantify the operational value of alternative concepts and technologies in order to provide solutions to current and future air superiority capability gaps. Additional details on the acquisition strategy cannot be provided at this classification level.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / Next Generation Air Dominance	<b>Project (Number/Name)</b> 647123 / Collaborative Combat Aircraft (CCA)
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CCA Research/ Development Efforts	Various	Various : TBD	-	-		379.776		540.711		-		540.711	Continuing	Continuing	-
<b>Subtotal</b>			-	-		379.776		540.711		-		540.711	Continuing	Continuing	N/A

**Remarks**  
Contract specifics are not available at this level of security classification.

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CCA Acquisition Support	Various	Various : TBD	-	-		12.434		16.436		-		16.436	Continuing	Continuing	-
<b>Subtotal</b>			-	-		12.434		16.436		-		16.436	Continuing	Continuing	N/A

**Remarks**  
CCA acquisition support includes but is not limited to A&AS, civilian pay, supplies, and facility related expenses.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	-	392.210	557.147	-	557.147	Continuing	Continuing	N/A

**Remarks**  
Details of contract data are not shown because of the level of security classification.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Dominance</i>	<b>Project (Number/Name)</b> 647123 / <i>Collaborative Combat Aircraft (CCA)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Collaborative Combat Aircraft (CCA)</i></b>	
Concept Exploration	[REDACTED]
Integration Studies	[REDACTED]
Technology Risk Reduction / Prototyping	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207110F / <i>Next Generation Air Domina nce</i>	<b>Project (Number/Name)</b> 647123 / <i>Collaborative Combat Aircraft (CCA)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Collaborative Combat Aircraft (CCA)</i></b>				
Concept Exploration	1	2024	4	2029
Integration Studies	1	2024	4	2029
Technology Risk Reduction / Prototyping	1	2024	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative Platforms</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	54.954	118.826	51.666	0.000	51.666	62.225	62.946	63.959	65.243	Continuing	Continuing
643721: <i>Experimental Operations Unit (EOU)</i>	-	0.000	68.956	44.540	0.000	44.540	55.631	56.650	57.828	58.969	Continuing	Continuing
645340: <i>Viper Experimentation and Next-gen Operations Model (VENOM)</i>	-	0.000	49.870	7.126	0.000	7.126	6.594	6.296	6.131	6.274	Continuing	Continuing
647123: <i>Autonomous Collaborative Technologies</i>	-	54.954	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	54.954

**Note**

In FY2024 PE 0207179F, Project 645340 "Viper Experimentation and Next-gen Operations Model" efforts were transferred to PE 0605807F, Project 6606TS "Test and Evaluation Support" in order to fund RDT&E Management Support. The transferred amount was \$17.813M (FY2024), \$9.789M (FY2025), \$11.007M (FY2026), \$11.580M (FY2027), and \$12.548 (FY2028). The funding retained within this PE and BPAC pay for modifying aircraft and autonomy testing.

**A. Mission Description and Budget Item Justification**

Autonomous Collaborative Platforms (ACP) are uncrewed weapon systems designed to work in conjunction with current and future aircraft to provide operational flexibility and enhance operational effectiveness. Key ACP attributes include tailored cost of platforms, rapidly updateable software, autonomy, interoperability with multiple platforms and network capabilities, agility of use, lethality, and ability to penetrate challenging air environments. The program matures technology to reduce risk through development, integration, experimentation, and test activities. Autonomous Collaborative Technologies (ACT) served as the starting point for the Air Force's investment in the Collaborative Combat Aircraft (CCA) program. ACP will explore Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, and Policy (DOTMLPF-P) concepts for uncrewed vehicles. Program activities include the employment of digital acquisitions through the application of digital engineering, agile software development, open systems architectures, and risk reduction projects. Funding provides digital systems infrastructure, operational concept exploration, technology studies, multi-domain integration assessments, operational and system architecture development, flight test and test support, prototypes, training and demonstration, program management support, as well as maturation and risk reduction of air superiority related technologies to include weapons systems, autonomy, and integrated system concept development. Program management support costs include but are not limited to contractor support services, civilian pay, supplies, and facility related expenses.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023, 1.692M was expended for civilian pay expenses in this program element. In FY2024, 0.0M is forecasted for civilian pay expenses in this program element.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative Platforms</i>
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This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	51.747	118.826	61.455	0.000	61.455
Current President's Budget	54.954	118.826	51.666	0.000	51.666
Total Adjustments	3.207	0.000	-9.789	0.000	-9.789
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	5.000	0.000			
• SBIR/STTR Transfer	-1.793	0.000			
• Other Adjustments	0.000	0.000	-9.789	0.000	-9.789

**Change Summary Explanation**

In FY2023, a Below Threshold Reprogramming occurred to realign \$5.000M from PE 0207142F for Project 647123: Autonomous Collaborative Technologies.

In FY2025, an adjustment was made to realign \$9.789M to PE 0605807F for RDT&E Management Support.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative Platforms</i>				<b>Project (Number/Name)</b> 643721 / <i>Experimental Operations Unit (EOU)</i>				
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
643721: <i>Experimental Operations Unit (EOU)</i>	-	0.000	68.956	44.540	0.000	44.540	55.631	56.650	57.828	58.969	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Experimental Operations Unit (EOU) effort explores Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, and Policy (DOTMLPF-P) concepts for Collaborative Combat Aircraft (CCA). Program activities serve as early risk reduction for employment of CCA with crewed aircraft to mature operational concept development and evaluate supporting force structure to execute CCA operations. Funding provides operational concepts and studies, flight test and test support, prototypes, infrastructure investment for information technology, training and demonstration, and program management support to mature autonomous operational concepts. Program management support costs include but are not limited to contractor support services, civilian pay, supplies, and facility related expenses.

In FY2024, 0.0M is forecasted for civilian pay expenses in this project.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Experimental Operations Unit	0.000	68.956	44.540
<b>Description:</b> The EOU candidate concepts consist of operational analyses, prototypes, studies and identifications of operation concepts. Ongoing studies and operational analysis are conducted to refine EOU concepts related to test and employment of uncrewed platforms as well as employment with crewed platforms.			
<b>FY 2024 Plans:</b> EOU will invest in prototypes, infrastructure and conduct studies to refine EOU concepts related to test and employment of uncrewed platforms as well as employment with crewed platforms.			
<b>FY 2025 Plans:</b> EOU stands up as a fully manned squadron with investments in facility modifications, critical infrastructure, and equipment. EOU continues to invest in ACP prototypes, modeling and simulation environments, and studies to refine integration of CCA into the force (DOTMLPF-P) especially related to: Agile Combat Employment, maintenance and logistics, crewed-uncrewed teaming, training requirements, uncrewed employment, and the development of needed publications, training, and policy documents.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decrease due to startup costs in FY24 while FY25 is focused on steady-state operations.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	68.956	44.540

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative P latforms</i>	<b>Project (Number/Name)</b> 643721 / <i>Experimental Operations Unit (EOU)</i>

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Experimental Operations Unit acquisition strategy is based on an integrated Developmental Test and Operational Test squadron to leverage prototype CCA. This squadron is staffed with traditional Air Combat Command personnel and other cross-functional teams to develop and iterate employment and operational concepts for CCA. Funding is spent on studies, contractor support, demonstrations, exercises, and operations required to establish the framework to successfully employ CCA at operational locations.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative Platforms</i>	<b>Project (Number/Name)</b> 643721 / <i>Experimental Operations Unit (EOU)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EOU Research/Development Efforts	Various	Various : TBD	-	-		65.508		42.227		-		42.227	Continuing	Continuing	-
<b>Subtotal</b>			-	-		65.508		42.227		-		42.227	Continuing	Continuing	N/A

**Remarks**  
Contract specifics are not available at this level of security classification.

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EOU Acquisition Support	Various	Various : TBD	-	-		3.448		2.313		-		2.313	Continuing	Continuing	-
<b>Subtotal</b>			-	-		3.448		2.313		-		2.313	Continuing	Continuing	N/A

**Remarks**  
EOU Acquisition Support includes but is not limited to A&AS, civilian pay, supplies, and facility related expenses.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	-	68.956	44.540	-	44.540	Continuing	Continuing	N/A

**Remarks**  
Details of contract data are not shown because of the level of security classification.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative P latforms</i>	<b>Project (Number/Name)</b> 643721 / <i>Experimental Operations Unit (EOU)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Experimental Operations Unit</i></b>	
Concept Exploration	
Integration Studies	
Risk Reduction	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative Platforms</i>	<b>Project (Number/Name)</b> 643721 / <i>Experimental Operations Unit (EOU)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Experimental Operations Unit</i></b>				
Concept Exploration	1	2024	4	2029
Integration Studies	1	2024	4	2029
Risk Reduction	1	2024	4	2029

**Note**

The EOU is an enduring program with iterative DOTMLPF-P activities.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0207179F / Autonomous Collaborative P latforms				<b>Project (Number/Name)</b> 645340 / Viper Experimentation and Next- gen Operations Model (VENOM)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
645340: Viper Experimentation and Next-gen Operations Model (VENOM)	-	0.000	49.870	7.126	0.000	7.126	6.594	6.296	6.131	6.274	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY2024 PE 0207179F, Project 645340 "Viper Experimentation and Next-gen Operations Model" efforts were transferred to PE 0605807F, Project 6606TS "Test and Evaluation Support" in order to fund RDT&E Management Support. The transferred amount was \$17.813M (FY2024), \$9.789M (FY2025), \$11.007M (FY2026), \$11.580M (FY2027), and \$12.548 (FY2028). The funding retained within this PE and BPAC pay for modifying aircraft and autonomy testing.

**A. Mission Description and Budget Item Justification**

The Viper Experimentation and Next-gen Operations Model (VENOM) effort serves as a flying autonomy testbed for the Collaborative Combat Aircraft (CCA) program. Program activities reduce risk to CCA through test and demonstration of the autonomy reference architecture and autonomy software on a F-16, or other human-on-the-loop testbed. Funding provides flight test and test support (including modifications), infrastructure investments for information technology, training, and program management support to mature autonomy architecture and software prior to transition to CCA. Program management support costs include but are not limited to contractor support services, civilian pay, supplies, and facility related expenses.

In FY2024, 0.0M is forecasted for civilian expenses in this project.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Viper Experimentation and Next-gen Operations Model	0.000	49.870	7.126
<b>Description:</b> The VENOM candidate concepts consist of establishing human-on-the-loop autonomy testbed, enabling modifications and implementing initial autonomy reference architecture to reduce risk for CCA autonomy.			
<b>FY 2024 Plans:</b> VENOM begins incorporation of the latest autonomy reference architecture and enabling modifications as well as implements and tests autonomy skills to mature CCA autonomy.			
<b>FY 2025 Plans:</b> VENOM continues aircraft hardware modifications to include integration of the latest autonomy reference architecture, continues to test autonomy skills, and develop the autonomy test infrastructure. Autonomy test infrastructure includes a digital autonomy test			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative P latforms</i>	<b>Project (Number/Name)</b> 645340 / <i>Viper Experimentation and Next- gen Operations Model (VENOM)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
environment and common test tools to ensure integration between Vendors, Test Organizations, and Program Offices. Autonomy skills being matured include: 1) multi-ship behaviors 2) Defensive Counter-Air behaviors and 3) Offensive Counter-Air behaviors.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY2025 funds realigned to Program Element 0605807F. FY2025 funds mature flight autonomy skills.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	49.870	7.126

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The VENOM acquisition strategy is based on leveraging Developmental Test and Operational Test organizations to mature missionized autonomy model development and training pipelines. Funding is spent on autonomy testing, contractor support, demonstrations, and exercises for the crewed aircraft and supporting infrastructure which serves as risk reduction for CCA autonomy.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / Autonomous Collaborative P platforms	<b>Project (Number/Name)</b> 645340 / Viper Experimentation and Next- gen Operations Model (VENOM)
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<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
VENOM Research/ Development Efforts	Various	Various : TBD	-	-		47.380		6.770		-		6.770	Continuing	Continuing	-
<b>Subtotal</b>			-	-		47.380		6.770		-		6.770	Continuing	Continuing	N/A

**Remarks**  
Contract specifics are not available at this level of security classification.

<b>Management Services (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
VENOM Acquisition Support	Various	Various : TBD	-	-		2.490		0.356		-		0.356	Continuing	Continuing	-
<b>Subtotal</b>			-	-		2.490		0.356		-		0.356	Continuing	Continuing	N/A

**Remarks**  
VENOM Acquisition Support includes but is not limited to A&AS, civilian pay, supplies, and facility related expenses.

	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	-	-	49.870	7.126	-	7.126	Continuing	Continuing	N/A

**Remarks**  
Details of contract data are not shown because of the level of security classification.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative P</i> <i>latforms</i>	<b>Project (Number/Name)</b> 645340 / <i>Viper Experimentation and Next-</i> <i>gen Operations Model (VENOM)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>VENOM</b>	
Risk Reduction	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative P latforms</i>	<b>Project (Number/Name)</b> 645340 / <i>Viper Experimentation and Next- gen Operations Model (VENOM)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>VENOM</b>				
Risk Reduction	1	2024	4	2029

**Note**  
Details of contract data are not shown because of the level of security classification.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0207179F / Autonomous Collaborative Platforms				<b>Project (Number/Name)</b> 647123 / Autonomous Collaborative Technologies			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
647123: Autonomous Collaborative Technologies	-	54.954	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	54.954
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Autonomous Collaborative Technologies (ACT) are uncrewed weapon systems primarily focused on projecting air power against adversaries. These new uncrewed air combat vehicles are designed to work in conjunction with current and future aircraft to provide operational flexibility, as directed by Department of the Air Force leadership. The program matures technology from the Science and Technology (S&T) Skyborg Vanguard program to reduce risk through development, integration and test activities, delivering rapid capabilities to warfighters. ACT served as the starting point for the Air Force's investment in Collaborative Combat Aircraft (CCA). Key Autonomous Collaborative Platform (ACP) attributes include tailored cost of platforms, rapidly updateable software, autonomy, interoperability with multiple platforms and network capabilities, agility of use, lethality, and ability to penetrate challenging air environments. Program activities include the employment of digital acquisitions through the application of digital engineering, agile software development, and open systems architectures. Funding provides program management support, operational concept exploration, technology studies, multi-domain integration assessments, operational and system architecture development, maturation and risk reduction of air superiority related technologies including weapons systems and integrated system concept development and demonstration.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023, 1.692M was expended for civilian pay expenses in this program element. In FY2024, 0.0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Autonomous Collaborative Platform	54.954	0.000	0.000
<b>Description:</b> The Autonomous Collaborative Platform candidate concepts consist of operational analyses/studies, technology candidate assessments, development, integration, prototyping and demonstrations to identify operational concepts and technologies that project air power against adversaries. Ongoing studies are conducted to refine ACP concepts and air superiority related technologies.			
<b>FY 2024 Plans:</b> FY2024 efforts were transferred to PE 0207110F			
<b>FY 2025 Plans:</b> Funding transferred to PE 0207110F in FY2024.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative Platforms</i>	<b>Project (Number/Name)</b> 647123 / <i>Autonomous Collaborative Technologies</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
N/A			
<b>Accomplishments/Planned Programs Subtotals</b>	54.954	0.000	0.000

**C. Other Program Funding Summary (\$ in Millions)**

<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 04 0207110F: <i>Next Generation Air Dominance</i>	0.000	392.210	513.752	-	513.752	245.967	1,643.635	3,032.756	-	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

The Autonomous Collaborative Platform acquisition strategy is based on a multi-domain capability development, planning, and oversight framework. Cross-functional teams conduct analysis, demonstrations, and experiments to quantify the operational value of alternative concepts and technologies to provide solutions to current and future air superiority capability gaps.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / Autonomous Collaborative Platforms	<b>Project (Number/Name)</b> 647123 / Autonomous Collaborative Technologies
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ACP Research/Development Efforts	Various	Various : TBD	-	49.531		-		-		-		-	0.000	49.531	-
<b>Subtotal</b>			-	49.531		-		-		-		-	0.000	49.531	N/A

**Remarks**  
Contractual specifics are not available at this level of security classification.

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ACP Acquisition Support	Various	Various : TBD	-	5.423		-		-		-		-	0.000	5.423	-
<b>Subtotal</b>			-	5.423		-		-		-		-	0.000	5.423	N/A

**Remarks**  
ACP Acquisition Support includes but is not limited to A&AS, civilian pay, supplies, and facility related expenses.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		-	54.954	-	-	-	0.000	54.954	N/A

**Remarks**  
Details of contract data are not shown because of the level of security classification.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative P latforms</i>	<b>Project (Number/Name)</b> 647123 / <i>Autonomous Collaborative Technologies</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Autonomous Collaborative Platform</i></b>	
Concept Exploration	
Integration Studies	
Technology Risk Reduction / Prototyping	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207179F / <i>Autonomous Collaborative Platforms</i>	<b>Project (Number/Name)</b> 647123 / <i>Autonomous Collaborative Technologies</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Autonomous Collaborative Platform</i></b>				
Concept Exploration	1	2023	4	2023
Integration Studies	1	2023	4	2023
Technology Risk Reduction / Prototyping	1	2023	4	2023

**Note**  
Details of contract data are not shown because of the level of security classification.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207420F / <i>Combat Identification</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	1.866	1.902	1.914	0.000	1.914	1.998	2.037	2.031	2.072	0.000	13.820
642742: <i>IFF/ATC Test and Certification</i>	-	1.866	1.902	1.914	0.000	1.914	1.998	2.037	2.031	2.072	0.000	13.820
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

Cooperative Combat Identification employs technologies required to rapidly identify friendly platforms. The program develops, integrates and evaluates technologies that provide Air Force platforms with a means of positively identifying an air or ground platform as a friendly, via active or passive cooperative identification capabilities. The development funded by this project ensures availability of a Mode 5 upgrade path for implementing ground and air platforms across the Air Force fleet. The Department of Defense International AIMSP0 has system level interoperability testing and certification responsibilities for the current Mark XIIB system, development and integration of new Identification Friend or Foe (IFF) system capabilities, and development/integration of civil Mode S capabilities into Mark XIIB Identification Friend or Foe equipment. The AIMSP0 ensures Identification Friend or Foe equipment/platform functionality in accordance with established standards and ensures total system interoperability to meet Department of Defense/Service mission areas (e.g. Offensive Counter Air, Defensive Counter Air, and Integrated Air and Missile Defense).

The cooperative goals will be to test and certify the Mark XIIB system, develop and integrate the new Mark XIIB Identification Friend or Foe system capability (Mode 5 Level 2 Broadcast) and also continue the development/integration of civil Mode S capabilities into Mark XIIB Identification Friend or Foe equipment using newly fielded M-code GPS receivers. The cooperative funds will be used to fund projects and personnel who develop and test technical standards, perform certification testing, process certifications and track all Office of the Secretary of Defense and Federal Aviation Administration guidelines to ensure the program remains current. The Office of the Secretary of Defense and Federal Aviation Administration guidelines required Mode 5 be fully implemented by FY 2020 but many platforms continue to integrate this capability. The Department of Defense (DoD) AIMS Program will ensure those certifications are current on all applicable platforms/systems and work with both domestic and foreign military sales partners to ensure compliance. The funds also support Department of Defense representation to several military (United States and NATO) and civil (Federal Aviation Administration, International Civil Aviation Organization and Radio Technical Commission for Aeronautics) requirements meetings for Mode 5, Mode S and ADS-B. These important meetings allow the Department of Defense to remain interoperable with our foreign military partners as well as the United States and international civil aviation community. Department of Defense AIMS Program will continue to update the Department of Defense AIMS Mark XIIB Standards, Security Classification Guide, Handbook, and Test Requirements.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207420F / <i>Combat Identification</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	1.866	1.902	1.910	0.000	1.910
Current President's Budget	1.866	1.902	1.914	0.000	1.914
Total Adjustments	0.000	0.000	0.004	0.000	0.004
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.004	0.000	0.004

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> Air Traffic Control and Radar Beacon Systems Identification Friend or Foe Mark XIIA System (AIMS) Program Office	1.866	1.902	1.914
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**Description:** Develop and maintain technical standards on development, integration, testing, and certification of Department of Defense Identification Friend or Foe equipment. Coordinate and execute equipment/subsystem-level certifications and platform certifications of Identification Friend or Foe capabilities. Currently managing 101 active Foreign Military Sales Cases. Support NATO Identification Friend or Foe Capabilities Team (Mode 5 Identification Friend or Foe is a NATO waveform). Support International Civil Aviation Organization (ICAO) Technical Support Group (develops standards for world-wide civil Air Traffic Control). Create and maintain civil Mode S address assignments and military Mode 5 Platform Identification Number assignments for every Department of Defense platform using these waveforms in their interrogator and/or transponder equipment. The yearly User Working Group provides information to the Users on Identification Friend or Foe (IFF); provides seminars to the Users on Basic IFF, Advanced IFF, Mode 5 Test Sets and Crypto training. The main purpose of the Working Group is share solutions and resolutions between Users, NATO, COCOMs and Program Offices on IFF, Mode 5, Mode S (civil and Military).

**FY 2024 Plans:**  
Continue updating and developing Identification Friend standards and support Mode 5 equipment for Air Traffic Control and Radar Beacon Systems Identification Friend or Foe Mark XIIA System (AIMS) for interoperability Identification Friend testing (civil and military).

**FY 2025 Plans:**

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207420F / <i>Combat Identification</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Continue updating and developing Identification Friend standards and support Mode 5 equipment for Air Traffic Control and Radar Beacon Systems Identification Friend or Foe Mark XIIA System (AIMS) for interoperability Identification Friend testing (civil and military).			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 increased compared to FY 2024 by \$0.012 million. Funding is increased due to the increased cost to complete planned activities.			
<b>Accomplishments/Planned Programs Subtotals</b>	1.866	1.902	1.914

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
Combat Identification develops technologies for exploitation by the United States Air Force and the other services. Award multiple, competitive contract vehicles emphasizing off-the-shelf technology and maximizing the use of non-developmental items (NDIs). Management develops a technology to a point it can be demonstrated in a relative combat environment.



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207420F / <i>Combat Identification</i>	<b>Project (Number/Name)</b> 642742 / <i>IFF/ATC Test and Certification</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Cooperative Identification Techniques</i></b>	
AIMS Program Office Activities	
AIMS Program Office Annual User Working Group (May 2023)	■
AIMS Program Office Annual User Working Group (May 2024)	■
AIMS Program Office Annual User Working Group (May 2025)	■
AIMS Program Office Annual User Working Group (May 2026)	■
AIMS Program Office Annual User Working Group (May 2027)	■
AIMS Program Office Annual User Working Group (May 2028)	■
AIMS Program Office Annual User Working Group (May 2029)	■

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**Exhibit R-4A, RDT&E Schedule Details: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207420F / <i>Combat Identification</i>	<b>Project (Number/Name)</b> 642742 / <i>IFF/ATC Test and Certification</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Cooperative Identification Techniques</i></b>				
AIMS Program Office Activities	1	2023	4	2029
AIMS Program Office Annual User Working Group (May 2023)	3	2023	3	2023
AIMS Program Office Annual User Working Group (May 2024)	3	2024	3	2024
AIMS Program Office Annual User Working Group (May 2025)	3	2025	3	2025
AIMS Program Office Annual User Working Group (May 2026)	3	2026	3	2026
AIMS Program Office Annual User Working Group (May 2027)	3	2027	3	2027
AIMS Program Office Annual User Working Group (May 2028)	3	2028	3	2028
AIMS Program Office Annual User Working Group (May 2029)	3	2029	3	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207431F / <i>Combat Air Intelligence System Activities</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	18.733	0.000	18.733	0.000	0.000	0.000	0.000	Continuing	Continuing
640141: <i>Advanced Battle Management System (ABMS)</i>	-	0.000	0.000	18.733	0.000	18.733	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

New Start FY25

The mission of Air Force (AF) Intelligence Surveillance Reconnaissance (ISR) Digital Infrastructure (DI) (AF ISR DI) is to provide the secure commercial cloud-based infrastructure, platform and data services, to be scaled with tenant funding to meet requirements for Sensitive Compartmented Information (SCI) and ISR cloud, platform and data services, globally, including at the edge.

AF ISR DI provides enterprise services and a secure development-security-operations (DevSecOps) platform, enabling developers to focus on delivery of mission capabilities as software applications that can be continually updated, dramatically accelerating the time to field and lowering the total ownership cost to the Department of Air Force (DAF) and can scale on demand to meet operational needs.

AF ISR DI provides the foundation for all DAF SCI cloud-based capabilities. The portfolio ensures compliance with the Intelligence Community (IC) requirements for security, architecture, data safeguarding and sharing, and integrated defense to protect IC data.

AF ISR DI partners with Advanced Battle Management System Digital Infrastructure (ABMS DI, executed under PE 0604003F) to provide a consistent set of capabilities, services and customer experience across all classification levels, and meets DAF requirements while ensuring compliance with Director of National Intelligence (DNI) requirements and minimizing duplication of effort.

AF ISR has two primary thrusts SCI Cloud Services and Cybersecurity Automation and Ops.

Funding will be Re-aligned in FY26 to a new AF ISR DI PE 33010F

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207431F / <i>Combat Air Intelligence System Activities</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	18.733	0.000	18.733
Total Adjustments	0.000	0.000	18.733	0.000	18.733
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	18.733	0.000	18.733

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Title:</b> SCI Cloud Services</p> <p><b>Description:</b> SCI Cloud services -Leveraging IC-governed commercial cloud enterprise capability, provides a common and robust foundation for agile ISR and C2 operations requiring SCI data, across the globe. Invests in engineering, security and architectural expertise to provide a fully managed, redundant and secure development, security and operations environment to rapidly develop and deploy mission applications. Provides identity access management, security and secure commercial cloud services, as well as customer service and support to tenants, who fund their use.</p> <p><b>FY 2024 Plans:</b> New Start FY25</p> <p><b>FY 2025 Plans:</b> AF ISR DI will invest in the development of engineering, security and architectural expertise to provide a fully managed, redundant and secure development, security and operations environment to rapidly develop and deploy mission applications. Invest in identity access management, security and secure commercial cloud services, as well as customer service and support to tenants.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> New start in FY25. Partnered with Advanced Battle Management System DI (PE 0604003F) to provide funding for a consistent set of capabilities, services, and customer experience across all classification levels, to meet DAF requirements, while insuring compliance with DNI requirement and minimizing duplication of effort.</p>	-	0.000	16.083
<b>Title:</b> Cybersecurity Automation and Ops	0.000	0.000	2.650

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207431F / <i>Combat Air Intelligence System Activities</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Cybersecurity Automation and Ops - develops full AF SCI integrated defense capabilities for commercial cloud at Secret and TS/SCI. Invests in cloud technology and software cybersecurity expertise to provide risk management technical reviews and assessments. Invests in automation-focused security tooling to enable continuous monitoring, assessment and near real time alerts to protect AF SCI data, mission applications and services in secure commercial cloud.</p> <p><b>FY 2024 Plans:</b> New Start FY25</p> <p><b>FY 2025 Plans:</b> AF ISR DI will invest in the development of cloud technology and software cybersecurity expertise to provide risk management technical reviews and assessments. Will invest in automation-focused security tooling to enable continuous monitoring, assessment and near real time alerts to protect AF SCI data, mission applications and services in secure commercial cloud.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> New start in FY25. Partnered with Advanced Battle Management System DI (PE 0604003F) to provide funding for a consistent set of capabilities, services, and customer experience across all classification levels, to meet DAF requirements, while insuring compliance with DNI requirement and minimizing duplication of effort.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	18.733

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

AF ISR DI acquisition strategy will be to incorporate into ABMS Major Release #2. Acquisition pathway still TBD.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207431F / <i>Combat Air Intelligence System Activities</i>	<b>Project (Number/Name)</b> 640141 / <i>Advanced Battle Management System (ABMS)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>AF ISR DI</i></b>	
SCI Cloud Services	[REDACTED]
Cybersecurity Automation	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207431F / <i>Combat Air Intelligence System Activities</i>	<b>Project (Number/Name)</b> 640141 / <i>Advanced Battle Management System (ABMS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>AF ISR DI</i></b>				
SCI Cloud Services	1	2025	4	2029
Cybersecurity Automation	1	2025	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207448F / C2ISR Tactical Data Link
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	42.371	0.000	42.371	43.311	0.000	0.000	0.000	0.000	85.682
644413: E-7	-	0.000	0.000	42.371	0.000	42.371	43.311	0.000	0.000	0.000	0.000	85.682
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
This program, BA 4, PE 0207448F, project 644413, E-7 Internet Protocol (IP) Beyond Line of Sight (BLOS), is a new start.

**A. Mission Description and Budget Item Justification**  
This budget line funds the E-7 IP-BLOS. The E-7 replaces the unsustainable E-3 Airborne Warning and Control System (AWACS). The E-3 AWACS, first fielded in the 1970s, is at the end of its service life, and costly to maintain. The E-7 will be the USAF's principal airborne sensor for detecting, identifying, tracking, and reporting aerial tracks for the Joint Force Air Component Commander (JFACC).

FY25 funding continues Department of the Air Force Battle Network connectivity, Internet Protocol Beyond Line-of-Sight Communications and Data link, and similar COMM/data studies and analysis to determine ability to add additional hybrid SATCOM or similar hardware on the aircraft, software coding, and other advanced communications not included in the E-7A Rapid Prototyping Baseline.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	42.371	0.000	42.371
Total Adjustments	0.000	0.000	42.371	0.000	42.371
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	42.371	0.000	42.371

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207448F / C2ISR Tactical Data Link
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
<b>Title:</b> E-7 Internet Protocol (IP) Beyond Line of Sight (BLOS) <b>Description:</b> E-7 IP-BLOS Funds will be used to acquire IP-BLOS capability for the E-7 platform.  <b>FY 2025 Plans:</b> E-7 Rapid Prototyping effort will incorporate E-7 IP-BLOS capability into the baseline.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY25 New Start	-	-	42.371
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	42.371

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 04 0604007F: E-7	411.704	681.039	418.513	-	418.513	297.334	161.838	167.697	171.006	0.000	2,309.131

**Remarks**

**E. Acquisition Strategy**  
 The Milestone Decision Authority for the E-7 program is the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics. Program management for the E-7 program is under direction of PEO Digital, located at Hanscom AFB, MA. The Air Force Life Cycle Management Center located at Wright-Patterson AFB, OH is the contracting authority for the E-7A program. AFLCMC provides contracting, legal, comptroller, programmatic, engineering, test, and logistics support.



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207448F / <i>C2ISR Tactical Data Link</i>	<b>Project (Number/Name)</b> 644413 / E-7
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>E-7 IP-BLOS 0207448F</b>	
E-7 IP-BLOS RP	[REDACTED]

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207448F / <i>C2ISR Tactical Data Link</i>	<b>Project (Number/Name)</b> 644413 / E-7
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>E-7 IP-BLOS 0207448F</b>				
E-7 IP-BLOS RP	2	2025	4	2026

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207455F / <i>Three Dimensional Long-Range Radar (3DELRR)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	13.959	19.763	8.100	0.000	8.100	0.069	0.000	0.000	0.000	0.000	41.891
646002: <i>Three Dimensional Expeditionary Long Range Radar</i>	0.000	13.959	19.763	8.100	0.000	8.100	0.069	0.000	0.000	0.000	0.000	41.891
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Program MDAP/MAIS Code:** 393

**A. Mission Description and Budget Item Justification**

This budget line funds the Three-Dimensional Expeditionary Long-Range Radar (3DELRR) program. The 3DELRR program replaces the unsustainable AN/TPS-75 radar. The AN/TPS-75 radar was first fielded in the early 1970s, is at the end of its service life, and costly to maintain. The 3DELRR system will be the USAF's principal long-range, ground-based sensor for detecting, identifying, tracking, and reporting aerial tracks for the Joint Force Air Component Commander (JFACC).

The 3DELRR system will provide multiple benefits and increased capabilities to the USAF and the Joint Services, including but not limited to: 1) ability to detect and track highly maneuverable, small radar cross-section airborne targets (modern and emerging threats); 2) enable greater battlefield and battlespace awareness through its precise, real-time air picture of sufficient quality to control individual aircraft under a wide range of environmental and operational conditions; and 3) mitigate reliability, operational availability, maintainability, transportability and sustainability issues.

The 3DELRR system consists of the TPY-4 radar and is supported by Prime Movers, Generators, and other smaller PMO Purchased Equipment. Prime Movers and Generators are currently long lead-time items.

FY2025 funding will support continued capability development for the 3DELRR system. Development of the system will consist of electronic protection (EP) techniques, classification and clutter algorithms, and enhanced radar capabilities across various operating environments. FY2025 funds will also support integration of the 3DELRR system with the United States Army using the Integrated Fire Control Network (IFCN) interface.

FY2025 funds will be allocated for 3DELRR decoy development and integration to the USN & USMC Cooperative Engagement Capability/Composite Tracker Network (CEC/CTN) as available.

Test and evaluation will also continue with FY2025 funding to support development of the TPY-4 radar to include cybersecurity and performance assessments, mobility, evaluations, and initial maintenance demonstrations.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 Program Element (Number/Name)</b> PE 0207455F I Three Dimensional Long-Range Radar (3DELRR)
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The total cost of the 3DELRR MTA effort is \$360.5 million, including RDT&E and procurement of prototype units. The 3DELRR program is not fully funded across the Future Years Defense Program. The Department of the Air Force is assessing all options to address the funding shortfalls for MTA programs including additional funding in a future budget request, performance trades based on technical maturity, or transition to alternative pathways.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.00M was expended for civilian pay expenses in this program element, and in FY24 \$0.00M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	14.490	19.763	0.584	0.000	0.584
Current President's Budget	13.959	19.763	8.100	0.000	8.100
Total Adjustments	-0.531	0.000	7.516	0.000	7.516
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.531	0.000			
• Other Adjustments	0.000	0.000	7.516	0.000	7.516

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Development and test of the AN/TPY-4 radar	10.964	5.587	1.966
<b>Description:</b> Funds will be used for the development, integration, and test activities of TPY-4 radar system.			
<b>FY 2024 Plans:</b>			
Activities will include, but are not limited to the following:			
-Finalize technical manuals and training material			
-Conduct test readiness reviews prior to specific test events			
-Continue integrated government developmental test & evaluation and operational test & evaluation to characterize performance and cybersecurity posture			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0207455F / <i>Three Dimensional Long-Range Radar (3DELRR)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>-Conduct initial operational test &amp; evaluation to support fielding decision                      -Develop, test, and implement future requirements based on mission needs</p> <p><b>FY 2025 Plans:</b>                      Activities will include, but are not limited to the following:                      -Will finalize technical manuals and training material                      -Will conduct test readiness reviews prior to specific test events                      -Will continue integrated government developmental test &amp; evaluation and operational test &amp; evaluation to characterize performance and cybersecurity posture                      -Will conduct initial operational test &amp; evaluation to support fielding decision                      -Will develop, test, and implement future requirements based on mission needs</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>                      FY25 budget was decreased because test efforts will transition from baseline system testing to development and testing of additional capabilities as part of the multi-step to full Capabilities Development Document (CDD) compliance acquisition strategy.</p>				
<p><b>Title:</b> Government Development, Operational &amp; Integration Test and Evaluation Planning and Execution</p> <p><b>Description:</b> Planning and Execution of Government-led Developmental, &amp; Operational Test and Evaluation Activities</p> <p><b>FY 2024 Plans:</b>                      Activities will include but are not limited to the following:                      -Conduct test readiness reviews prior to specific test events                      -Continue integrated government developmental test &amp; evaluation and operational test &amp; evaluation to characterize performance and cybersecurity posture                      -Conduct initial operational test &amp; evaluation to support fielding decision                      -Test selected future requirements based on mission needs</p> <p><b>FY 2025 Plans:</b>                      Activities will include but are not limited to the following:                      -Will conduct test readiness reviews prior to specific test events                      -Will continue integrated government developmental test &amp; evaluation and operational test &amp; evaluation to characterize performance and cybersecurity posture                      -Will conduct initial operational test &amp; evaluation to support fielding decision                      -Will test selected future requirements based on mission needs</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>		2.995	14.176	6.134

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207455F / <i>Three Dimensional Long-Range Radar (3DELRR)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
FY25 budget was decreased because test efforts will transition from baseline system testing to development and testing of additional capabilities as part of the multi-step to full CDD compliance acquisition strategy.			
<b>Accomplishments/Planned Programs Subtotals</b>	13.959	19.763	8.100

**D. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• OPAF 03 833060: 3D Expeditionary Long-Range Radar	92.587	83.735	96.022	-	96.022	107.017	110.332	113.226	28.310	0.000	631.229

**Remarks**

**E. Acquisition Strategy**

The Service Acquisition Executive (SAE) designated the 3DELRR program a Middle Tier of Acquisition (MTA) Rapid Prototyping effort on 27 Dec 19. The program used Other Transactional Agreements to conduct the competitive prototype capability demonstrations. On 15 Mar 21, the SAE delegated contract award and down select decision authority to the Air Force Program Executive Officer (PEO) Digital. On 1 Apr 22, the SAE designated 3DELRR an MTA Rapid Fielding effort, thereby concluding the Rapid Prototyping effort and enabling the program to start production of the first two initial production units. 3DELRR is tentatively scheduled to transition from an MTA to a Major Capability Acquisition program in early 2025.

The Milestone Decision Authority for the 3DELRR program is the Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics. Program management for the 3DELRR program is under direction of PEO Digital, located at Hanscom AFB, MA. The Air Force Life Cycle Management Center located at Wright-Patterson AFB, OH is the contracting authority for the 3DELRR program. AFLCMC provides contracting, legal, comptroller, programmatic, engineering, test, and logistics support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 4				PE 0207455F / Three Dimensional Long-Range Radar (3DELRR)				646002 / Three Dimensional Expeditionary Long Range Radar							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
TPY-4 Prime Contract	C/FFP	Lockheed Martin : Syracuse, NY	0.000	10.964	Jan 2023	9.763	Mar 2024	1.966	Jan 2025	-		1.966	Continuing	Continuing	-
<b>Subtotal</b>			0.000	10.964		9.763		1.966		-		1.966	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering - C	SS/CPFF	GTRI : Atlanta, GA	0.000	0.500	Jun 2023	1.900	Jun 2024	0.301	Jun 2025	-		0.301	Continuing	Continuing	-
System Engineering - D	SS/CPFF	MITRE : Bedford, MA	0.000	0.000	Sep 2023	0.000	Sep 2024	1.800	Sep 2025	-		1.800	Continuing	Continuing	-
<b>Subtotal</b>			0.000	0.500		1.900		2.101		-		2.101	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Force Operational Test and Evaluation Center (AFOTEC)	PO	AFOTEC Det 2/C2 : TBD	0.000	-		2.837	Sep 2024	1.633	Dec 2024	-		1.633	Continuing	Continuing	-
Government Developmental Test and Evaluation Planning and Preparation	PO	46 TS : Eglin AFB, FL	0.000	2.168	Oct 2023	4.983	Sep 2024	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			0.000	2.168		7.820		1.633		-		1.633	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support Costs	Various	AFLCMC/HBDD : Hanscom AFB, MA	0.000	0.327	Jul 2023	0.280	Jul 2024	2.400	Jul 2025	-		2.400	Continuing	Continuing	-





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207455F / <i>Three Dimensional Long-Range Radar (3DELRR)</i>	<b>Project (Number/Name)</b> 646002 / <i>Three Dimensional Expeditionary Long Range Radar</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Three Dimensional Expeditionary Long Range Radar</i></b>				
Government Test	1	2024	1	2026
Develop and test interface to Integrated Fire Control Network	2	2023	2	2026
Develop and test full complement of electronic protection techniques	2	2023	2	2026
Develop and test unique classification techniques and additional clutter algorithms	2	2023	2	2026
Develop and test radar templates for other natural and electronic attack environments	2	2023	2	2026

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207522F I <i>Airbase Air Defense Systems (ABADS)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	48.252	78.867	17.273	0.000	17.273	14.361	16.550	16.925	17.334	Continuing	Continuing
640410: <i>Tech Maturation &amp; Risk Reduct</i>	-	48.252	78.867	17.273	0.000	17.273	14.361	16.550	16.925	17.334	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

NOTE: These documents contain an update to the title of the missile defense effort to better communicate the distinction between overarching system and sub-efforts. The new designation is Airbase Air Defense Systems for Missile Defense (ABADS(MD)), instead of Airbase Air Defense Battle Management Command and Control (ABAD BMC2).

The Airbase Air Defense Systems (ABADS) program element is the principal Air Force (AF) program to provide the ability to detect, track, identify, and defeat airborne threats to missions and assets. These threats include small-unmanned aircraft systems (sUAS), Rockets, Artillery and Mortars (RAM), and cruise missiles. These three efforts (missile defense (MD), counter-sUAS (C-sUAS), and counter-RAM (C-RAM)) aim to protect personnel, assets, and infrastructure vital to supporting the national security strategy.

ABADS(MD) is designed as a configurable combination of Commercial Off the Shelf (COTS)/Government Off the Shelf (GOTS) sensor and non-kinetic effector technologies integrated with tailored Battle Management Command and Control (BMC2) software to provide adaptive, resilient, and dedicated air defense capability. The ABADS(MD) system is designed to operate independently or combine with other local and distributed capabilities to form a multi-layered defense-in-depth, improving airbase defense and airbase resiliency.

ABADS(MD) FY25 funding will realize a Government Development Security and Operations (DevSecOps) software pipeline, update software and continue the development and testing of system prototype. ABADS(MD) funding supports and maintains ABADS(MD) transition to a Government DevSecOps software pipeline to further align with the ABMS portfolio (Distributed Battle Management Node, Digital Infrastructure, and Cloud Based Command and Control), permits further completion of remaining requirements specified in the ABAD BMC2 Rapid Prototyping Requirements Document (RPRD), and any prioritized capability upgrades. Specific RPRD requirements funded with FY25 include finalizing integration with Advanced Battle Management System (ABMS) upgrades, finalizing integration of a composite tracking fire solution, finalizing integration with joint service fire control networks, and incorporating the integration of additional sensors and effectors. FY25 funding also enables initial activities required to successfully transfer the ABAD prototyping effort to a Program of Record (PoR).

ABADS Counter-small Unmanned Aircraft Systems (C-sUAS) specifically aims to counter the threats posed by the rapid proliferation of inexpensive yet highly capable systems, and the enemies who target US Service members, Allies, and Coalition partners. The ABADS(C-sUAS) program will continue to analyze evolving threats, evaluate new capabilities, and design an open system architecture that reduces life cycle cost and enables fielding to all 180+ AF installations. ABADS(C-sUAS)

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207522F / <i>Airbase Air Defense Systems (ABADS)</i>
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features a system of systems approach to integrate sensors and effectors into a robust Command and Control (C2) interface able to detect, track, identify, and defeat sUAS threats. The AF works closely with the DoD Joint C-sUAS Office (JCO) to align annual efforts.

ABADS(C-sUAS) FY2025 funding will further develop and test Command, Control, Communication, Computers, and Intelligence (C4I) systems. To include follow-on of Medusa C2 System and focus on needed expeditionary sense and defeat capability development. The Medusa C2 system supports Joint All-Domain Command & Control (JADC2) development and employs electronic warfare capabilities, artificial intelligence for operator task automation, a closed-loop training system for operator certification and proficiency, and track fusion. Funding will support development and test (through bi-weekly software sprints) of Medusa C2 software to further interoperability and incorporation within the ABMS architecture. It will continue electronic warfare upgrades, to include but not limited to new sensor and effector components, and new Ninja skills which leverage full Ninja capability within Medusa C2 and other C2 systems. Ninja is an Omni-direction RF detect and defeat system that detects, IDs and tracks Group One and Two drones by manipulating its command and control signals to either take control of or disable the UAS. Funding will also continue efforts in alignment with the DoD's JCO, include cyber hardening of all new system changes, and support management of JCO funded Ninja development. Additionally it will be utilized to conduct studies, analysis, and evaluations of threats and capability gaps along with evaluation and streamlined acquisition of new capabilities. ABADS(C-sUAS) funding also supports innovation activities to include studies, analyses, requirements definition, and quick-reaction capability prototypes/ demonstrations to accelerate planning for technology transition, technology insertion and future acquisition programs. Additionally, funds will be used to further develop technical solutions for a National Capital Region (NCR) Common Operational Picture (COP) to provide better C-sUAS protection of Presidential aviation assets.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023 \$0.015M was expended for civilian pay expenses in this program element, and in FY2024 \$0.236M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	47.465	78.867	10.654	0.000	10.654
Current President's Budget	48.252	78.867	17.273	0.000	17.273
Total Adjustments	0.787	0.000	6.619	0.000	6.619
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	2.015	0.000			
• SBIR/STTR Transfer	-1.228	0.000			
• Other Adjustments	0.000	0.000	6.619	0.000	6.619

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207522F / <i>Airbase Air Defense Systems (ABADS)</i>
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**Change Summary Explanation**

FY 2023 funding increased by \$2.015M to support C-sUAS JUON effort.  
 FY 2025 funding increased by \$6.600M to support NCR COP effort.  
 FY 2025 funding request was increased by \$0.019K for inflation adjustments.

**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<p><b>Title:</b> ABADS(C-sUAS)</p> <p><b>Description:</b> The ABADS(C-sUAS) program will continue to defend against the emerging and growing airborne threats. This program protects strategic assets vital to national security while bedded down and while on the move. This program will continue to counter emerging threats posed by advancements in enemy employment tactics and commercially available technology.</p> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>- Updating Medusa C2 software to further interoperability and incorporation within the ABMS architecture.</li> <li>- Continuing electronic warfare upgrades, to include but not limited to, new sensor and effector components, and improve Ninja to leverage full Ninja capability within Medusa C2 and other C2 systems.</li> <li>- Continuing efforts in alignment with the DoD's JCO.</li> <li>- Evaluating new capabilities and adding these to the capability storefront to enable streamlined acquisition of capabilities for bases.</li> <li>- Developing and testing, via bi-weekly software sprints, annual software upgrades.</li> <li>- Ensuring cyber security requirements are developed and incorporated in all new system changes.</li> <li>- Cyber hardening all new system changes.</li> <li>- Supporting oversight, management, and execution of JCO funded development efforts.</li> <li>- Conducting studies, analysis, and evaluations of threats and capability gaps to refine and update requirements enabling upgraded and improved capabilities.</li> <li>- Initiating and continuing contractor testing of developed updates.</li> <li>- Investigating and prototyping capabilities to support expeditionary systems.</li> </ul> <p><b>FY 2025 Plans:</b></p> <ul style="list-style-type: none"> <li>- Will continue to update Medusa C2 software to further interoperability and incorporation within the ABMS architecture.</li> <li>- Will continue electronic warfare upgrades, to include but not limited to new sensor and effector components, and new Ninja skills which leverage full Ninja capability within Medusa C2 and other C2 systems.</li> <li>- Will continue efforts in alignment with the DoD's JCO.</li> <li>- Will continue to evaluate new capabilities and add those to the capability storefront to enable streamlined acquisition of capabilities for bases.</li> <li>- Will continue to develop and test, via bi-weekly software sprints, annual software upgrades.</li> </ul>	7.228	5.604	12.235

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207522F / <i>Airbase Air Defense Systems (ABADS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- Will continue to ensure cyber security requirements are developed and incorporated in all new system changes.</li> <li>- Will continue to support oversight, management, and execution of JCO funded development efforts.</li> <li>- Will continue to conduct studies, analysis, and evaluations of threats and capability gaps to refine and update requirements enabling upgraded and improved capabilities.</li> <li>- Will continue efforts in alignment with the DoD's JCO.</li> <li>- Will initiate and continue contractor testing of developed updates.</li> <li>- Will continue to investigate and prototype capabilities to support expeditionary systems.</li> <li>- Will further develop NCR COP technical solutions to include joint interoperability of C-sUAS sensors, development of correlation and fusion process, and to develop cyber-secure cloud infrastructure for data dissemination and processing for C-sUAS protection of Presidential aviation assets</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 Program Funding increased by \$6.619M for NCR COP development</p>			
<p><b>Title:</b> ABADS(MD)</p> <p><b>Description:</b> During this program phase, the ABADS(MD) capability will initially field. RDT&amp;E activities in this phase focus on migration to a government DevSecOps software development framework, alignment with ABMS infrastructure and capabilities, final completion of RPRD software backlog, and incorporation of additional capabilities.</p> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continuing software development utilizing an agile DevSecOps approach</li> <li>- Integrating all software, including joint integrated fire control solution, track manager, tactical radios, ABMS network compatibility and other requirements as specified in the ABAD BMC2 RPRD</li> <li>- Demonstrating integration with an initial effector and supporting sensors</li> <li>- Demonstrating joint service integration with Joint Track Manager Capability (JTMC) and Joint Tactical Integrated Fire Control (JTIFC) capability in ABADS(MD)</li> <li>- Demonstrating an interface into an agreed upon ABMS architecture and C-sUAS C2 networks</li> <li>- Demonstrating compatibility with Tactical Operations Center (TOC) family of systems</li> <li>- Participating in select AF and theater exercises and demonstrations</li> <li>- Incorporating an ABAD system representation in a virtual exercise environment</li> <li>- Demonstrating cost-effective integrated fire control solution for PACAF AOR</li> </ul> <p><b>FY 2025 Plans:</b></p> <ul style="list-style-type: none"> <li>- Will enable successful stand up of Program of Record and ensure transition of ABADS(MD)</li> <li>- Will participate in select AF and theater exercises and demonstrations</li> </ul>	41.024	73.263	5.038

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207522F / <i>Airbase Air Defense Systems (ABADS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
- Will complete migration of software development efforts to government-run DevSecOps software pipeline - Will support initial fielding of ABADS(MD) capability, and any remaining RPRD software work not completed in FY24 - Will develop, test, and field capability enhancements as identified  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decrease due to the RDT&E phase ending and efforts transitioning into the procurement phase.			
<b>Accomplishments/Planned Programs Subtotals</b>	48.252	78.867	17.273

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPAF 03 0207522F: <i>Airbase Air Defense Systems (ABADS) for Missile Defense</i>	-	-	64.665	-	64.665	83.076	130.391	192.686	55.000	Continuing	Continuing
• OPAF 03 0207522F.: <i>Airbase Air Defense Systems (ABADS) for C-sUAS</i>	23.911	5.043	9.550	-	9.550	11.993	12.410	12.670	12.913	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**  
 The ABADS MD program is a Rapid Prototyping effort following a Middle Tier of Acquisition (MTA) approach. The program uses Indefinite Deliverable / Indefinite Quantity (ID/IQ) contracts to support the prototype capability development. The program will transition to Rapid Fielding in FY25.

The program transitions from development to a fielded system in FY25. Currently, the Advanced Battle Management System (ABMS) Division within the Air Force Life Cycle Management Center (AFLCMC) provides contracting, legal, comptroller, programmatic, engineering, test, and logistics support. AFLCMC provides Other Transaction Authority.

C-sUAS implements a "Government-as-the-Integrator" approach by procuring engineering and integration services to supplement Government resources, in an effort to keep pace with the adversary threat environment. For FY25, the primary efforts endeavor to improve cybersecurity posture, and resolve system gaps. Example integration services also include, but are not limited to, establishing a CI/CD software pipeline, implementing Agile DevSecOps processes and deploying model-based design. As possible, the Government will leverage small business innovative research opportunities to generate new code to produce capabilities for detection and defeat of airborne threats. The milestone decision authority (MDA) for this effort is PEO Digital.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207522F / Airbase Air Defense System (ABADS)	<b>Project (Number/Name)</b> 640410 / Tech Maturation & Risk Reduct s
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<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
ABADS(C-sUAS) - Joint Serv System Development	Various	Not specified. : TBD	-	2.052	Sep 2023	-		-		-		-	Continuing	Continuing	-
ABADS(C-sUAS) - Software Development	Various	Not specified. : TBD	-	4.171	Mar 2024	2.179	Apr 2024	1.400	Oct 2024	-		1.400	Continuing	Continuing	-
ABADS(C-sUAS) - Hardware System Development	Various	Not specified. : TBD	-	-		2.019	Apr 2024	1.403	Oct 2024	-		1.403	Continuing	Continuing	-
ABADS(C-sUAS) - NCR COP Development	Various	Not specified. : TBD	-	-		-		6.661	Nov 2024	-		6.661	Continuing	Continuing	-
ABADS(MD) - Prototype Development (Hardware / Software)	C/CPFF	2.1 - Proto / 2.2 s/w : WPAFB, OH	-	24.996	May 2023	43.533	Mar 2024	-		-		-	0.000	68.529	-
ABADS(MD) - Army IBCS Integration	MIPR	2.1 - Prototyping : TBD	-	9.999	Mar 2023	6.252	Jun 2024	-		-		-	0.000	16.251	-
ABADS(MD) - Non-Kinetic Effector Development	C/CPFF	2.1 - Prototyping : WPAFB, OH	-	0.000	Feb 2024	3.314	Aug 2024	-		-		-	0.000	3.314	-
ABADS(MD) - Sensor Laydown Study/ Architecture Support	TBD	2.1 - Prototyping : TBD	-	3.714	Aug 2023	4.000	Apr 2024	-		-		-	0.000	7.714	-
ABADS(MD) Government Software Pipeline	TBD	Software Development : TBD	-	-		5.000	Aug 2024	2.833	Dec 2024	-		2.833	Continuing	Continuing	-
<b>Subtotal</b>			-	44.932		66.297		12.297		-		12.297	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Direct Cite Authority (MD)	Various	Not specified. : TBD	-	-		2.239	Dec 2023	2.205	Oct 2024	-		2.205	Continuing	Continuing	-
Direct Cite Authority (C-sUAS)	Various	Not specified. : TBD	-	0.017	Sep 2023	0.236	Apr 2024	0.260	Oct 2024	-		0.260	Continuing	Continuing	-
<b>Subtotal</b>			-	0.017		2.475		2.465		-		2.465	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207522F / Airbase Air Defense System (ABADS)	<b>Project (Number/Name)</b> 640410 / Tech Maturation & Risk Reduct s (ABADS)
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ABADS(C-sUAS) - Test Support	Various	Not specified : TBD	-	0.073	Apr 2024	-		0.100	Dec 2024	-		0.100	Continuing	Continuing	-
ABADS(C-sUAS) - Test Range	Various	Not specified : TBD	-	-		-		1.500	Oct 2024	-		1.500	Continuing	Continuing	-
ABADS(MD) - Test	Various	2.3 - System Testing : TBD	-	1.864	Aug 2023	-		-		-		-	0.000	1.864	18.380
ABADS(MD) - Demonstration	Various	2.3 - System Testing : TBD	-	0.000	Jun 2023	5.700	Jun 2024	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	1.937		5.700		1.600		-		1.600	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ABADS(C-sUAS) - Management Services	C/Various	Various : Hanscom, MA	-	0.915	Jul 2023	1.170	Feb 2024	0.911	Oct 2024	-		0.911	Continuing	Continuing	-
ABADS(MD) - A&AS Support	C/Various	Various (2.1, 2.2, 2.3) : WPAFB, OH	-	0.300	Aug 2023	2.725	Mar 2024	-		-		-	Continuing	Continuing	24.954
ABADS(MD) - Travel	Various	Various (2.1, 2.2, 2.3) : TBD	-	0.151		0.500		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	1.366		4.395		0.911		-		0.911	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		-	48.252	78.867	17.273	-	17.273	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207522F / Airbase Air Defense System (ABADS)	<b>Project (Number/Name)</b> 640410 / Tech Maturation & Risk Reduct s (ABADS)

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>ABADS(C-sUAS) - Events</b>	
1.1 - ABADS(C-sUAS) - Joint Service Lead System Development	████████████████████
1.2 - ABADS(C-sUAS) - Software Development	██
1.3 - ABADS(C-sUAS) Hardware System Development	██
1.4 - ABADS(C-sUAS) NCR COP Development	██
1.5 - ABADS(C-sUAS) - Test	██
1.6 - ABADS(C-sUAS) - Test Range	██
<b>ABADS(MD) - Events</b>	
2.1 - ABADS(MD) - Prototype Development	████████████████████
2.2 - ABADS(MD) - BMC2 Development (Software)	████████████████████
2.3 - ABADS(MD) - Prototype Testing	████████████████████
2.4 - ABADS(MD) - Operational Software Continuous Integration/Test/Delivery	██

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207522F / Airbase Air Defense System (ABADS)	<b>Project (Number/Name)</b> 640410 / Tech Maturation & Risk Reduct s (ABADS)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>ABADS(C-sUAS) - Events</b>				
1.1 - ABADS(C-sUAS) - Joint Service Lead System Development	4	2023	4	2024
1.2 - ABADS(C-sUAS) - Software Development	4	2023	1	2029
1.3 - ABADS(C-sUAS) Hardware System Development	3	2024	1	2029
1.4 - ABADS(C-sUAS) NCR COP Development	1	2025	1	2029
1.5 - ABADS(C-sUAS) - Test	2	2023	1	2029
1.6 - ABADS(C-sUAS) - Test Range	1	2024	4	2029
<b>ABADS(MD) - Events</b>				
2.1 - ABADS(MD) - Prototype Development	3	2023	1	2025
2.2 - ABADS(MD) - BMC2 Development (Software)	3	2023	1	2025
2.3 - ABADS(MD) - Prototype Testing	3	2024	4	2025
2.4 - ABADS(MD) - Operational Software Continuous Integration/Test/Delivery	4	2024	4	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207606F <i>Joint Simulation Environment (JSE)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	191.337	0.000	191.337	363.646	337.691	367.214	342.712	Continuing	Continuing
642407: <i>Joint Simulation Environment</i>	-	0.000	0.000	191.337	0.000	191.337	363.646	337.691	367.214	342.712	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

In FY 2025, PE 0207142F, F-35 Squadrons, Project 675346, F-35 efforts were transferred to PE 0207606F, Joint Simulation Environment (JSE), Project 642407, Joint Simulation Environment, in order to consolidate all JSE funding under one PE 0207606F. This is not a new start.

In FY 2025, PE 0207605F, Wargaming and Simulation Centers, Project 672888, Distributed Mission Operations Center (DMOC) efforts were transferred to PE 0207606F, Joint Simulation Environment (JSE), Project 642407, Joint Simulation Environment, in order to consolidate all JSE funding under one PE 0207606F. This is not a new start.

Joint Simulation Environment (JSE) is the Air Force's integrated digital test and training range solution, enabling multi-platform, multi-domain interoperability via a government-owned-and operated architecture. It incorporates models for current and next-generation threats, a physics-based environment, and simulators employing platform Operational Flight Program (OFP) software.

JSE supports developmental and operational testing, High-End Advanced Tactics, Training, and Testing (HEAT3), operational plan rehearsals, large force exercises, and aircrew training events. This capability directly supports USAF Warfare Center, USAF Weapon School, Air Force Test Center (AFTC) and Air Force Operational Test and Evaluation Center (AFOTEC) test requirements, and platform training enclaves that cannot train or test in open air due to operational security (OPSEC) and the inability to adequately simulate operations in the real world. JSE encompasses, but is not limited to, lab facilities for development and experimentation, as well as multiple test and training locations: Joint Integrated Test & Training Center Nellis AFB (JITTC-N) (previously known as the Virtual Test & Training Center (VTTC)), Digital Test & Training Range Nellis AFB (DTTR-N), Digital Test & Training Range Edwards AFB (DTTR-E), and future planned location JITTC-E (Joint Base Elmendorf-Richardson).

JSE Platform-In-A-Box ("PIAB - OFP Based Simulator) Development: Entails the study, evaluation, early experimentation, and development for platforms beyond the current/existing F-35 Initial Operational Test & Evaluation (IOT&E) capability. Activities include early analysis of platform Operational Flight Program (OFP) against JSE software and interface standards, as well as common hardware standards enabling remote monitoring, updates, and security management.

JSE Digital Test and Training Ranges: Maintains and upgrades existing test capabilities, to include the continuation of installation, integration, and verification/validation activities in support of fielded and future platforms and Virtual Air Threats (VATS).

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207606F <i>I Joint Simulation Environment (JSE)</i>
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JSE Core Environment Development/Integration: Continues to develop JSE foundational capabilities enabling further test, integration, and training. Activities include but are not limited to experimentation, development/enhancement of JSE connected systems, tools, services, hardware, and simulators to integrate and enhance new and existing digital entities (platforms, sensors, adversary & friendly weapons, ground & airborne threats), blue weapons models, manned airborne threat simulators, and common services including but not limited to weather effects, infrared (IR) models, cyber, and space.

Funding may also be used to address Diminishing Manufacturing Sources (DMS) issues, obsolescence resolution and similar emerging requirements, as well as for overarching programmatic support. The JSE Enterprise intent is to replicate the digital test and training range capability at multiple test and training locations. Funding for this exhibit is contained in PE 0207606F.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. As this PE was established in FY 2025, civilian pay costs in FY 2023 and FY 2024 are non-applicable.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	191.337	0.000	191.337
Total Adjustments	0.000	0.000	191.337	0.000	191.337
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	191.337	0.000	191.337

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> JSE Platform In-A-Box ("PIAB"- OFP Based Simulator) Development	0.000	0.000	37.605
<b>Description:</b> Includes, but is not limited to, platform study, evaluation, and early experimentation activities to assess Operational Flight Program (OFP) against JSE Government Simulator Interface (GSI) and Simulator Common Architecture, Requirements, &			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0207606F <i>I Joint Simulation Environment (JSE)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Standards (SCARS). The integration of additional/future platforms will utilize government-developed architecture and standards to re-host OFPs, and initial analysis/studies will provide data to support the continued development of the environment itself. Involves the evaluation and integration of new and emerging technologies including, but not limited to, Extended Reality (XR)/ Virtual Reality (VR) goggle capability, artificial intelligence (AI), and common hardware solutions, to include common cockpit configurations for training-focused sites. Supports research and development activities to generate data/conduct analysis of platform OFP-based simulators' hardware and software, to support the integration and testing of OFP-based simulators through common development standards.				
<b>FY 2024 Plans:</b> N/A				
<b>FY 2025 Plans:</b> Conduct studies, evaluations, and early experimentation activities necessary to assess Operational Flight Program (OFP) interoperability - specifically, F-35, F-22, and F-15EX platform OFPs, but not limited to - with the synthetic environment, as well as compare OFPs against JSE GSI and SCARS Simulator standards. Initiate the evaluation and integration of new technologies including, but not limited to, XR/VR Goggle capability, and JSE common cockpit configuration.				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to consolidation of funds from PE 0207142F and PE 0207605F to JSE PE 0207606F, includes studies, evaluations, and early experimentation activities for multiple platform OFPs.				
<b>Title:</b> JSE Digital Test and Training Ranges		0.000	0.000	17.810
<b>Description:</b> Maintains existing test capabilities, to include platform installation, integration, and verification and validation activities at DTTR-N and DTTR-E (Digital Test and Training Range Nellis and Edwards, respectively). Supports ongoing day-to-day digital test range operations, JSE organic development capability, and fielded and future Operational Test & Evaluation (OT&E) and Developmental Test & Evaluation (DT&E) activities. Establishes groundwork for hardware in-the-loop testing capability, future platform testing capability, and early experimentation efforts.				
<b>FY 2024 Plans:</b> N/A				
<b>FY 2025 Plans:</b> Plans include, but are not limited to, continued F-35, F-22, and Virtual Air Threats (VATS) installation, integration, and verification and validation activities. Continued support for day-to-day digital test and training range operations, JSE organic development				

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0207606F <i>I Joint Simulation Environment (JSE)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
capability, and fifth generation Operational Test & Evaluation (OT&E) activities. Establish foundation for hardware in-the-loop testing capability, future platform testing capability, and early experimentation efforts.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to consolidation of funds from PE 0207142F and PE 0207605F to JSE PE 0207606F, and to support additional platform integration test and evaluation activities.				
<b>Title:</b> JSE Core Environment Development/Integration  <b>Description:</b> Continues to develop JSE capabilities enabling further test, integration, and training. Development activities are accomplished by leveraging USAF and USN organic software development capabilities at geographically separated locations using shared classified environments, known collectively as the JSE Common Development Environment (CDE). CDE provides the foundation for secure digital collaboration, to perform DevSecOps (development, security, and operations) activities, share code, evaluate new capabilities, and distribute updated software versions to all connected locations. Costs include, but are not limited to, establishing equipment, personnel, processes, contracts, etc. to support JSE product development for the Air Force.  <b>FY 2024 Plans:</b> N/A  <b>FY 2025 Plans:</b> Efforts include, but are not limited to, continued Global Reusable Interface Domain (GRID) development, Next Generation Threat System (NGTS) virtual entities expansion, Weapon Server Common Environment (WSCE) server weapons integration, advanced strategic weapons, GRID core services (weather, Infrared, Electronic Warfare, Cyber, Space, data links, communication, etc.), Virtual Air Threats (VATs) development and Multi Mission Test Platform (MMTPs) refinement. Continue to develop, test, document, and deliver aircraft threat models using the Threat Modeling and Analysis Program (TMAP), Collaborative Development Environment at higher security levels, Multi-Level Security experimentation, and continued capability integration within JSE.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to consolidation of funds from PE 0207142F and PE 0207605F to JSE PE 0207606F, as well as addition of funds to PE 0207606F to support increased development of core synthetic environment.		0.000	0.000	135.922
<b>Accomplishments/Planned Programs Subtotals</b>		0.000	0.000	191.337
<b>D. Other Program Funding Summary (\$ in Millions)</b> N/A <b>Remarks</b>				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force Date: March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207606F <i>I Joint Simulation Environment (JSE)</i>
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**E. Acquisition Strategy**

The JSE program will leverage a combination of interagency agreements and contracts to support the continued development, experimentation, integration, testing and fielding of the core environment software and hardware infrastructure. Designation of an Air Force Program Executive Officer (PEO) for this JSE effort occurred in December 2022, and a Lead MAJCOM was established in March 2023. As such, the Air Force Program Office is actively pursuing the most effective strategies and acquisition pathways for accomplishing the various lines of effort under the JSE Enterprise. To support integration of additional platforms with the synthetic environment, the JSE program office will execute agreements with aircraft platform program offices and leverage existing platform contracts to support risk reduction, development, integration & test of additional platform-specific simulator capabilities. Services contracts will be leveraged to support test support operations requirements at sites intended to perform JSE-based developmental and operational test, to perform test capability development and test customer support activities. Additionally, the Air Force Program Office will continue to engage with its Navy counterparts to ensure DAF requirements are met, as well as to maintain a shared understanding and commonality across the JSE Enterprise.

Costs include, but are not limited to, establishing equipment, personnel, processes, contracts, etc. to support JSE Enterprise product development.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207606F / <i>Joint Simulation Environment (JSE)</i>	<b>Project (Number/Name)</b> 642407 / <i>Joint Simulation Environment</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Joint Simulation Environment Development</i></b>	
Software Pathway Planning Phase	
Software Pathway Execution Phase	
Minimum Viable Product (MVP)	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0207606F / <i>Joint Simulation Environment (JSE)</i>	<b>Project (Number/Name)</b> 642407 / <i>Joint Simulation Environment</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Joint Simulation Environment Development</i></b>				
Software Pathway Planning Phase	1	2024	2	2025
Software Pathway Execution Phase	2	2025	4	2029
Minimum Viable Product (MVP)	2	2026	2	2026

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0208030F / <i>War Reserve Materiel - Ammunition</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	10.288	8.175	5.226	0.000	5.226	10.443	10.531	10.912	11.127	Continuing	Continuing
648030: <i>Operational Weaponeering and Analysis</i>	-	10.288	8.175	5.226	0.000	5.226	10.443	10.531	10.912	11.127	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

The AF has assumed operational support and development of the Integrated Munitions Effects Assessment (IMEA) software program from the Defense Threat Reduction Agency.

**A. Mission Description and Budget Item Justification**

The Operational Weaponeering and Analysis (OWA) project provides mission critical classified weapons' effectiveness analysis and Modeling and Simulation (M&S) tools in direct support of the Air Combat Command (ACC) Targeting mission. The M&S Targeting tool capabilities are designed to meet both Air Force (AF) Master Plan and DoD National Defense Strategy objectives and LOEs.

The program is integrating ACC and AFRL MAJCOM goals to establish a Digital Engineering and Transformation path to create a 'pipeline' of capabilities that will support weapon and target requirements integration from R&D to Operational Warfighting within ACC, Combatant Commands (CCMDs), and other DoD Intelligence Agencies. OWA provides mission critical National Security Software (NSS) M&S software to meet instructions and directives found in CJCSI 3160 and 3170, as well as, AFI 14-401 and JP 3-60. M&S classified software tools are operationally critical to overall mission success and weapons employment. Weapons employment is not legally possible until a complete target and weapon analysis has been completed. The classified M&S software tools are in constant development to support evolving weapon phenomenology (conventional, directed energy, high power microwave, cyber, hypersonic, etc.) within the Weapons PEO and target modeling of a wide range of multi-domain targets, which includes structural, ground mobile, ships, and more.

The Integrated Munitions Effects Analysis (IMEA) software is a classified mission critical program that provides Air Force Operational Warfighters with unique analytical capabilities. These unique capabilities are associated with Hard Deeply Buried Targets (HDBTs), Nuclear Weapons, and Weapons of Counter Mass Destruction (C-WMD) weapons employment. In addition, IMEA also analyzes national strategic sites facility defeat information with Nuclear and WMD weapons in support of Global Strike Command operational warfighter requirement. IMEA is also the software for Massive Ordnance Penetrator (MOP) and Massive Ordnance Air Blast (MOAB) lethality estimates in DoD.

The Air Force Target and Effect Software (AFTES) provides an all-domain weapon and target capability to support Advanced Target Development and Intermediate Target Development within ACC and Joint environments. This classified software creates software that is digital, agile, and open. The tool is focused on integration of capabilities from ABMS into the JADC2 environment within a single open Modelling and Simulation (M&S) Engagement Framework to provide capabilities to the tactical edge. In addition, AFTES will draw its requirements from the ACC Agile Combat Employment (ACE) LOE to meet objectives laid out by the CSAF.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0208030F / <i>War Reserve Materiel - Ammunition</i>
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In addition to operational support, IMEA and AFTES provides analytical reachback for both operational and weapon acquisition communities. OWA also aligns with Air Force Research Laboratory (AFRL) and Defense Threat Reduction Agency (DTRA) Research and Development (R&D) weapon lethality and effectiveness missions to create an R&D pipeline of capabilities all maintained in a single M&S software framework which allows the software to be easily developed, deployed, and maintained within the OWA Division.

The AF assumed operational support and development of the IMEA program from the Defense Threat Reduction Agency in FY22. DTRA will continue to support Air Force with basic R&D research of new capabilities associated with HDBT, Nuclear, and WMD as defined by Memorandum of Agreement (MOA) between DTRA and the AF. OWA has become the operational transition partner for DTRA and AFRL to integrate and field all weapon and target R&D technology to AF and other Joint Environments.

This program leverages Digital acquisition tenets of open, agile, and digital. Invests in analytical, information management, data management, digital environments, networks, facilities, and security infrastructure upgrades directly supporting development and sustainment of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions.

The FY2025 funding request was reduced by \$5.162 million to account for the availability of prior year execution balances.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.350M was expended for civilian pay expenses in this program element, and in FY24 \$0.375M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	10.288	8.175	10.380	0.000	10.380
Current President's Budget	10.288	8.175	5.226	0.000	5.226
Total Adjustments	0.000	0.000	-5.154	0.000	-5.154
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-5.154	0.000	-5.154

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0208030F / <i>War Reserve Materiel - Ammunition</i>
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**Change Summary Explanation**

FY2025 funding request was reduced by \$5.162 million to account for the availability of prior year execution balances and increased because of minor inflation adjustments (~\$8K).

**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<p><b>Title:</b> Operational Weaponing and Analysis</p> <p><b>Description:</b> The Operational Weaponing and Analysis (OWA) provides weapons' effectiveness data and classified software Modeling and Simulation (M&amp;S) tools to support the Air Force (AF) Requirements Process, Combatant Commands (COCOMs), and Major Commands (MAJCOMS).</p> <p><b>FY 2024 Plans:</b> The AFTES and IMEA Next Generation products will be released to operational warfighters across ACC and Joint environments through via our Continuous Integration and Continuous Development (CI/CD) pipeline of capabilities supporting ACC LOEs, Weapon PEO Initiatives, and National Defense Strategy goals. Both AFTES and IMEA will be built using the EndGame Framework modular systems open architecture (MOSA) with the goal of producing a lethality Authoritative Source of Truth (ASoT) that will become the Air Force Combined Effects Repository (AFCER) to be leveraged by ABMS programs. OWA will continue to expand our AF Weapon and Target (WEPTAR) Operational Users Working Group to provide continuous software reviews supporting our accreditation and validation efforts. OWA will provide this singularly unique forum for AF and Joint service level demonstrations of developmental methodologies and data to support weapon and target effectiveness both within AF while support other Services. Collect, assess and inject operational user and analyst end user feedback into the product backlogs to enhance 'Speed to Fleet' efforts.</p> <p>Will further the development and accreditation of the DEVSECOPS pipeline tool stack to support Agile baed Continuous Integration and Continuous Development (CI/CD) pipeline and provide quarterly Technical Product Previews (TPPs) of evolving phenomenology models and operational capabilities all vetted by the WEPTAR Operational Community stakeholders.</p> <p>Will continue focus on all domain development to include kinetic and directed energy in FY24 to create KE/DE synergistic effects. Review Cyber integration into the EndGame Framework architecture. Continue kinetic weapon development to support target and new weapon data models including hypersonics to support multi-domain capabilities within both IMEA and AFTES using the EndGame Enterprise framework to support a common AF and Joint M&amp;S lethality framework. All weapon data, target data and methodology will be stored in the Air Force Combined Effects Repository (AFCER), hosted on the Weapons Software Simulation Network (WESSNET).</p>	10.288	8.175	5.226

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0208030F / <i>War Reserve Materiel - Ammunition</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

Continue refactoring IMEA weapon and target data and methodologies into a common engagement lethality architecture to enable CI/CD continuous Approval to Operate (cATO) pipeline usage by AFTES. Continue to develop AFTES using the AFCER pipeline capabilities that will allow leveraging of hydrocode capabilities developed and supported by Department of Energy (DoE) national labs R&D community.

Develop, validate, and accredit improved computer vulnerability and weapons effectiveness in support of warfighter requirements. Integrate Verification, Validation and Accreditation (VV&A) and Independent Verification and Validation (IV&V) efforts into Agile product development processes.

**FY 2025 Plans:**  
AFCER will be enhanced in FY25 with new weapon methodology from our digital pipeline coordinated with AFRL and DTRA mission partners for ultimate integration with AFTES and IMEA programs. As noted, AFCER is being developed as part of the AFTES ecosystem of lethality and target capabilities to be used by ABMS or even JADC2.

OWA will continue to expand our AF Weapon and Target (WEPTAR) Operational Users Working Group to provide continuous software reviews supporting our accreditation and validation efforts. The goal is to push R&D capabilities forward by shifting operational review left in the agile development cycle. This allows for 'Speed of Need' to occur within AF operational communities.

Develop and accredit the DEVSECOPS pipeline tool stack supporting Agile based Continuous Integration and Continuous Development (CI/CD) pipeline and conduct quarterly AFTES and IMEA Technical Product Previews (TPPs) of evolving phenomenology models and operational capabilities. Program impacts will be briefed to WEPTAR Operational Community and MAJCOM stakeholders.

Will continue focus on all domain development to include kinetic, directed energy, and cyber in FY25 to create KE/DE synergistic effects and cyber evaluations of targets. Future effort on focused kinetic weapon development to support hypersonic development within the multi-domain of capabilities. Limited weapon data, target data and methodology will be hosted in AFCER.

Verification, Validation and Accreditation (VV&A) and Independent Verification and Validation (IV&V) efforts will also be a future focus. Enhancement of Agile pipeline development processes will be supported by enhancing unit, integration, functional, and system level testing.

FY 2023	FY 2024	FY 2025

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0208030F / <i>War Reserve Materiel - Ammunition</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Develop, validate, and accredit improved computer vulnerability and weapons effectiveness models in support of warfighter requirements; will continue the integration of Verification, Validation and Accreditation (VV&A) and Independent Verification and Validation (IV&V) efforts into Agile product development processes.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding in FY25 decreased by \$5.162M due to the availability of prior year execution balances, and increased because of minor inflation adjustments (~\$8K).			
<b>Accomplishments/Planned Programs Subtotals</b>	10.288	8.175	5.226

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

N/A

**E. Acquisition Strategy**

Performance-based contracts are primarily used for this support. IMEA and AFTES maximize the use of competitive awards and uses various contract types, employs large and small contractors, and is focused to achieve agency socio-economic goals and incorporate DoD acquisition reform initiatives.

Both AFTES and IMEA are paralleling AF Digital Engineering contracting effort to add Agile capabilities into performance contracts. IMEA and AFTES use physics based modeling requiring specialized methodology development unique to specific weapon capabilities. The Operational and Analysis (OWA) has identified multiple sources of software development include both commercial and defense working capital.

OWA identified multiple contracts to support agile and digitally focused software development efforts using preexisting indefinite delivery/indefinite quantity contracts (IDIQs) including the Eglin Wide Area Acquisition Contract (EWAAC), General Services Administration (GSA) OSAIS, and Defense Threat Reduction Agency (DTRA) Tools contract.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0208030F / <i>War Reserve Materiel - Ammunition</i>	<b>Project (Number/Name)</b> 648030 / <i>Operational Weaponeering and Analysis</i>

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b><i>Integrated Munitions Effects Assessment (IMEA)</i></b>																												
Integrated Munitions Effects Assessment (IMEA)																												
<b><i>Air Force Targeting and Effects Software (AFTES)</i></b>																												
Air Force Targeting and Effects Software (AFTES)																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0208030F / <i>War Reserve Materiel - Ammunition</i>	<b>Project (Number/Name)</b> 648030 / <i>Operational Weaponeering and Analysis</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Integrated Munitions Effects Assessment (IMEA)</i></b>				
Integrated Munitions Effects Assessment (IMEA)	1	2023	4	2029
<b><i>Air Force Targeting and Effects Software (AFTES)</i></b>				
Air Force Targeting and Effects Software (AFTES)	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	37.460	25.157	33.349	0.000	33.349	34.178	34.882	36.145	36.860	Continuing	Continuing
641334: <i>Common Data Link (CDL)</i>	-	37.460	25.157	33.349	0.000	33.349	34.178	34.882	36.145	36.860	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Common Data Link Executive Agent (CDL EA) provides the DoD standard for interoperable, multi-service, multi-agency, Intelligence, Surveillance, and Reconnaissance (ISR) datalinks for 15,000 DoD manned/unmanned airborne and ground terminals. As the DoD CDL EA, the Air Force is responsible for cross-service application of CDL RDT&E Military Intelligence Program (MIP) funds facilitating compliance to DoD mandates. The CDL EA develops, modifies, distributes, and maintains specifications for the CDL waveform family; ensuring design configuration control, commonality, and interoperability among ISR platforms. The CDL EA also funds and supports cross-Service teams that manage development, maturation, and migration of CDL technologies.

CDL EA enables compliance with OSD mandates to effectively utilize spectrum, use approved cryptographic equipment, and provide direct support to current operations. CDL is a vital link in DoD's existing and emerging communication architectures, providing flexibility to accommodate Command and Control (C2) data and myriad types of Signals Intelligence (SIGINT), Geospatial Intelligence (GEOINT), and Full-Motion Video (FMV) data. The CDL specifications permit interoperable operations of current and future ISR assets worldwide by providing sensor data directly via point-to-point and air-to-air or compatible satellite broadcast links to ground sites, surface ships, airborne platforms, and dismounted users to support Joint All-Domain Command and Control (JADC2) warfare.

CDL EA's research and development activities support a broad array of tactical (including tactical data links (TDL) and high capacity backbone (HCB)), operational, and strategic ISR users. High priority investment activities support and include: achieving higher data rates, open architecture development, multi-access and multi-node network management, cryptographic modernization, advancements needed to operate in contested environments, terminal design enhancements, and operations in other spectral bands for spectrum efficiency. Activities also include studies and analysis to support current and future requirements documentation, program planning and execution. CDL prototype terminal designs provide for future technology insertion and reduce non-recurring engineering and life-cycle costs to the user.

In addition, the Cryptographic Core Modernization (CCM) thrust enables CDL to develop a miniaturized gigabit rate crypto devices capable of securing CDL data through improving Transmission Security (TRANSEC) capabilities. The miniaturized crypto device will allow faster throughput while reducing Size, Weight, and Power (SWaP) requirements.

The FY 2024 funding request was reduced by 7.330M to account for the availability of prior year execution balances, resulting in an increase for FY 2025. The program has been restructured and controls have been put in place to resolve past execution issues.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0305236F <i>I Common Data Link Executive Agent (CDL EA)</i>

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.300M was expended for civilian pay expenses in this program element, and in FY24 0.612M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	37.460	25.157	33.291	0.000	33.291
Current President's Budget	37.460	25.157	33.349	0.000	33.349
Total Adjustments	0.000	0.000	0.058	0.000	0.058
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.058	0.000	0.058

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Common Data Link (CDL) Technology Advancement	14.062	11.757	15.585
<b>Description:</b> CDL evolutionary concept development, exploratory prototyping, advanced technology demonstrations, and studies of emerging technologies and capability gaps.			
<b>FY 2024 Plans:</b>			
- Continue to research and evaluate technology developments for enhancing the CDL enterprise networking architecture, to include network management devices, applications and advanced algorithms.			
- Continue to research, evaluate and develop more spectrally efficient waveforms to support Combatant Command demand for higher bandwidth transmission and improved jam resistant capabilities.			
- Continue to research, evaluate and develop improvements to CDL waveforms to lower probability of detection and interception to support Combatant Command demand for improved covertness of ground and airborne forces.			
- Continue development of enhanced, CDL-based Intelligence, Surveillance and Reconnaissance (ISR) communication capabilities across multiple platforms and echelons among U.S and allied partners.			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- Continue development of a collaborative CDL modeling and simulation environment using Navy Research Lab's Extendable Mobile Ad-Hoc Network Emulator (EMANE) framework for CDL performance analysis and waveform advancements. The CDL EMANE environment will be the baseline for joint Service and vendor collaboration as the community modernizes CDL for the future fight.</li> <li>- Continue waveform performance analysis of current CDL capabilities and future enhancements on their ability to achieve mission success in National Defense Strategy (NDS) derived scenarios to focus future CDL modernization efforts to update the CDL specifications.</li> <li>- Continue analysis and study of multi-beam antenna technology to further improve CDL networking and Low Probability of Interception / Low Probability of Detection / Anti-Jam (LPI/LPD/AJ) capabilities in future contested battlespace.</li> <li>- Continue antenna array modernization with the Extremely Wideband Operations (EWO) antenna array research and development.</li> <li>- Continue to research, evaluate and develop an Open Systems Architecture to improve CDL enterprise interoperability and terminal design flexibility.</li> <li>- Continue prototyping and advanced technology demonstrations in support of emerging communication backbone architecture, including high capacity backbone (HCB) development, across multi-domains.</li> <li>- Continue requirements and design improvements for more robust BE-CDL support to smaller Group 1 UAV.</li> <li>- Continue exploratory prototyping efforts and advanced technology demonstrations in support of emerging communication backbone architecture, including HCB development, across air, space and terrestrial layers, to include agile high capacity data transport, assured communications and multi-mode access network.</li> <li>- Continue research and evaluate developing Artificial Intelligence (AI) technologies to support faster correlation and fusion of ISR and CDL network management processes.</li> <li>- Continue to research and evaluate developing technologies to minimize the National Security Agency (NSA) required certification requirements for terminals while standardizing Communications Security (COMSEC) and Transmission Security (TRANSEC) implementation.</li> </ul> <p><b>FY 2025 Plans:</b></p> <ul style="list-style-type: none"> <li>- Will continue to research and evaluate technology developments for enhancing the CDL enterprise networking architecture, to include network management devices, applications and advanced algorithms.</li> <li>- Will continue to research, evaluate and develop more spectrally efficient waveforms to support Combatant Command demand for higher bandwidth transmission and improved jam resistant capabilities.</li> <li>- Will continue to research, evaluate and develop improvements to CDL waveforms to lower probability of detection and interception to support Combatant Command demand for improved covertness of ground and airborne forces.</li> <li>- Will continue development of enhanced, CDL-based Intelligence, Surveillance and Reconnaissance (ISR) communication capabilities across multiple platforms and echelons among U.S and allied partners.</li> </ul>			

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 Program Element (Number/Name)</b> PE 0305236F I Common Data Link Executive Agent (CDL EA)
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- Will continue development of a collaborative CDL modeling and simulation environment using Navy Research Lab's Extendable Mobile Ad-Hoc Network Emulator (EMANE) framework for CDL performance analysis and waveform advancements. The CDL EMANE environment will be the baseline for joint Service and vendor collaboration as the community modernizes CDL for the future fight.</li> <li>- Will continue waveform performance analysis of current CDL capabilities and future enhancements on their ability to achieve mission success in National Defense Strategy (NDS) derived scenarios to focus future CDL modernization efforts to update the CDL specifications.</li> <li>- Will continue analysis and study of multi-beam antenna technology to further improve CDL networking and Low Probability of Interception / Low Probability of Detection / Anti-Jam (LPI/LPD/AJ) capabilities in future contested battlespace.</li> <li>- Will continue to research, evaluate and develop an Open Systems Architecture to improve CDL enterprise interoperability and terminal design flexibility.</li> <li>- Will continue prototyping and advanced technology demonstrations in support of emerging communication backbone architecture, including high capacity backbone (HCB) development, across multi-domains.</li> <li>- Will continue requirements and design improvements for more robust BE-CDL support to smaller Group 1 UAV.</li> <li>- Will continue exploratory prototyping efforts and advanced technology demonstrations in support of emerging communication backbone architecture, including HCB development, across air, space and terrestrial layers, to include agile high capacity data transport, assured communications and multi-mode access network.</li> <li>- Will continue research and evaluate developing Artificial Intelligence (AI) technologies to support faster correlation and fusion of ISR and CDL network management processes.</li> <li>- Will continue to research and evaluate developing technologies to minimize the National Security Agency (NSA) required certification requirements for terminals while standardizing Communications Security (COMSEC) and Transmission Security (TRANSEC) implementation.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 funding increases compared to FY2024 as a result of FY2024 funding being reduced to account for under-execution in prior years. This project was restructured and prior execution challenges resolved. Efforts to incorporate multi-access networking and waveform protection capabilities to the waveform will reach the integration phase, requiring additional work. Initial assessment of adding a satellite capability to the family of waveforms will begin.</p>			
<p><b>Title:</b> Common Data Link (CDL) Specification Development, Validation, Test and Maintenance</p> <p><b>Description:</b> Systems engineering lifecycle for CDL and NATO STANAG 7085 specification development: requirement decomposition, specification development (modeling, maturation, documentation), specification validation (and associated component prototyping), testing, configuration management, and process maintenance.</p> <p><b>FY 2024 Plans:</b></p>	15.298	8.300	10.998

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

- Continue development of vendor and government owner reference implementation of the new LPI/LPD/AJ waveform to perform future test and validation to ensure the CDL specification is accurate and can be built by multiple vendors in the future, therefore keeping the market space open.
- Continue evaluation, analysis and study of network management devices, network and waveform configuration tool development; transition improved technologies into CDL Specification baseline that increases data sharing across Service-specific networks.
- Continue development and advancement of dynamical control algorithms to enable terminals to more efficiently use CDL spectrum. This work is also to validate the CDL Common Control Interface.
- Continue to work with CDL industry partners and DoD Services and Agencies to document, validate, and test common terminal control interfaces through use of commercially recognized standards.
- Continue configuration control of the CDL architecture, standards, specifications and reference artifacts to support open interoperability and open competition.
- Continue development of CDL test equipment capable of compliance testing to the latest, validated version of CDL specifications.

**FY 2025 Plans:**

- Will continue development of vendor and government owner reference implementation of the new LPI/LPD/AJ waveform to perform future test and validation to ensure the CDL specification is accurate and can be built by multiple vendors in the future, therefore keeping the market space open.
- Will continue evaluation, analysis and study of network management devices, network and waveform configuration tool development; transition improved technologies into CDL Specification baseline that increases data sharing across Service-specific networks.
- Will continue development and advancement of dynamical control algorithms to enable terminals to more efficiently use CDL spectrum. This work is also to validate the CDL Common Control Interface.
- Will continue to work with CDL industry partners and DoD Services and Agencies to document, validate, and test common terminal control interfaces through use of commercially recognized standards.
- Will continue configuration control of the CDL architecture, standards, specifications and reference artifacts to support open interoperability and open competition.
- Will continue development of CDL test equipment capable of compliance testing to the latest, validated version of CDL specifications.

**FY 2024 to FY 2025 Increase/Decrease Statement:**

FY2025 funding increases compared to FY2024 as a result of FY2024 funding being reduced to account for under-execution in prior years. This project was restructured and prior execution challenges resolved. JITC is planned to begin integration of

FY 2023	FY 2024	FY 2025

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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a modernized test tool into the testing process. The specification will also begin shifting to a digital format using model based systems engineering tools, requiring additional effort.			
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<b>Title:</b> Common Data Link (CDL) Cryptographic Modernization	8.100	5.100	6.766
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**Description:** Phased development effort to modernize CDL Communications Security (COMSEC) and Transmission Security (TRANSEC) devices and standards to maximize performance and reduce Size Weight and Power (SWaP) requirements while supporting interoperability, commonality, modularity, portability, remote management, multi-level security and release to Allied and Coalition partners.

**FY 2024 Plans:**

- Continue to research and evaluate developing technologies to minimize the National Security Agency (NSA) required certification requirements for terminals while standardizing Communications Security (COMSEC) implementation.
- Continue incorporating data Transmission Security (TRANSEC) support, data handling capabilities, and new cryptographic algorithms into all cryptographic core form factors (i.e., Nano, Mini and Mega).
- Continue to upgrade Nano and Mini crypto cores with customer requested Engineering Change Proposals (ECP) and complete Security Validation Testing (SVT) and subsequent National Security Agency (NSA) Cyber Security Certification.
- Continue to ensure CDL family of waveforms meet developing Transmission Security (TRANSEC) requirements as outlined by the Office of Secretary of Defense Chief Information Officer (DoD CIO).
- Complete development, prototyping, integration testing and Cyber Security Certification of multi-channel, gigabit data rate (Mega) cryptographic cores and move into full rate production and delivery to ISR platforms.
- Continue development, prototyping, and First Implementer integration and testing on a Type 1 cryptographic solution (Pico) for Group 1 Unmanned Aerial Vehicles (UAVs) that provides algorithmic interoperability, using CCM cryptography, for Full Motion Video (FMV) datalinks with existing manned and unmanned ISR platforms and ground stations.
- Continue development and design of common End Cryptographic Units (ECUs) for use with medium- and large-sized ISR terminals.
- Continue development of a reference ECU using the Mega CCM crypto core for hardware/software and interface documentation validation.
- Continue the advancement of standardized CCM interface specifications for modularity to ease future systems upgrades, facilitate competitive terminal procurements, promote innovation, and maintain backward compatibility with existing Intelligence, Surveillance and Reconnaissance (ISR) systems.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

- Continue development, advancement and instantiation of CCM algorithms to support FIVE EYE (FVEY), North Atlantic Treaty Organization (NATO), and Coalition operations for secure encrypted and interoperable ISR data exchange among allied and partner nations.
- Continue participating in FVEY, NATO and Coalition forums, testing venues and exercises (including live-fly) to ensure secure encrypted and interoperable ISR data exchange among allied and partner nations.

**FY 2025 Plans:**

- Will continue to research and evaluate developing technologies to minimize the National Security Agency (NSA) required certification requirements for terminals while standardizing Communications Security (COMSEC) implementation.
- Will continue incorporating data Transmission Security (TRANSEC) support, data handling capabilities, and new cryptographic algorithms into all cryptographic core form factors (i.e., Nano, Mini and Mega).
- Will continue to upgrade Nano and Mini crypto cores with customer requested Engineering Change Proposals (ECP) and complete Security Validation Testing (SVT) and subsequent National Security Agency (NSA) Cyber Security Certification.
- Will continue to ensure CDL family of waveforms meet developing Transmission Security (TRANSEC) requirements as outlined by the Office of Secretary of Defense Chief Information Officer (DoD CIO).
- Will complete development, prototyping, integration testing and Cyber Security Certification of multi-channel, gigabit data rate (Mega) cryptographic cores and move into full rate production and delivery to ISR platforms.
- Will continue development, prototyping, and First Implementer integration and testing on a Type 1 cryptographic solution (Pico) for Group 1 Unmanned Aerial Vehicles (UAVs) that provides algorithmic interoperability, using CCM cryptography, for Full Motion Video (FMV) datalinks with existing manned and unmanned ISR platforms and ground stations.
- Will continue development and design of common End Cryptographic Units (ECUs) for use with medium- and large-sized ISR terminals.
- Will continue development of a reference ECU using the Mega CCM crypto core for hardware/software and interface documentation validation.
- Will continue the advancement of standardized CCM interface specifications for modularity to ease future systems upgrades, facilitate competitive terminal procurements, promote innovation, and maintain backward compatibility with existing Intelligence, Surveillance and Reconnaissance (ISR) systems.
- Will continue development, advancement and instantiation of CCM algorithms to support FIVE EYE (FVEY), North Atlantic Treaty Organization (NATO), and Coalition operations for secure encrypted and interoperable ISR data exchange among allied and partner nations.

FY 2023	FY 2024	FY 2025

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>- Will continue participating in FVEY, NATO and Coalition forums, testing venues and exercises (including live-fly) to ensure secure encrypted and interoperable ISR data exchange among allied and partner nations.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b>  FY2025 funding increases compared to FY2024 as a result of FY2024 funding being reduced to account for under-execution in prior years. This project was restructured and prior execution challenges resolved. The project will increase effort to resolve existing delays in the NSA certification process that are delaying fielding of new capability.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	37.460	25.157	33.349

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

The Air Force serves as the DoD Common Data Link Executive Agent, with support from each Service's designated CDL lead and AFLCMC/HNA (Airborne Network Division). The CDL EA develops interoperable ISR data links mandated for use by DoD CIO policy. Once CDL technology development matures and a specification is published, services are responsible for CDL compliant platform and terminal procurement; National Security Agency (NSA) and Joint Interoperability Test Command (JITC) ensure compliance certifications; integration; and installation. Acquisition strategy varies by Service and contract. Whenever possible, contracts are awarded under full and open competition.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>	<b>Project (Number/Name)</b> 641334 / <i>Common Data Link (CDL)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cryptographic Modernization	MIPR	NSA : Ft Meade, MD	-	8.350	Nov 2022	5.000	Nov 2023	8.000	Nov 2024	-		8.000	Continuing	Continuing	-
CDL Network Modernization	MIPR	Air Force and Navy : Various	-	4.216	Feb 2023	2.400	Nov 2023	2.000	Nov 2024	-		2.000	Continuing	Continuing	-
A2AD Waveform Advancement	C/CPAF	Army : Various	-	2.500	Mar 2023	1.950	Dec 2023	1.258	Dec 2024	-		1.258	Continuing	Continuing	-
CDL Cognitive Radio Networking Element (CRNE)	C/Various	Navy : Various	-	1.550	Dec 2022	0.757	Dec 2023	1.250	Dec 2024	-		1.250	Continuing	Continuing	-
CDL Model-Based Systems Engineering	C/CPAF	Air Force : Various	-	-		0.800	Dec 2023	0.900	Dec 2024	-		0.900	Continuing	Continuing	-
Flexible Ku-Band Adaptive Coding and Group 1/2 UAV CDL and Cryptographic SWaP	C/CPAF	Marine Corps : Various	-	1.100	Mar 2023	0.500	Nov 2023	1.400	Nov 2024	-		1.400	Continuing	Continuing	-
Pseudorandom Noise (PM) Code Generation	C/CPAF	Air Force : Various	-	1.600	Nov 2022	0.900	Dec 2023	1.000	Dec 2024	-		1.000	Continuing	Continuing	-
Open Systems Architecture Framework	C/CPAF	Navy : Various	-	0.500	Mar 2023	0.500	Dec 2023	1.250	Dec 2024	-		1.250	Continuing	Continuing	-
Antenna Array Modernization	C/CPAF	Various : Various	-	1.500	Dec 2022	-		-		-		-	0.000	1.500	-
<b>Subtotal</b>			-	21.316		12.807		17.058		-		17.058	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Service Tech Support & Spec Development	MIPR	Various : Various	-	3.225	Dec 2022	3.500	Dec 2023	4.000	Dec 2024	-		4.000	Continuing	Continuing	-
NATO STANAG 7085 Support	MIPR	Air Force : Various	-	0.500	Apr 2023	0.350	Nov 2023	0.350	Nov 2024	-		0.350	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>	<b>Project (Number/Name)</b> 641334 / <i>Common Data Link (CDL)</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Fielded Terminals Database	C/CPFF	Booz Allen : McLean, VA	-	0.500	Mar 2023	0.400	Mar 2024	0.400	Mar 2025	-		0.400	Continuing	Continuing	-
<b>Subtotal</b>			-	4.225		4.250		4.750		-		4.750	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Interoperability Test Command Support	Various	Not specified. : TBD	-	0.800	Jun 2023	0.800	Mar 2024	0.800	Mar 2025	-		0.800	Continuing	Continuing	-
CDL Exercise Support	MIPR	Various : Various	-	0.500	Jan 2023	-		2.000	Dec 2024	-		2.000	Continuing	Continuing	-
CDL Mode 303/304 Security Validation	C/CPAF	Various : Various	-	1.200	Feb 2023	-		-		-		-	0.000	1.200	-
Compliance Test Tool	C/CPAF	Various : Various	-	1.000	Dec 2022	-		-		-		-	Continuing	Continuing	-
Cyber Security Initiative	C/CPAF	Navy : San Diego, CA	-	0.650	Dec 2022	-		-		-		-	0.000	0.650	-
<b>Subtotal</b>			-	4.150		0.800		2.800		-		2.800	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MITRE Engineering Direct Mission Support (FFRDC)	SS/CPFF	MITRE Corp. : Bedford, MA	-	5.300	Oct 2022	5.000	Oct 2023	5.800	Oct 2024	-		5.800	Continuing	Continuing	-
PMO Support - AFLCMC (HNAG)	C/CPFF	Various : Various, MA	-	2.469	Apr 2023	2.300	Apr 2024	2.941	Apr 2025	-		2.941	Continuing	Continuing	-
<b>Subtotal</b>			-	7.769		7.300		8.741		-		8.741	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>	<b>Project (Number/Name)</b> 641334 / <i>Common Data Link (CDL)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Common Data Link</b>																												
CDL Technology Advancement																												
- CDL Protective Waveform (LPD/AJ) Advancement																												
- Networking (Multi-Access) Advancement																												
- Antenna Modernization (Networking and LPD/AJ)																												
- BE CDL to Group 1 UAV																												
CDL Specification Development, Validation, Test and Maintenance																												
CDL Cryptographic Modernization																												
- US/Coalition Multi-algorithm Crypto Core Modules (Generation 2/3)																												
- US Multi-algorithm Crypto Core Modules (Generation 2/3)																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>	<b>Project (Number/Name)</b> 641334 / <i>Common Data Link (CDL)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Common Data Link</i></b>				
CDL Technology Advancement	1	2023	4	2029
- CDL Protective Waveform (LPD/AJ) Advancement	1	2023	4	2029
- Networking (Multi-Access) Advancement	1	2023	4	2029
- Antenna Modernization (Networking and LPD/AJ)	1	2023	4	2023
- BE CDL to Group 1 UAV	1	2023	3	2029
CDL Specification Development, Validation, Test and Maintenance	1	2023	4	2029
CDL Cryptographic Modernization	1	2023	4	2029
- US/Coalition Multi-algorithm Crypto Core Modules (Generation 2/3)	1	2023	4	2029
- US Multi-algorithm Crypto Core Modules (Generation 2/3)	1	2023	2	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305601F / <i>Mission Partner Environments</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	16.741	17.727	22.028	0.000	22.028	17.187	17.523	18.135	18.494	Continuing	Continuing
643783: <i>CENTRIXs Networks</i>	-	16.741	17.727	22.028	0.000	22.028	17.187	17.523	18.135	18.494	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Mission Partner Environment (MPE) enables secure sharing of operational information for collaboration between and among the U.S. and mission partners to include federal, state, local, and tribal agencies, allies, coalition members, host nations, and other nations, United States (US) and international Non-Governmental Organizations, multinational treaty organizations, and private sector organizations. The MPE program enables the United States (US) Department of Defense (DoD) to execute its assigned missions with mission partners across all ranges and phases of military operations to enable combined command and control (C2) of coalition forces while promoting effective exchange of C2 and intelligence information to enable effective use of the US and partner nation military power. MPE improves survivability and lethality of US Forces by incorporating coalition partners and allies ability to share information in a secret and below releasable environment.

DoD Directive 5101.22E, effective August 5, 2020, designated the Secretary of the Air Force as Executive Agent (EA) for the DoD MPE. The EA, through the Mission Partner Capabilities Office provides DoD wide enterprise-level development, integration, systems engineering, architecture, and synchronized delivery of mission capabilities to include DoD-wide enterprise services that support joint and multinational warfighting functional information sharing. Additionally, the EA executes enterprise-level MPE Planning Programming Budgeting and Execution (PPBE) activities to coordinate the development of MPE budget requirements and provide recommendations to OSD Principle Staff Assistants for PPBE guidance and to the DoD Component heads for performance guidance. The EA also documents the DoD MPE to provide a comprehensive understanding that informs future technical solutions. The FY2025 funding continues the development, integration, and testing of an enterprise architectural engineering solution in alignment with the federated mission networking framework to combine multiple coalition information sharing capabilities into a single MPE, to include modifications necessary to absorb legacy systems capabilities and capacities. In addition, this funding further supports Coalition Interoperability Assurance and Validation (CIAV) technical, analytical, and engineering support to resolve C2 interoperability challenges and evaluate existing and emerging cyber capabilities in support of the MPE ecosystem.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In PY 0.00M was expended for civilian pay expenses in this program element, and in CY 0.00M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 Program Element (Number/Name)</b> PE 0305601F I Mission Partner Environments
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	17.378	17.727	16.757	0.000	16.757
Current President's Budget	16.741	17.727	22.028	0.000	22.028
Total Adjustments	-0.637	0.000	5.271	0.000	5.271
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.637	0.000			
• Other Adjustments	0.000	0.000	5.271	0.000	5.271

**Change Summary Explanation**

FY2025 changes due to internal realignment.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Mission Partner Environment	16.741	17.727	22.028
<b>Description:</b> Mission Partner Environment (MPE) enables secure sharing of operational information for collaboration between and among the United States (US) and mission partners to include federal, state, local, and tribal agencies, allies, coalition members, host nations, and other nations, US and international Non-Governmental Organizations, multinational treaty organizations, and private sector organizations.			
<b>FY 2024 Plans:</b> Develop, integrate, and test an enterprise architectural engineering solution in alignment with the federated mission networking framework to combine multiple coalition information sharing capabilities into a single Mission Partner Environment, to include modifications necessary to absorb legacy systems capabilities and capacities.			
<b>FY 2025 Plans:</b> Continue development, integration, and testing of an enterprise architectural engineering solution in alignment with the federated mission networking framework to combine multiple coalition information sharing capabilities into a single Mission Partner Environment, to include modifications necessary to absorb legacy systems capabilities and capacities.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to Combatant Command (US DoD) changing requirements			
<b>Accomplishments/Planned Programs Subtotals</b>			
	16.741	17.727	22.028

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305601F / <i>Mission Partner Environments</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• O&M BA 01 PE 0305601F: <i>Mission Partner Environment</i>	148.402	211.769	188.066	-	188.066	216.194	218.844	190.998	194.231	Continuing	Continuing
• OPAF 03 834010: <i>General Information Technology</i>	14.887	10.535	20.075	-	20.075	2.089	2.162	2.208	2.252	Continuing	Continuing

**Remarks**

N/A

**E. Acquisition Strategy**

Performance-based contracts are primarily used for this support. MPE maximizes the use of competitive awards and uses various contract types, employs large and small contractors, and is focused to achieve agency socio-economic goals and incorporate DoD acquisition reform initiatives.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305601F / <i>Mission Partner Environmen</i> <i>ts</i>	<b>Project (Number/Name)</b> 643783 / <i>CENTRIXs Networks</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Cross Domain Solution Ops Capabiliites	C/FFP	General Dynamics Msn Sys : Fairfax, VA	-	16.741	Mar 2023	17.727	Feb 2024	22.028	Feb 2025	-		22.028	Continuing	Continuing	-
<b>Subtotal</b>			-	16.741		17.727		22.028		-		22.028	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	16.741		17.727		22.028		-		22.028	Continuing	Continuing	N/A

**Remarks**  
N/A

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305601F / <i>Mission Partner Environmen</i> <i>ts</i>	<b>Project (Number/Name)</b> 643783 / <i>CENTRIXs Networks</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

*Development, testing of capabilities, and integration of capacities into mission capabilities with continuity of operations for enterprise services*

Mission Partner Environment

*Development, integration & testing of legacy systems into a combined coalition sharing capability that encompasses a single environment with modified legacy systems capabilities*

Mission Partner Environment

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0305601F / <i>Mission Partner Environmen</i> <i>ts</i>	<b>Project (Number/Name)</b> 643783 / <i>CENTRIXs Networks</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Development, testing of capabilities, and integration of capacities into mission capabilities with continuity of operations for enterprise services</i>				
Mission Partner Environment	1	2023	4	2029
<i>Development, integration &amp; testing of legacy systems into a combined coalition sharing capability that encompasses a single environment with modified legacy systems capabilities</i>				
Mission Partner Environment	1	2023	4	2029

**Note**  
N/A

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Support</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	272.583	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	272.583
646008: <i>US Cyber Command Technology Development</i>	-	272.583	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	272.583
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**  
In FY 2024, PE 0306250F, (Cyber Operations Technology Development), Project 646008, (US Cyber Command Technology Development) efforts were transferred to PE 0306250JCY, (Cyber Operations Technology Support), Project CY06, (Cyber Weapons/Tools), in order to satisfy SECDEF requirements to transfer combatant command support agent responsibilities from the Air Force to the Army.

**A. Mission Description and Budget Item Justification**  
US Cyber Command's (USCYBERCOM) mission is to deter or defeat strategic threats to US interests and infrastructure, provide mission assurance for the operations and defense of the Department of Defense information environment, and support the achievement of Joint Force Commander objectives.

USCYBERCOM in conjunction with the Services and National Agencies will develop and expand infrastructure architectures and capabilities/tools to support Cyber Mission Forces (CMF). Focus is on four broad program areas: Joint Common Services, Joint Access Platforms, Joint Weapons, and Joint Sensors.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.000M was expended for civilian pay expenses in this program element, and in FY24 \$0.000M is forecasted for civilian pay expenses in this program element.

The specific details and aspects of these cyber activities are classified and will be provided on a need-to-know basis.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Support</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	272.583	0.000	0.000	0.000	0.000
Current President's Budget	272.583	0.000	0.000	0.000	0.000
Total Adjustments	0.000	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 646008: *US Cyber Command Technology Development*  
 Congressional Add: *Cyber Mission Force Operational Support*  
 Congressional Add: *Joint Cyberspace Warfighting Architecture*  
 Congressional Add: *Cyber Command Hunt Forward*

	<b>FY 2023</b>	<b>FY 2024</b>
	16.000	-
	10.900	0.000
	15.000	0.000
Congressional Add Subtotals for Project: 646008	41.900	0.000
Congressional Add Totals for all Projects	41.900	0.000

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> Joint Common Services	60.550	0.000	0.000
<b>Description:</b> Provides mission/business enabling IT infrastructures, business IT capabilities and life-cycle sustainment; supports internal mission/business operations for USCYBERCOM; and enables JCWA efforts across USCYBERCOM.			
The origin, details, and specific aspects of these efforts are classified and will be provided on a need-to-know basis.			
<b>FY 2024 Plans:</b> N/A			
<b>FY 2025 Plans:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Support</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
N/A				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY24 funds transferred to the Army in accordance with SECDEF requirements.				
<b>Title:</b> Joint Access Platforms		48.328	0.000	0.000
<b>Description:</b> Delivers infrastructures and systems that enable access to networks through traditional and non-traditional means.  The origin, details, and specific aspects of these efforts are classified and will be provided on a need-to-know basis.				
<b>FY 2024 Plans:</b> N/A				
<b>FY 2025 Plans:</b> N/A				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY24 funds transferred to the Army in accordance with SECDEF requirements.				
<b>Title:</b> Joint Weapons		115.225	0.000	0.000
<b>Description:</b> Capabilities that are developed, tested, stored, and employed for cyberspace operations.  The origin, details, and specific aspects of these efforts are classified and will be provided on a need-to-know basis.				
<b>FY 2024 Plans:</b> N/A				
<b>FY 2025 Plans:</b> N/A				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY24 funds transferred to the Army in accordance with SECDEF requirements.				
<b>Title:</b> Joint Sensors		6.580	0.000	0.000
<b>Description:</b> Development of capabilities to collect, process, analyze, and share data elements both on- and off-DoDIN environments. Includes both dynamically emplaced capabilities and static, enduring systems and applications.				

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 Program Element (Number/Name)</b> PE 0306250F I Cyber Operations Technology Support
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
The origin, details and specific aspects of these efforts are classified and will be provided on a need-to-know basis.			
<b>FY 2024 Plans:</b> N/A			
<b>FY 2025 Plans:</b> N/A			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY24 funds transferred to the Army in accordance with SECDEF requirements.			
<b>Accomplishments/Planned Programs Subtotals</b>	230.683	0.000	0.000

	FY 2023	FY 2024
<b>Congressional Add:</b> Cyber Mission Force Operational Support	16.000	-
<b>FY 2023 Accomplishments:</b> - Improves survivability, sustainability, and adaptability of alias persona		
<b>Congressional Add:</b> Joint Cyberspace Warfighting Architecture	10.900	0.000
<b>FY 2023 Accomplishments:</b> - Provides additional full time equivalent support at the JCWA Integration Office for systems engineering, enterprise architecture, and agile DevSecOps Management - Provides FTE support for JCWA program integration and management - Accelerates integration of advanced capabilities into JCWA		
<b>FY 2024 Plans:</b> N/A		
<b>Congressional Add:</b> Cyber Command Hunt Forward	15.000	0.000
<b>FY 2023 Accomplishments:</b> - Develops and delivers additional hardware and software kits for Hunt Forward		
<b>FY 2024 Plans:</b> N/A		
<b>Congressional Adds Subtotals</b>	41.900	0.000

<b>D. Other Program Funding Summary (\$ in Millions)</b>										<b>Cost To</b>	
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2025</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Complete</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>						
• OPAF 03 834320: C3 Countermeasures	3.808	0.000	0.000	-	0.000	0.000	0.025	0.026	0.027	Continuing	Continuing

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Support</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**

**E. Acquisition Strategy**

Facilitate the delivery of technology capabilities to the Cyber Mission Forces, by applying innovative solutions for existing and emerging technologies. Contracts are awarded under full and open competition whenever possible. Variations of both Fixed Price (FP) and Cost Plus (CP) contracting vehicles and the use of Other Transactional Authority (OTA) will be implemented leveraging USCYBERCOM Acquisition authorities. USCYBERCOM will also rely on various Service Component, Combatant Command and National Security Agency contracting offices for procurement of cyber capabilities and contractor support.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technol ogy Support</i>	<b>Project (Number/Name)</b> 646008 / <i>US Cyber Command Technology Development</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Joint Common Services	Various	Multiple Agencies : Various	-	59.175	Apr 2023	-		-		-		-	0.000	59.175	59.175
Joint Access Platforms	Various	Multiple Agencies : Various	-	47.190	Apr 2023	-		-		-		-	0.000	47.190	47.190
Joint Tools	Various	Multiple Agencies : Various	-	112.863	Apr 2023	-		-		-		-	0.000	112.863	112.863
Joint Sensors	Various	Multiple Agencies : Various	-	6.437	Apr 2023	-		-		-		-	0.000	6.437	6.437
Congressional Add: Cyber Mission Force Operational Support	TBD	Multiple Agencies : Various	-	16.000	Apr 2023	-		-		-		-	0.000	16.000	16.000
Congressional Add: Cyber Command Hunt Forward	TBD	Multiple Agencies : Various	-	15.000	Apr 2023	-		-		-		-	0.000	15.000	15.000
Congressional Add: Joint Cyberspace Warfighting Architecture	TBD	Multiple Agencies : Various	-	10.900	Apr 2023	-		-		-		-	0.000	10.900	10.900
<b>Subtotal</b>			-	267.565		-		-		-		-	0.000	267.565	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA	Various	Various : Various	-	5.018	Apr 2023	-		-		-		-	0.000	5.018	5.018
<b>Subtotal</b>			-	5.018		-		-		-		-	0.000	5.018	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	272.583	-	-	-	-	0.000	272.583	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Support</i>	<b>Project (Number/Name)</b> 646008 / <i>US Cyber Command Technology Development</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Cyber Operations Technology Development</i></b>	
Scalable resilient infrastructure (Joint Common Services)	██████████
CYBERCOM access platform build out capacity (Joint Access Platforms)	██████████
Mission-based platform FOC (Joint Access Platforms)	██████████
DDoS for DODIN spiral development (Joint Access Platforms)	██████████
Cyber UCAP spiral development - 1 (Joint Weapons)	██████████
Exploitation framework spiral development (annual) - (Joint Weapons)	██████████
Foundational tool suites (spirals annual) (Joint Weapons)	██████████
Analytics development (Joint Sensors)	██████████
<b><i>Congressional Adds</i></b>	
Cyber Mission Force Operational Support	██████████
Cyber Command Hunt Forward	██████████
Joint Cyberspace Warfighting Architecture	██████████

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Support</i>	<b>Project (Number/Name)</b> 646008 / <i>US Cyber Command Technology Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Cyber Operations Technology Development</i></b>				
Scalable resilient infrastructure (Joint Common Services)	1	2023	4	2023
CYBERCOM access platform build out capacity (Joint Access Platforms)	1	2023	4	2023
Mission-based platform FOC (Joint Access Platforms)	1	2023	3	2023
DDoS for DODIN spiral development (Joint Access Platforms)	1	2023	4	2023
Cyber UCAP spiral development - 1 (Joint Weapons)	1	2023	2	2023
Exploitation framework spiral development (annual) - (Joint Weapons)	1	2023	4	2023
Foundational tool suites (spirals annual) (Joint Weapons)	1	2023	4	2023
Analytics development (Joint Sensors)	1	2023	4	2023
<b><i>Congressional Adds</i></b>				
Cyber Mission Force Operational Support	3	2023	3	2024
Cyber Command Hunt Forward	3	2023	3	2024
Joint Cyberspace Warfighting Architecture	3	2023	3	2024

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306415F / <i>Enabled Cyber Activities</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	16.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.728
646008: <i>US Cyber Command Technology Development</i>	-	16.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	16.728
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

In FY 2024, PE 0306415F, (Cyber Operations Technology Development), Project 646008, (US Cyber Command Technology Development) efforts were transferred to PE 0208059JCY, (CYBERCOM Activities), Project CY04, (CYBERCOM Activities), in order to satisfy SECDEF requirements to transfer combatant command support agent responsibilities from the Air Force to the Army.

**A. Mission Description and Budget Item Justification**

US Cyber Command's (USCYBERCOM) mission is to deter or defeat strategic threats to US interests and infrastructure, provide mission assurance for the operations and defense of the Department of Defense information environment, and support the achievement of joint force commander objectives.

USCYBERCOM develops or procures capabilities to enable Electronic Warfare and cyber-peculiar technologies for use by the Cyber Mission Forces (CMF).

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.000M was expended for civilian pay expenses in this program element, and in FY24 \$0.000M is forecasted for civilian pay expenses in this program element.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306415F / <i>Enabled Cyber Activities</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	16.728	0.000	0.000	0.000	0.000
Current President's Budget	16.728	0.000	0.000	0.000	0.000
Total Adjustments	0.000	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Cyber Technology Development	16.728	0.000	0.000
<b>Description:</b> Adapted Electronic Warfare (EW) technology to facilitate the development and delivery of EW and cyber-peculiar capabilities.  The origin, details and specific aspects of these efforts are classified.			
<b>FY 2024 Plans:</b> N/A			
<b>FY 2025 Plans:</b> N/A			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY24 funding transferred to the Army in accordance SECDEF requirements.			
<b>Accomplishments/Planned Programs Subtotals</b>	16.728	0.000	0.000

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306415F / <i>Enabled Cyber Activities</i>
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**E. Acquisition Strategy**

Facilitate the delivery of new Electronic Warfare (EW) cyber capability, by applying innovative solutions for existing and emerging technologies. Contracts are awarded under full and open competition whenever possible. Variations of both Fixed Price (FP) and Cost Plus (CP) contracting vehicles will be executed and managed by USCYBERCOM Acquisition authority, as well as various Service Component contracting offices, other Defense Agency contracting offices and the National Security Agency contracting offices.





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0306415F / <i>Enabled Cyber Activities</i>	<b>Project (Number/Name)</b> 646008 / <i>US Cyber Command Technology Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Electronic Warfare (EW) Capabilities</i></b>				
EW Capability Spiral (annual)	1	2023	4	2023
SATCOM Capability Spiral (annual)	1	2023	4	2023
Communications Capabiliy Spiral (annual)	1	2023	4	2023

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0708051F / <i>Rapid Sustainment Modernization (RSM)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	69.000	43.431	37.044	0.000	37.044	32.794	27.938	26.165	26.682	0.000	263.054
648051: <i>Rapid Sustainment Modernization Technologies</i>	-	69.000	43.431	37.044	0.000	37.044	32.794	27.938	26.165	26.682	0.000	263.054
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

The Rapid Sustainment Modernization program provides funding to develop, test and deploy new technologies for implementation across the sustainment enterprise, to improve readiness, and reduce sustainment costs.

RSO will achieve this by reaching across the sustainment enterprise to include the warfighter, depot maintenance, field maintenance, supply chain and program offices to identify enterprise needs. The RSO will then identify, assess, develop, validate and verify new technology projects that support these areas, all while reducing costs and increasing aircraft readiness.

RSO New Sustainment technologies such as Advanced Manufacturing (Additive Manufacturing/Coldspray), Artificial Intelligence/ Machine Learning (Conditioned Based Maintenance Plus (CBM+), RSM Technologies to include Data and Digital Engineering, Automation/Robotics, Augmented and Virtual Reality, and Rapid and Austere Environments are evaluated across the technology space in support of the Department of the Air Force (DAF) sustainment enterprise.

This is a new program element created based off the FY 2021 appropriation line item 56A. This requirement is not a new start as it was previously funded and executed with DAF Research, Development, Test and Evaluation (RDT&E) funding.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In PY 0M was expended for civilian pay expenses in this program element, and in CY 2.4M is forecasted for civilian pay expenses in this program element.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver RSO Innovative capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 4: Advanced Component Development & Prototypes (ACD&P)	<b>R-1 Program Element (Number/Name)</b> PE 0708051F I Rapid Sustainment Modernization (RSM)
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	69.000	43.431	26.976	0.000	26.976
Current President's Budget	69.000	43.431	37.044	0.000	37.044
Total Adjustments	0.000	0.000	10.068	0.000	10.068
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	10.068	0.000	10.068

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Title:</b> Rapid Sustainment Modernization-Advanced Manufacturing</p> <p><b>Description:</b> Advanced Repair and Qualification</p> <p><b>FY 2024 Plans:</b> Continue to assess new technologies/equipment and develop standardized processes to allow for deployment across the enterprise Continue to bring AM under a single umbrella program to focus technology growth via the RSM AM AGORA Marketplace: a centralized platform accessible via Cloud One to access Government AM capabilities, AM part requests/approvals, and approved AM hardware</p> <p><b>FY 2025 Plans:</b> Continue to assess new technologies/equipment and develop standardized processes to allow for deployment across the enterprise Continue to bring AM under a single umbrella program to focus technology growth via the RSM AM AGORA Marketplace: a centralized platform accessible via Cloud One to access Government AM capabilities, AM part requests/approvals, and approved AM hardware</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> AGORA development is complete in FY24 and moves into sustainment.</p>	69.000	36.231	18.849
<p><b>Title:</b> Rapid Sustainment Modernization-RSM Technologies</p> <p><b>Description:</b> RSM Technologies</p>	0.000	5.300	5.300

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0708051F / <i>Rapid Sustainment Modernization (RSM)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b><i>FY 2024 Plans:</i></b>                      Develop the LITE API Mgmt Platform to increase sortie generation at reduced cost by enhancing data flow between LogIT Systems.                      Expand advancement of RSM technology capabilities in the AF enterprise by scaling "best of breed" technology across the sustainment enterprise.                      Assess Intermittent Fault Detection (IFD) that supports efforts to address the No Fault Found issue by enabling the investigation of IFD technologies and the associated process by which to test, evaluate, identify best of breed, deploy, and sustain the assets.                      Assess Black Gold to accomplish testing and evaluation of the Black Gold compressor blade coating on turbine engines to enable certification and fleet integration of the coatings on aircraft engines for enhancement of fuel efficiency, improved erosion protection, and associated sustainment benefits.</p> <p><b><i>FY 2025 Plans:</i></b>                      Continue to develop the LITE API Mgmt Platform to increase sortie generation at reduced cost by enhancing data flow between LogIT Systems.                      Expand advancement of RSM technology capabilities in the AF enterprise by scaling "best of breed" technology across the sustainment enterprise.                      Assess Intermittent Fault Detection (IFD) that supports efforts to address the No Fault Found issue by enabling the investigation of IFD technologies and the associated process by which to test, evaluate, identify best of breed, deploy, and sustain the assets.                      Assess Black Gold to accomplish testing and evaluation of the Black Gold compressor blade coating on turbine engines to enable certification and fleet integration of the coatings on aircraft engines for enhancement of fuel efficiency, improved erosion protection, and associated sustainment benefits.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b>                      Approved RSIP projects are included in the PB</p>			
<p><b><i>Title:</i></b> Rapid Sustainment Modernization-AI/ML (CBM+)  <b><i>Description:</i></b> CBM+</p> <p><b><i>FY 2024 Plans:</i></b>                      Implementation, expansion, sustainment, and enhancement of CBM+ SBA processes and CBM+ tool-kit to improve reliability of weapon systems, minimize Logistics Analytics Data Environment (BLADE) to enhance the synthesis of data across the enterprise and enhance analysis/unscheduled repairs, synchronize maintenance actions, reduce mission aborts, decrease maintenance costs, and reduce cycle time through Enhanced Reliability Centered Maintenance (eRCM) and Sensor Based Algorithms (SBAs) CBM+ will use databases and information systems such as Basing and decision making information in the RSM CBM+ tool-kit (PANDA)</p>	0.000	1.900	12.895

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0708051F / <i>Rapid Sustainment Modernization (RSM)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Investment funding will be used for expansion of software enhancements in Panda and sensor based efforts such as aircraft (a/c) sensor 1553 (BUS) box decoders, sniffers, and SBA advancements.			
<b><i>FY 2025 Plans:</i></b> Implementation, expansion, and enhancement of CBM+ SBA processes and CBM+ tool-kit to improve reliability of weapon systems, minimize Logistics Analytics Data Environment (BLADE) to enhance the synthesis of data across the enterprise and enhance analysis/unscheduled repairs, synchronize maintenance actions, reduce mission aborts, decrease maintenance costs, and reduce cycle time through Enhanced Reliability Centered Maintenance (eRCM) and Sensor Based Algorithms (SBAs) CBM+ will use databases and information systems such as Basing and decision making information in the RSM CBM+ tool-kit (PANDA) Investment funding will be used for expansion of software enhancements in Panda and sensor based efforts such as aircraft (a/c) sensor 1553 (BUS) box decoders, sniffers, and SBA advancements.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Approved RSIP project to fund the capability to enable data transfer and communication across joint domain platforms via Modular Open Systems Approach (MOSA) architectures. This will provide common interfaces to transfer standardized digital data and file formats for Predictive Logistics across the Joint Force to improve sustainment mission command capabilities and inform lethality decisions.			
<b>Accomplishments/Planned Programs Subtotals</b>	69.000	43.431	37.044

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF 04 845010: <i>Base Procured Equipment</i>	0.000	45.820	59.960	-	59.960	21.710	22.520	23.450	-	0.000	173.460

**Remarks**

**E. Acquisition Strategy**  
RSO develops, tests and deploys new technologies for implementation across the Sustainment Enterprise to improve readiness and reduce sustainment costs. New technologies are the key to meeting the challenges of aging weapon systems, increasing readiness, decreasing diminishing manufacturing sources and parts obsolescence and will drive higher readiness and lower weapon system sustainment costs.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0708051F / <i>Rapid Sustainment Modernization (RSM)</i>	<b>Project (Number/Name)</b> 648051 / <i>Rapid Sustainment Modernization Technologies</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Manufacturing(Additive and Coldspray)	Various	Various : Wright Patterson, OH	-	69.000	Dec 2023	34.420	Dec 2023	17.501	Dec 2024	-		17.501	Continuing	Continuing	-
Conditioned Based Maintenance(CBM+)	Various	Various : Wright Patterson, OH	-	-		1.800	Dec 2023	5.300	Dec 2024	-		5.300	Continuing	Continuing	-
RSM Technologies	Various	Various : Wright Patterson, OH	-	-		5.039	Dec 2023	12.895	Dec 2024	-		12.895	Continuing	Continuing	-
<b>Subtotal</b>			-	69.000		41.259		35.696		-		35.696	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	Various	Various : Wright Patterson, OH	-	-		2.172	Dec 2023	1.348	Dec 2024	-		1.348	Continuing	Continuing	-
<b>Subtotal</b>			-	-		2.172		1.348		-		1.348	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
	<b>Project Cost Totals</b>		-	69.000	43.431	37.044	37.044	Continuing	Continuing

**Remarks**  
 FY20 - New areas of additive manufacturing and cold spray technologies, equipment and qualification processes that are maturing and providing benefit to the DAF  
 FY21 - Digital Engineering/Digital Twin: digital transformation of the existing Air Force fleet to increase operational readiness levels, decrease parts obsolescence and diminishing manufacturing sources required to get mission capable rates to acceptable levels

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date: March 2024</b>
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0708051F / <i>Rapid Sustainment Modernization (RSM)</i>	<b>Project (Number/Name)</b> 648051 / <i>Rapid Sustainment Modernization Technologies</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Advanced Manufacturing</b>	
AM/Cold Spray	[REDACTED]
<b>AI/ML</b>	
CBM+	[REDACTED]
<b>RSM Technologies</b>	
RSM Technologies	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0708051F / <i>Rapid Sustainment Modernization (RSM)</i>	<b>Project (Number/Name)</b> 648051 / <i>Rapid Sustainment Modernization Technologies</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Advanced Manufacturing</b>				
AM/Cold Spray	2	2024	4	2028
<b>AI/ML</b>				
CBM+	2	2024	4	2028
<b>RSM Technologies</b>				
RSM Technologies	2	2024	4	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808736F / <i>Special Victim Accountability and Investigation</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	3.006	0.000	3.006	2.004	2.004	2.004	2.004	0.000	11.022
648737: <i>Studies in Sexual Assault Prevention</i>	-	0.000	0.000	3.006	0.000	3.006	2.004	2.004	2.004	2.004	0.000	11.022
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023 0.0M was expended for civilian pay expenses in this program element, and in FY2024 0.0M is forecasted for civilian pay expenses in this program element.

Funds moved from PE 808737F to this PE (808736F) beginning in FY25. This is not a new start.

Following completion of a Presidentially-directed Independent Review Committee [IRC] on Sexual Assaults for the Department of Defense, the Secretary of Defense [SECDEF] directed the implementation of multiple IRC recommendations. The Integrated Prevention PE contained two programs in support of those recommendations; however, beginning in FY25, this new PE was activated to isolate just the The Air Force Office of Special Investigations [OSI], Records, Investigations and Operations Network [ORION] program.

Air Force Office of Special Investigations [OSI], Records, Investigations and Operations Network [ORION]:

The Department of the Air Force [DAF] Office of Special Investigations [OSI] is DAF's sole felony-level criminal investigative agency mandated to investigate criminal offenses, to include sexual offenses and interpersonal violence. IRC recommendations C2, C3, C4, 1.8, 2.6a, 3.1, and 3.3a, directed the DAF to increase its ability to collect, analyze, and integrate data related to sexual offenses and interpersonal violence to inform and guide prevention and response. The DAF will develop and deploy the OSI Investigations, Operations, and Records Network [ORION] information system as to satisfy SECDEF requirements.

In tandem with the context above, another key driver for development of ORION is the DAF's requirement to identify a central case management system solution to allow for more effective oversight of and more efficient execution of the DAF's criminal indexing process.

ORION will be a cloud-based, next-generation case management system used to document, manage, store, and report criminal investigative and counterintelligence information involving violations of the Uniform Code of Military Justice and the United States Code. ORION will serve as OSI's central mission application capable of ensuring sexual assaults, intimate partner violence, violent extremism, service-member deaths, and dozens of other crimes are properly investigated and recorded. ORION will be used by over 3,000 OSI personnel including nearly 2,000 federally-credentialed Special Agents at OSI's 300+ global operating locations.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808736F / <i>Special Victim Accountability and Investigation</i>
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ORION will enable the DAF to modernize criminal indexing processes both operationally and technologically. Operationally, ORION will reduce redundancy, streamline processes, encourage standardization, and decrease administrative burden. The DAF is exploring options to use ORION to replace other systems and enable data transfer to other stakeholders with the goal to increase integration and productivity and avoid duplicative data entry. ORION could also be leveraged to be placed on one or more Special Access Programs [SAP] networks to become a system of record for OSI investigative and security support to DAF SAP programs. Technologically, ORION leverages the affordability, scalability, security, and services provided by cloud computing. Additionally, ORION will be mobile-ready, enabling agents to securely access and document investigative data from mobile devices whenever and wherever needed, thereby increasing efficiency and reducing delays. Lastly, ORION will be built on a low-code/no-code enterprise platform which enables the rapid development, deployment, and sustainment of capability.

The DAF is considering options to leverage ORION and its enterprise low-code/no-code platform for other DAF case management and/or business process management requirements. Such a platform, operated and sustained at the enterprise level, has potential to yield cost savings, operational enhancements, and technical efficiencies as well as reduce DAF overhead. With ORION serving as the initial application, the case management platform could promote the expedited development, deployment, and sustainment of future case management systems at economies of scale.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	3.006	0.000	3.006
Total Adjustments	0.000	0.000	3.006	0.000	3.006
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	3.006	0.000	3.006

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> ORION Continuous Capability & Case Management Framework Development	0.000	0.000	3.006
<b>Description:</b> ORION will be developed, optimized, and enhanced through the completion of iterative software development cycles using an agile software development methodology. Development will focus on building functionality and capability for ORION. Development activities include licensing, system design and architecture, requirements analysis, product building, planning			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808736F / <i>Special Victim Accountability and Investigation</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>and testing, data migration as required, systems integration, and the establishment and incorporation of various cloud services. Additionally, development includes various services and program support activities for ORION and enabling a larger Air Force Case Management Platform.</p> <p><b>FY 2024 Plans:</b> N/A</p> <p><b>FY 2025 Plans:</b></p> <ul style="list-style-type: none"> <li>- Will continue iterative software development and integration of the ORION application</li> <li>- Will optimize, test and sustain ORION cloud implementations</li> <li>- Will establish, test, and complete new and existing ORION integrations with other OSI, Air Force, DoD, and criminal justice systems to increase data sharing and mission effectiveness.</li> <li>- Will continue to ensure robust ORION system security and support the Risk Management Framework [RMF] through continuous monitoring activities</li> <li>- Will continue to support 24/7 operations for global ORION user community through Help Desk operations, functional expertise, technical support, and other user needs</li> <li>- Will continue to operate, manage, and maintain ORION application and ORION cloud environment</li> <li>- Will continue deploy fixes to address new and existing software defects and user-identified problems</li> <li>- Will continue planning and development of classified components of ORION</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funds moved from PE 808737F to this PE (808736F) beginning in FY25</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	3.006

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

ORION will adopt an agile, phased approach to application development and deployment. ORION development will be a collaborative process to include a cadre of experienced Special Agents, functional experts, and software developers. In addition to managing OSI's law enforcement-related criminal investigations information, ORION will also manage counterintelligence investigations and operations. Ultimately, the classified and unclassified versions of ORION will share limited data through an automated, bi-directional, cross-domain solution to ensure users have ready access to both criminal and counterintelligence information. Once complete, ORION will fully subsume OSI's current management systems and serve as OSI's investigative system of record.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0808736F / <i>Special Victim Accountability and Investigation</i>

In tandem with ORION development, the DAF is considering options to leverage this program to enable a larger DAF Case Management Platform. This platform would provide DAF customers requiring similar case management capabilities with the ability to share and modify system components and workflows, establish best practices, benefit from economies of scale, share/reduce costs, implement uniformity across systems, and decrease time required to deliver capability to end-users. This platform would also lessen overall administrative burdens associated with Clinger-Cohen Act compliance, the Business Capability Acquisition Cycle (BCAC), and program management.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0808736F / <i>Special Victim Accountability and Investigation</i>	<b>Project (Number/Name)</b> 648737 / <i>Studies in Sexual Assault Prevention</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ORION: Application Development & Cloud Implementation	C/CPAF	HumanIT : Beavercreek, OH	-	-		-		1.750	Feb 2025	-		1.750	Continuing	Continuing	-
ORION: Cloud Hosting	MIPR	AFLCMC : Hanscom, MD	-	-		-		0.296	Dec 2024	-		0.296	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		2.046		-		2.046	Continuing	Continuing	N/A

**Remarks**  
ORION program consolidated cloud and application management services.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ORION: Cybersecurity	C/CPAF	TBD : TBD	-	-		-		0.195	Dec 2024	-		0.195	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.195		-		0.195	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ORION: Cloud & Application Management	C/CPAF	TBD : TBD	-	-		-		0.574	Oct 2024	-		0.574	Continuing	Continuing	-
ORION: Program Support	C/CPAF	TBD : TBD	-	-		-		0.191	Dec 2024	-		0.191	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.765		-		0.765	Continuing	Continuing	N/A

**Remarks**  
ORION program consolidated cloud and application management services.



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0808736F / <i>Special Victim Accountability and Investigation</i>	<b>Project (Number/Name)</b> 648737 / <i>Studies in Sexual Assault Prevention</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>ORION Capability Development Requirements</i></b>																												
Application & Cloud Management																												
Cybersecurity Implementation & Maintenance																												
Establish IL6 Cloud Environment																												
Initiate ORION-Classified Development																												
Further Development of ORION Capabilities																												
ORION Iterative Sustainment Activities																												
Field ORION Classified																												
Cross Domain Solution Development																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0808736F / <i>Special Victim Accountability and Investigation</i>	<b>Project (Number/Name)</b> 648737 / <i>Studies in Sexual Assault Prevention</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>ORION Capability Development Requirements</i></b>				
Application & Cloud Management	1	2025	4	2029
Cybersecurity Implementation & Maintenance	1	2025	4	2029
Establish IL6 Cloud Environment	1	2025	4	2025
Initiate ORION-Classified Development	1	2025	4	2026
Further Development of ORION Capabilities	1	2025	4	2029
ORION Iterative Sustainment Activities	1	2026	4	2029
Field ORION Classified	1	2025	2	2025
Cross Domain Solution Development	2	2025	4	2025

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	8.973	9.364	5.364	0.000	5.364	5.352	5.352	5.508	5.656	Continuing	Continuing
648737: <i>Sexual Assault Prvntion Study</i>	-	8.973	9.364	5.364	0.000	5.364	5.352	5.352	5.508	5.656	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023 \$0 was expended for civilian pay expenses in this program element, and in FY2024 \$0 is forecasted for civilian pay expenses in this program element.

Following completion of a Presidentially-directed Independent Review Committee [IRC] on Sexual Assaults for the Department of Defense, the Secretary of Defense [SECDEF] directed the implementation of multiple IRC recommendations. The Integrated Prevention PE contains two programs in support of those recommendations: The Air Force Office of Special Investigations [OSI], Records, Investigations and Operations Network [ORION] program and the Interpersonal Self-Directed Violence (ISDV) Prevention program.

Air Force Office of Special Investigations [OSI], Records, Investigations and Operations Network [ORION]:

The Department of the Air Force [DAF] Office of Special Investigations [OSI] is DAF's sole felony-level criminal investigative agency mandated to investigate criminal offenses, to include sexual offenses and interpersonal violence. IRC recommendations C2, C3, C4, 1.8, 2.6a, 3.1, and 3.3a, directed the DAF to increase its ability to collect, analyze, and integrate data related to sexual offenses and interpersonal violence to inform and guide prevention and response. The DAF will develop and deploy the OSI Investigations, Operations, and Records Network [ORION] information system as to satisfy SECDEF requirements.

In tandem with the context above, another key driver for development of ORION is the DAF's requirement to identify a central case management system solution to allow for more effective oversight of and more efficient execution of the DAF's criminal indexing process.

ORION will be a cloud-based, next-generation case management system used to document, manage, store, and report criminal investigative and counterintelligence information involving violations of the Uniform Code of Military Justice and the United States Code. ORION will serve as OSI's central mission application capable of ensuring sexual assaults, intimate partner violence, violent extremism, service-member deaths, and dozens of other crimes are properly investigated and recorded. ORION will be used by over 3,000 OSI personnel including nearly 2,000 federally-credentialed Special Agents at OSI's 300+ global operating locations.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force Date: March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>
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ORION will enable the DAF to modernize criminal indexing processes both operationally and technologically. Operationally, ORION will reduce redundancy, streamline processes, encourage standardization, and decrease administrative burden. The DAF is exploring options to use ORION to replace other systems and enable data transfer to other stakeholders with the goal to increase integration and productivity and avoid duplicative data entry. ORION could also be leveraged to be placed on one or more Special Access Programs [SAP] networks to become a system of record for OSI investigative and security support to DAF SAP programs. Technologically, ORION leverages the affordability, scalability, security, and services provided by cloud computing. Additionally, ORION will be mobile-ready, enabling agents to securely access and document investigative data from mobile devices whenever and wherever needed, thereby increasing efficiency and reducing delays. Lastly, ORION will be built on a low-code/no-code enterprise platform which enables the rapid development, deployment, and sustainment of capability.

The DAF is considering options to leverage ORION and its enterprise low-code/no-code platform for other DAF case management and/or business process management requirements. Such a platform, operated and sustained at the enterprise level, has potential to yield cost savings, operational enhancements, and technical efficiencies as well as reduce DAF overhead. With ORION serving as the initial application, the case management platform could promote the expedited development, deployment, and sustainment of future case management systems at economies of scale.

Air Force Integrated Resilience Office [A1Z], Interpersonal Self-Directed Violence Prevention:

The Department of the Air Force [DAF] Integrated Resilience Directorate [A1Z] is the Air Force's lead agency for the research, development, and analysis of ISDV prevention and resilience programming across The Force. The IRC recommended multiple initiatives to help the Services research, develop, and assess interpersonal and self-directed violence [ISDV] prevention strategies. ISDV encompasses sexual assault, domestic violence, suicide, and resilience. IRC recommendations 2.3, 2.4, 2.6, and 3.5 directed the DAF to implement prevention strategies at organizational and community levels through the modernization of prevention education, training, program evaluation, and improved processes for data collection and analysis. The DAF will execute the IRC's recommendations in support of initiatives to include, but not limited to:

- The Tech-based Machine Learning Initiative - A state-of-the-art DoD prevention research capability that utilizes machine learning algorithms to analyze qualitative data to identify trends that lead to ISDV.
- The Community Prevention Platform [CPP] - A web-based software system that will maintain Installation and Major Command community action plans and facilitate DAF Headquarters ability to track and assess plans.
- The Peer-Network Resilience Training Program [PRTP] - An initiative to analyze and modernize current resilience training processes to more effectively reflect today's generation of Service members.
- The Project Proficiency-based Sexual Assault Training [PSAT] - This initiative will similarly update and expand the current Air Force sexual assault training by implementing tailored-training based on subject knowledge as well as long-term training-competency tracking for Airmen/Guardians over their career cycle.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>
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- The Sexual Assault Prevention Response Virtual Reality [SAPR V]) - This initiative will further enhance training initiatives by implementing cutting-edge Virtual Reality capability to more effectively enable Airmen and Guardians to recognize and prevent sexual assault.

The DAF is committed to implementing the Commission's recommendations to more effectively identify behavioral and cultural contributors to ISDV, educate/train Airmen and Guardians to facilitate ISDV prevention, and transparently document and track Installation-level strategies to facilitate evaluation.

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	9.315	9.364	8.355	0.000	8.355
Current President's Budget	8.973	9.364	5.364	0.000	5.364
Total Adjustments	-0.342	0.000	-2.991	0.000	-2.991
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.342	0.000			
• Other Adjustments	0.000	0.000	-2.991	0.000	-2.991

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> ORION Continuous Capability & Case Management Framework Development	3.969	4.174	0.132	0.000	0.132
<b>Description:</b> ORION will be developed, optimized, and enhanced through the completion of iterative software development cycles using an agile software development methodology. Development will focus on building functionality and capability for ORION. Development activities include licensing, system design and architecture, requirements analysis, product building, planning and testing, data migration as required, systems integration, and the establishment and incorporation of various cloud services. Additionally, development includes various services and program support activities for ORION and enabling a larger Air Force Case Management Platform.					
<b>FY 2024 Plans:</b>					
- Continue iterative software development and integration of the ORION application					
- Optimize, test and sustain ORION cloud implementations					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<ul style="list-style-type: none"> <li>- Establish, test, and complete new and existing ORION integrations with other OSI, Air Force, DoD, and criminal justice systems to increase data sharing and mission effectiveness.</li> <li>- Continue to ensure robust ORION system security and support the Risk Management Framework [RMF] through continuous monitoring activities</li> <li>- Continue to support 24/7 operations for global ORION user community through Help Desk operations, functional expertise, technical support, and other user needs</li> <li>- Continue to operate, manage, and maintain ORION application and ORION cloud environment</li> <li>- Continue deploy fixes to address new and existing software defects and user-identified problems</li> <li>- Continue planning and development of classified components of ORION</li> </ul> <p><b>FY 2025 Base Plans:</b> N/A</p> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to transfer of baseline FY25 funds to new PE. This supports realignment of SAPR IRC Funding. Program also decreased from \$4M to \$3M, which is in line with the programmed ramp as ORION system transfers from development into sustainment.</p>					
<p><b>Title:</b> ISDVP Research &amp; Development</p> <p><b>Description:</b> The DAF will conduct numerous research and development initiatives to more effectively determine trends in ISDV events, precursors, and preventative factors. These initiatives include modernizing prevention education and training programs and evaluating their effectiveness; developing software solutions to streamline, modernize, and improve community-level prevention strategies; and leveraging machine learning to determine trends that engender ISDV activities. All initiatives address IRC recommendations and will be designed to improve the overall health and well-being of Total Force Airmen and Guardians.</p> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>- Identify software solutions and develop minimum viable capability to store and track community action plans</li> <li>- Conduct business process mapping initiatives to refine requirements and plan interface coordination</li> <li>- Integrate data push/pull mechanisms with software programs</li> <li>- Develop key markers of success for prevention program evaluation and modernization efforts</li> </ul>	5.004	5.190	5.232	0.000	5.232

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<ul style="list-style-type: none"> <li>- Evaluate existing ISDV prevention education/training programs and develop a prioritized modernization strategy</li> <li>- Develop, test, and deploy modernized ISDV prevention education/training programs leveraging advanced training techniques, such as virtual reality</li> <li>- Develop and pilot career-long evaluation plans to track effectiveness</li> <li>- Develop, test, and refine Machine Learning models for to conduct trend analysis on years of Airmen and Guardians' climate surveys and other feedback mechanisms</li> </ul> <p><b>FY 2025 Base Plans:</b></p> <ul style="list-style-type: none"> <li>- Will continue to leverage software solutions and develop minimum viable capability to store and track community action plans</li> <li>- Will conduct business process mapping initiatives to refine requirements and plan interface coordination</li> <li>- Will integrate data push/pull mechanisms with software programs</li> <li>- Will refine key markers of success for prevention program evaluation and modernization efforts</li> <li>- Will evaluate existing ISDV prevention education/training programs and develop a prioritized modernization strategy</li> <li>- Will develop, test, and deploy modernized ISDV prevention education/training programs leveraging advanced training techniques, such as virtual reality</li> <li>- Will develop and pilot career-long evaluation plans to track effectiveness</li> <li>- Will develop, test, and refine Machine Learning models for to conduct trend analysis on years of Airmen and Guardians' climate surveys and other feedback mechanisms</li> </ul> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to inflation changes between FY24 and FY25</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	8.973	9.364	5.364	0.000	5.364

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force Date: March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>
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**E. Acquisition Strategy**

ORION:

ORION will adopt an agile, phased approach to application development and deployment. ORION development will be a collaborative process to include a cadre of experienced Special Agents, functional experts, and software developers. In addition to managing OSI's law enforcement-related criminal investigations information, ORION will also manage counterintelligence investigations and operations. Ultimately, the classified and unclassified versions of ORION will share limited data through an automated, bi-directional, cross-domain solution to ensure users have ready access to both criminal and counterintelligence information. Once complete, ORION will fully subsume OSI's current management systems and serve as OSI's investigative system of record.

In tandem with ORION development, the DAF is considering options to leverage this program to enable a larger DAF Case Management Platform. This platform would provide DAF customers requiring similar case management capabilities with the ability to share and modify system components and workflows, establish best practices, benefit from economies of scale, share/reduce costs, implement uniformity across systems, and decrease time required to deliver capability to end-users. This platform would also lessen overall administrative burdens associated with Clinger-Cohen Act compliance, the Business Capability Acquisition Cycle (BCAC), and program management.

ISDV Prevention:

This effort explores numerous initiatives to ultimately prevent ISDV. The DAF will execute agile processes within all initiatives. Software solutions will develop and deploy minimum viable capability early and continue to refine based on prioritized need. Research and analysis initiatives will seek industry best practices to implement novel technological solutions to these tough problem sets.

Contract strategies will require multiple approaches with a focus on best value and rapid execution. Efforts may also leverage existing AFRL SBIRs and Air University collaborations with Subject Matter Experts (SMEs) and nationally recognized experts from Industry and Academia.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>	<b>Project (Number/Name)</b> 648737 / <i>Sexual Assault Prvntion Study</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ORION: Application Development & Cloud Implementation	C/CPAF	HumanIT : Beavercreek, OH	-	2.601	Feb 2023	3.195	Feb 2024	0.000	Feb 2025	-		0.000	Continuing	Continuing	-
ORION: Cloud Hosting	MIPR	AFLCMC : Hanscom, MA	-	0.385	Dec 2022	0.396	Dec 2023	0.000	Dec 2024	-		0.000	Continuing	Continuing	-
ISDVP: Application Development	C/FFP	TBD : TBD	-	0.624	Mar 2023	0.625	Mar 2024	0.638	Mar 2025	-		0.638	Continuing	Continuing	-
ISDVP: Edu/Training Modernization	C/FFP	TBD : TBD	-	0.304	Mar 2023	0.401	Mar 2024	0.402	Mar 2025	-		0.402	Continuing	Continuing	-
ISDVP: Trend Analysis	C/FFP	TBD : TBD	-	0.404	Mar 2023	0.500	Mar 2024	0.501	Mar 2025	-		0.501	Continuing	Continuing	-
ISDVP: Curriculum Development/ Implementation/Evaluation	C/FFP	TBD : TBD	-	2.993	Mar 2023	3.095	Mar 2024	3.823	Mar 2025	-		3.823	Continuing	Continuing	-
<b>Subtotal</b>			-	7.311		8.212		5.364		-		5.364	Continuing	Continuing	N/A

**Remarks**  
- ORION: ORION program consolidated cloud and application management services.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ORION: Cybersecurity	C/CPAF	TBD : TBD	-	0.205	Dec 2022	0.232	Dec 2023	0.000	Dec 2024	-		0.000	Continuing	Continuing	-
<b>Subtotal</b>			-	0.205		0.232		0.000		-		0.000	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ORION: Cloud & Application Management	C/CPAF	TBD : TBD	-	0.670	Dec 2022	0.689	Oct 2023	0.000	Oct 2024	-		0.000	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>	<b>Project (Number/Name)</b> 648737 / <i>Sexual Assault Prvntion Study</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ORION: Program Support	C/CPAF	TBD : TBD	-	0.225	Dec 2022	0.231	Dec 2023	0.000	Dec 2024	-		0.000	Continuing	Continuing	-
ISDVP: Application Management	C/CPAF	TBD : TBD	-	0.312	Mar 2023	-		-		-		-	Continuing	Continuing	-
ISDVP: Program Support	C/CPAF	TBD : TBD	-	0.250	Mar 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	1.457		0.920		0.000		-		0.000	Continuing	Continuing	N/A

**Remarks**  
- ORION: ORION program consolidated cloud and application management services.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	8.973	9.364	5.364	-	5.364	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>	<b>Project (Number/Name)</b> 648737 / <i>Sexual Assault Prvntion Study</i>

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>ORION Capability Development Requirements</b>																												
Application & Cloud Management																												
Cybersecurity Implementation & Maintenance																												
Establish IL6 Cloud Environment																												
Initiate ORION-Classified Development																												
Further Development of ORION Capabilities																												
Field ORION Classified																												
<b>ISDVP Research &amp; Development</b>																												
Pre-Acquisition activities																												
Community Action Plan System Development, Test, & Deployment																												
Education/Training Modernization Development, Test, & Implementation																												
Trend Analysis																												
Curriculum Development/Implementation, & Evaluation																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0808737F / <i>Integrated Primary Prevention</i>	<b>Project (Number/Name)</b> 648737 / <i>Sexual Assault Prvntion Study</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>ORION Capability Development Requirements</i></b>				
Application & Cloud Management	2	2023	4	2025
Cybersecurity Implementation & Maintenance	2	2023	4	2025
Establish IL6 Cloud Environment	2	2023	4	2025
Initiate ORION-Classified Development	2	2023	4	2025
Further Development of ORION Capabilities	2	2023	4	2025
Field ORION Classified	3	2024	2	2025
<b><i>ISDVP Research &amp; Development</i></b>				
Pre-Acquisition activities	1	2023	2	2023
Community Action Plan System Development, Test, & Deployment	2	2023	1	2025
Education/Training Modernization Development, Test, & Implementation	1	2023	4	2027
Trend Analysis	1	2023	4	2025
Curriculum Development/Implementation, & Evaluation	1	2023	4	2027

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901410F / <i>Contracting Information Technology System</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	13.630	28.294	28.995	0.000	28.995	30.084	30.264	27.073	27.608	Continuing	Continuing
643483: <i>CON-IT</i>	-	13.630	28.294	28.995	0.000	28.995	30.084	30.264	27.073	27.608	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Contracting Information Technology (CON-IT) system enables the Department of the Air Force (DAF) to accomplish its mission effectively and securely in today's rapidly changing and increasingly contested cyber domain. The Air and Space Forces require a single, 21st century contract management solution to enable DAF mission execution, from acquiring and sustaining weapon system platforms, to supporting contingency operations overseas. CON-IT supplies this single solution by consolidating and replacing numerous aging and increasingly unsupportable, legacy contract writing and management systems, while enabling the Air and Space Forces to procure vital capability faster and with increased data accuracy through built-in automation.

Specifically, CON-IT's functionality provides contract data sharing interoperability across all DAF contracting communities and external business partners such as Defense Contract Management Agency, Defense Finance and Accounting Service, and industry partners. In addition, CON-IT facilitates the execution of the DAF's \$200+ billion annual budget, ensuring global procurement operations are timely, auditable, and secure.

CON-IT enables the DAF to anticipate and respond to the changing pace and dynamic nature of processes, regulations, compliance and technologies across the contracting domain. It empowers the contracting community to comply with Financial Improvement Audit Readiness (FIAR). CON-IT supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D. CON-IT is the DAF's only contract writing system meeting Section 862 of FY13 NDAA requirements implementing DoD Procurement Data Standards (PDS). In addition, CON-IT implements Section 508 of the Rehabilitation Act of 1973 (as amended) to make Electronic and Information Technology (EIT) accessible to people with disabilities.

To modernize the DAF contracting infrastructure, requirements are divided into 2 objectives.

Objective 1: Develop the following 8 capabilities:

- Capability 1: Modernize contract writing for 3,800 operational/installation contracting users, sunseting the Standard Procurement System (SPS) system. (Completed in FY19; first and only service to comply with the original Office of the Secretary of Defense (OSD) SPS sunset mandate)
- Capability 2: Modernize contract writing capability for the contingency contracting community, sunseting O'Contrax system. (Completed in FY20)
- Capability 3: Modernize contract writing capability for 2,500 Weapon Systems contracting users, sunseting ConWrite, a 20+ year-old system containing contracts worth more than \$2 trillion for major weapon system programs such as B-21, KC-46, and more.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901410F / <i>Contracting Information Technology System</i>	
<p>- Capability 4: Deliver Business Intelligence (BI) capability to provide timely and reliable data for decision makers across the entire DAF. (Completed in FY23)</p> <p>- Capability 5: Modernize capability to meet the unique classified needs within all contracting communities. This capability is on the critical path to sunset ConWrite (Capability 3).</p> <p>- Capability 6: Modernize capability to meet the unique needs of the R&amp;D contracting community to execute grants and cooperative agreements. This capability is on the critical path to sunset ConWrite (Capability 3).</p> <p>- Capability 7: Add E-Filing capability to provide a single, authoritative source for electronic contract file storage with capability to search and review individual documents.</p> <p>- Capability 8: Modernize contract writing capability for 1,500 Logistics contracting community users to award weapon system sustainment product support/logistics requirements. Enables the DAF to sunset the Automated Contract Preparation System (ACPS), a 30+ years old legacy system.</p> <p>Thus far, CON-IT has successfully fielded three of the eight established capabilities, modernizing contract writing and management for both the operational and contingency contracting communities as well as improving Business Intelligence. Fielding these capabilities resulted in the replacement of two of four contract writing systems.</p> <p>Objective 2: Maintain Compliance. CON-IT has deployed to over 5,617 users across 276 procurement organizations worldwide as of 4QFY23. In FY23, CON-IT awarded 73,334 contract actions totaling \$28.4B, compared to 68,000 contract actions at \$20B in FY22. The DAF continuously addresses numerous technical debt backlog requirements to maintain system functionality and meet modern data standards. These initiatives also develop capability to maintain compliance with Federal and OSD mandates, coordinate DevSecOps, and improve infrastructure and system performance.</p> <p>This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2023 \$0.000M was expended for civilian pay expenses in this program element, and in FY 2024 \$0.000M is forecasted for civilian pay expenses in this program element.</p> <p>This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&amp;P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901410F / <i>Contracting Information Technology System</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	14.050	28.294	28.944	0.000	28.944
Current President's Budget	13.630	28.294	28.995	0.000	28.995
Total Adjustments	-0.420	0.000	0.051	0.000	0.051
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.420	0.000	0.051	0.000	0.051

**Change Summary Explanation**

No significant change to FY25 funding request.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> CON-IT System Development	13.630	28.294	28.995
<p><b>Description:</b> CON-IT development is accomplished using agile software development practices to build upon a Government-off-the-Shelf contract management system to replace four legacy contract writing systems and multiple support systems. Development efforts are phased into eight major capabilities according to the requirements of each contracting community. This enables phased transitions from the various legacy systems to CON-IT. Thus far, the DAF completed Capabilities 1, 2, and 4 and deployed CON-IT to the operational/installation and contingency contracting communities. Capabilities are fielded utilizing the Minimum Viable Product (MVP) concept for each user group. The MVP contains the minimum set of requirements users need to complete their mission. The deployed MVP is then continually enhanced and refined in future capability releases.</p> <p>Capability 4, BI, impacts all contracting communities. Consistent CLIN-level data collection increased BI capability resulting in a DAF Acquisition Excellence Award. The BI MVP was delivered in FY23, and future enhancements will be delivered as identified.</p> <p>Capabilities 3 and 5 are in work. In FY23 the DAF delivered CON-IT to 733 ConWrite limited deployment and 73 ACPS users via swivel chair integration, in which both new and legacy systems are used concurrently. This brought the total number of active users to 5,620. Additional users will be added as capabilities are developed, including Weapon System and Classified users in FY24.</p> <p><b>FY 2024 Plans:</b></p>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901410F / <i>Contracting Information Technology System</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

The DAF will deliver the MVP for Capability 3, continue to develop Capabilities 5, and 6, and plan development activities for Capability 7, e-filing. CON-IT does not contain an existing baseline to develop Capability 6, R&D. R&D business processes will be developed from scratch, implementing a new data standard that OSD is currently developing for use across all services.

Examples of specific requirements to be addressed in FY24 included:

- Provide complex capability enhancements to capture Undefined Contract Actions (UCAs)
- Provide capability to track funding from multiple purchase request on a single Contract Line Item, increasing fund traceability and allowing incremental contract funding
- Field a disconnected/classified CON-IT with limited live deployment to 1-2 sites
- Implement capability to validate Solicitation data elements via Procurement Data Standard (PDS) schema
- Begin to construct database backbone and business logic for grants and cooperative agreements
- Begin developing E-Filing capability to host and capture contract file documentation
- Complete work for Mechanization of Contract Administration Services system interface
- Continue to develop Business Intelligence functionality to enhance contract writing and reporting capability
- Develop business rules to improve data compliance by ensuring users comply with existing regulations and PDS
- Continue to leverage Agile methods and cadence to resolve existing/new defects and add enhancements in the production environment
- Develop system updates required to maintain compliance with Federal and OSD contract writing mandates. The regulations and laws surrounding contracting can change frequently, so Contract Writing Systems must remain adaptable.
- Continue planning development activities for all remaining capabilities

**FY 2025 Plans:**

The DAF will field MVP version of Capability 5 (Classified) continue to develop Capabilities 6 (R&D) and 7 (e-filing), and plan development activities for Capability 8 (Logistics).

Examples of specific requirements to be addressed in FY25 include:

- Will continue construction of database and business logic for grants and cooperative agreements
- Develop and field PDS 2.7 including Standard Line of Accounting
- Will implement capability to capture complex Packing and Marking instruction
- Will continue work to support Contract migration from legacy systems
- Finalize work for Capability 5, deploying MVP version to classified communities
- Finalize development work to prepare for fielding MVP version of E-filing Solution
- Will develop business rules to improve data compliance by ensuring users comply with existing regulations and PDS

	FY 2023	FY 2024	FY 2025

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901410F / <i>Contracting Information Technology System</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- Will continue to leverage Agile methods and cadence to resolve existing/new defects and add enhancements in the production environment</li> <li>- Will research, design, and build a secure and continuous process for capability development and delivery</li> <li>- Develop system updates required to maintain compliance with Federal and OSD contract writing mandates. The regulations and laws surrounding contracting can change frequently, so Contract Writing Systems must remain adaptable.</li> <li>- Will continue planning development activities for all remaining Capabilities.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY 2025 funding increased by 2.3% over the FY24 level. This reflects and accounts for the annual labor rate escalation factors inherent in the Program Management Office (PMO) Advisory and Administrative Support (A&amp;AS) contracts and the Inter-Agency Agreement with USDA for Enterprise Application Services (EAS).</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	13.630	28.294	28.995

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPAF 03 834010: <i>General Information Technology</i>	0.000	0.718	1.509	-	1.509	2.329	2.593	0.000	-	0.000	7.149

**Remarks**

**E. Acquisition Strategy**

Built upon the Defense Information Systems Agency's (DISA) Integrated Defense Enterprise Acquisition System (IDEAS) contract writing system, CON-IT is based on a Government-off-the-Shelf product running on a Commercial Off-the-Shelf platform. Through an interagency agreement, the DAF partnered with the United States Department of Agriculture's (USDA) Enterprise Application Services (EAS) team to develop, test, validate, deploy, and maintain CON-IT. The USDA Digital Infrastructure Services Center currently provides and maintains hosting for the development and production environments in USDA's Enterprise Data Centers. The program is actively working migration to cloud data hosting on the Air Force's CloudOne architecture, which will provide the Identity, Credential, and Access Management (ICAM) solution. In the future the Procurement Integrated Enterprise Environment (PIEE) platform will be accessed as the hosting environment as part of the Collaboration MOU. In accordance with DoDI 5000.75, the program management office (PMO) and the functional management office (FMO) are jointly accountable for the successful delivery of business process design through business system deployment and capability support.

CON-IT is developed using agile software development principles. Requirements are envisioned at a high level, then decomposed into small pieces of effort to allow for just-in-time development and maximum flexibility to meet emerging needs. A Minimum Viable Product (MVP) is developed and fielded to satisfy bare-minimum user requirements. As development continues, the DAF will deliver iterative releases to mature the MVP. This commonly-used practice in the commercial industry speeds time to market and allows for rapid reprioritization of requirements based on external influences (e.g., warfighter needs, cybersecurity threats).

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901410F / <i>Contracting Information Technology System</i>
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CON-IT implements the OSD Strategic Plan for Defense-Wide Procurement Capabilities to employ the Procurement Data Standard mandated by Section 862 of the FY13 NDAA.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0901410F / Contracting Information Technology System	<b>Project (Number/Name)</b> 643483 / CON-IT
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CON-IT: New Software Capability Development	MIPR	USDA : Various	-	5.934	Dec 2022	15.361	Dec 2023	15.624	Dec 2024	-		15.624	Continuing	Continuing	-
CON-IT: Architecture, SE/PM, and Compliance	MIPR	USDA : Various	-	1.944	Dec 2022	5.210	Dec 2023	5.280	Dec 2024	-		5.280	Continuing	Continuing	-
CON-IT: Platform DevSecOps	MIPR	USDA : Various	-	0.683	Dec 2022	1.006	Dec 2023	1.020	Dec 2024	-		1.020	Continuing	Continuing	-
CON-IT: Other Direct Costs	MIPR	USDA : Various	-	0.448	Dec 2022	0.891	Dec 2023	0.903	Dec 2024	-		0.903	Continuing	Continuing	-
<b>Subtotal</b>			-	9.009		22.468		22.827		-		22.827	Continuing	Continuing	N/A

**Remarks**  
 Interagency agreement with USDA (United States Department of Agriculture) Architecture, SE/PM, and Compliance: Enterprise, application and DevOps Architecture; Systems Engineering; Program Management; and Compliance Updates.  
 Other Direct Costs include procurement and support of software licenses for development tools and software developer travel.

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CON-IT: Program Support, Cost Estimating Support, Travel, Supplies, Equipment, Program Office Network	Various	PEO Business Sys (AFLCMC) : WPAFB, OH	-	4.621	Dec 2022	5.826	Dec 2023	6.168	Dec 2024	-		6.168	Continuing	Continuing	-
<b>Subtotal</b>			-	4.621		5.826		6.168		-		6.168	Continuing	Continuing	N/A

**Remarks**  
 A&AS: Advisory & Assistance Services  
 Multiple contract awards  
 AFPEO/Business & Enterprise Systems (AFLCMC/GB) - Wright-Patterson AFB, OH



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0901410F / <i>Contracting Information Technology System</i>	<b>Project (Number/Name)</b> 643483 / <i>CON-IT</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>CON-IT Capability Development Activities</b>	
Capability 3: Develop, Test, and Deploy Weapon System Capability	
Capability 5: Develop, Test, and Deploy Classified Capability	
Capability 6: Plan, Develop, Test, and Deploy R&D Capability	
Capability 7: Plan, Develop, Test, and Deploy E-Filing Capability	
Capability 8: Plan, Develop, Test, and Deploy Logistics Capability	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0901410F / <i>Contracting Information Technology System</i>	<b>Project (Number/Name)</b> 643483 / <i>CON-IT</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>CON-IT Capability Development Activities</b>				
Capability 3: Develop, Test, and Deploy Weapon System Capability	1	2023	4	2024
Capability 5: Develop, Test, and Deploy Classified Capability	1	2023	2	2025
Capability 6: Plan, Develop, Test, and Deploy R&D Capability	4	2023	2	2026
Capability 7: Plan, Develop, Test, and Deploy E-Filing Capability	1	2024	1	2026
Capability 8: Plan, Develop, Test, and Deploy Logistics Capability	3	2026	2	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>					<b>R-1 Program Element (Number/Name)</b>							
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					PE 1206415F / U.S. Space Command Research and Development Support							
COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	8.350	14.892	28.392	0.000	28.392	29.093	29.672	30.932	31.542	Continuing	Continuing
641234: <i>USSPACECOM Rapid Prototype Demonstration</i>	-	8.350	14.892	28.392	0.000	28.392	29.093	29.672	30.932	31.542	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

U.S. Space Command Research and Development laboratory program directly supports achieving the lines of effort described in the Defense Space Strategy and USSPACECOM Strategic Plan 2027: (1) Building a comprehensive military advantage in space; (2) integrating military space power into national, joint, and combined operations; (3) shaping the strategic environment; and (4) cooperation with allies, partners, industry, and other U.S. Government department and agencies by overcoming capability gaps that directly affect current and future space operations. This program accomplishes these tasks through five (5) lines of effort: (1) space-based effects studies and analysis to ensure mission readiness; (2) science and technology (S&T) and Research and Development (R&D) demonstrations and rapid operational prototyping to ensure space superiority; (3) performing space-based effects future shaping and campaign modeling via model-based systems engineering and analysis in the USSPACECOM J8 CAVE; (4) performing operational assessments to improve warfighting capabilities; and (5) building coalitions with allies, partners, and industry through operational systems and data integration.

NAVWAR includes defensive actions that ensures the integrity and availability of friendly use of positioning, navigation, and timing (PNT) information while offensively denying the same to an adversary. NAVWAR, the management of PNT information, requires a coordinated employment of space, cyberspace, and electromagnetic warfare (EW) capabilities, enabled by intelligence, surveillance, and reconnaissance (ISR) and electromagnetic spectrum (EMS) management. Funds are used to develop and integrate NAVWAR offensive and defensive capabilities and to create and maintain NAVWAR knowledge, and tactics, techniques and procedures (TTP) to ensure NAVWAR superiority across the DoD. IAW the most recent Unified Command Plan, USSPACECOM is responsible to plan, coordinate, integrate, synchronize and assess, and as directed, execute global offensive and defensive space operations in coordination with, or in support of other combatant commands (CCMD), Services, U.S. government agencies, allies and partners, and as directed, other entities. These operations can occur in the terrestrial or space domains, or through the EMS. Additional responsibilities include advocating for and providing space capabilities such as PNT information to CCMDs, allies, partners and other entities, as directed. NAVWAR operations, TTPs, and expertise is developed and supported throughout the DoD in large part by the USSPACECOM's Joint Navigation Warfare Center (JNWC). The JNWC leads the research, development, testing and assessment of alternative PNT and NAVWAR options IOT advocate across Services and the other CCMDs to achieve PNT overmatch. NAVWAR expertise is developed in part by JNWC-led PNT Operational Field Assessments (POFA) that assess Red and Blue PNT-related capabilities, limitation, and vulnerabilities. GYPSY POFAs are linked to Commander, USSPACECOM's Joint Exercise Program (JEP) and nested within the Chairman's Exercise Program (CEP) and CCMD's Tier 1 exercises [PACIFIC SENTRY, SPACE SENTRY and AUSTERE CHALLENGE are examples] and provide operationally realistic threat-representation, and PNT-contested environments for analytical assessment of air, ground, maritime, space and cyberspace mission capabilities. FORTUNE POFAs and PNT capability and vulnerability assessments are associated with Service exercises or mission events. PRISM POFAs encompass all other operations, actions, and activities (OAAs) and other assessments to include evaluation and rapid innovation and development of NAVWAR capabilities and/or solutions to establish and maintain PNT and NAVWAR superiority across the DoD. Assessments inform materiel and non-materiel solutions, service acquisition decisions, capability gaps, intelligence gaps, TTP development and implementation to mitigate effects on warfighter operations in the anticipated theater NAVWAR threat environments.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / <i>U.S. Space Command Research and Development Support</i>
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This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	8.350	14.892	12.698	0.000	12.698
Current President's Budget	8.350	14.892	28.392	0.000	28.392
Total Adjustments	0.000	0.000	15.694	0.000	15.694
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	15.694	0.000	15.694

**Change Summary Explanation**

Increase reflects transfer of Program 1202140F USSPACECOM Service Support to Activities for Modeling & Simulation and Positioning, Navigation, Timing (PNT) to 1206415F starting in FY2025.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4					<b>R-1 Program Element (Number/Name)</b> PE 1206415F / U.S. Space Command Research and Development Support				<b>Project (Number/Name)</b> 641234 / USSPACECOM Rapid Prototype Demonstration			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
641234: USSPACECOM Rapid Prototype Demonstration	-	8.350	14.892	28.392	0.000	28.392	29.093	29.672	30.932	31.542	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

U.S. Space Command Research and Development laboratory program directly supports achieving the lines of effort described in the Defense Space Strategy and USSPACECOM Strategic Plan 2027: (1) Building a comprehensive military advantage in space; (2) integrating military space power into national, joint, and combined operations; (3) shaping the strategic environment; and (4) cooperation with allies, partners, industry, and other U.S. Government department and agencies by overcoming capability gaps that directly affect current and future space operations. This program accomplishes these tasks through five (5) lines of effort: (1) space-based effects studies and analysis to ensure mission readiness; (2) science and technology (S&T) and Research and Development (R&D) demonstrations and rapid operational prototyping to ensure space superiority; (3) performing space-based effects future shaping and campaign modeling via model-based systems engineering and analysis in the USSPACECOM J8 CAVE; (4) performing operational assessments to improve warfighting capabilities; and (5) building coalitions with allies, partners, and industry through operational systems and data integration.

NAVWAR includes defensive actions that ensures the integrity and availability of friendly use of positioning, navigation, and timing (PNT) information while offensively denying the same to an adversary. NAVWAR, the management of PNT information, requires a coordinated employment of space, cyberspace, and electromagnetic warfare (EW) capabilities, enabled by intelligence, surveillance, and reconnaissance (ISR) and electromagnetic spectrum (EMS) management. Funds are used to develop and integrate NAVWAR offensive and defensive capabilities and to create and maintain NAVWAR knowledge, and tactics, techniques and procedures (TTP) to ensure NAVWAR superiority across the DoD. IAW the most recent Unified Command Plan, USSPACECOM is responsible to plan, coordinate, integrate, synchronize and assess, and as directed, execute global offensive and defensive space operations in coordination with, or in support of other combatant commands (CCMD), Services, U.S. government agencies, allies and partners, and as directed, other entities. These operations can occur in the terrestrial or space domains, or through the EMS. Additional responsibilities include advocating for and providing space capabilities such as PNT information to CCMDs, allies, partners and other entities, as directed. NAVWAR operations, TTPs, and expertise is developed and supported throughout the DoD in large part by the USSPACECOM's Joint Navigation Warfare Center (JNWC). The JNWC leads the research, development, testing and assessment of alternative PNT and NAVWAR options IOT advocate across Services and the other CCMDs to achieve PNT overmatch. NAVWAR expertise is developed in part by JNWC-led PNT Operational Field Assessments (POFA) that assess Red and Blue PNT-related capabilities, limitation, and vulnerabilities. GYPSY POFAs are linked to Commander, USSPACECOM's Joint Exercise Program (JEP) and nested within the Chairman's Exercise Program (CEP) and CCMD's Tier 1 exercises [PACIFIC SENTRY, SPACE SENTRY and AUSTERE CHALLENGE are examples] and provide operationally realistic threat-representation, and PNT-contested environments for analytical assessment of air, ground, maritime, space and cyberspace mission capabilities. FORTUNE POFAs and PNT capability and vulnerability assessments are associated with Service exercises or mission events. PRISM POFAs encompass all other operations, actions, and activities (OAAs) and other assessments to include evaluation and rapid innovation and development of NAVWAR capabilities and/or solutions to establish and maintain PNT and NAVWAR superiority across the DoD. Assessments inform materiel and non-materiel solutions, service acquisition decisions, capability gaps, intelligence gaps, TTP development and implementation to mitigate effects on warfighter operations in the anticipated theater NAVWAR threat environments.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / <i>U.S. Space Command Research and Development Support</i>	<b>Project (Number/Name)</b> 641234 / <i>USSPACECOM Rapid Prototype Demonstration</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Title:</b> Space Research, Analysis, Development, Prototyping, Modification, Verification, and Validation</p> <p><b>Description:</b> Provide quantitative assessments that define the benefits of technology investments for capability development and inform requirements using an integrated concept definition, simulation, and performance analysis capability. A staff of diverse Subject Matter Experts (SMEs) utilizing standardized systems engineering methodology, modeling and development tools and techniques delivers independent government performance evaluations, which exercise campaign level orders of battle to support the investment in gap filling capabilities against evolving threats. Study, research, develop, modify, verify, and validate new and existing program models for space mission areas and modify existing models to portray the impact of potentially new space-based capabilities.</p> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>- Baseline software tool baseline for CAVE and complete red, blue, grey and green model development; integrate accurate models of the contested and congested space environment;</li> <li>- Develop and extend modeling techniques, including incorporation of artificial intelligence and machine learning throughout the operations centers;</li> <li>- Evaluate space system emerging concepts resiliency, survivability, effectiveness, and lethality impacts against campaign plan measures of effectiveness and performance;</li> <li>- Examine pathfinder solutions and demonstrate the utility of sustained space operations (e.g., sustained space maneuver);</li> <li>- Analyze on-orbit satellite capabilities and contribution to USSPACECOM defense and resilience against advanced threats;</li> <li>- Assess space C5ISR, battlespace awareness, and data fusion throughout the CCMD for efficiency gains and areas of improvement;</li> <li>- Focus study, analysis, research and engineering activities from Federally Funded Research and Development Centers (FFRDCs), UARCs, National Laboratories, OSD and DoD Laboratories, Academia and industry partners to identify suitable technology and concepts for rapid innovation and closure of UCP capability gaps against advanced threats.</li> </ul> <p><b>FY 2025 Plans:</b></p> <ul style="list-style-type: none"> <li>- Improve software tool baseline for CAVE and update red, blue, grey and green model development; continue to integrate accurate models of the contested and congested space environment;</li> <li>- Continue to develop and extend modeling techniques, including advancements in artificial intelligence and machine learning throughout the operations centers;</li> <li>- Evaluate space system emerging concepts resiliency, survivability, effectiveness, and lethality impacts against campaign plan measures of effectiveness and performance;</li> <li>- Leverage model-based gap assessments of current and future space-based effects to effect technology demonstrations and rapid operational prototyping opportunities;</li> <li>- Implement COAs to support efficiency gains and improvements in space C5ISR, battlespace awareness, and data fusion;</li> </ul>	8.350	14.892	16.607

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / <i>U.S. Space Command Research and Development Support</i>	<b>Project (Number/Name)</b> 641234 / <i>USSPACECOM Rapid Prototype Demonstration</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>- Examine pathfinder solutions and demonstrate the utility of sustained space operations (e.g., sustained space maneuver);</p> <p>- Analyze on-orbit satellite capabilities and contribution to USSPACECOM defense and resilience against advanced threats;</p> <p>- Focus study, analysis, research and engineering activities from Federally Funded Research and Development Centers (FFRDCs), UARCs, National Laboratories, OSD and DoD Laboratories, Academia and industry partners to identify suitable technology and concepts for rapid innovation and closure of UCP capability gaps against advanced threats.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to increase in requirements.</p>				
<p><b>Title:</b> PNT Operational Assessments</p> <p><b>Description:</b> The JNWC will investigate, operationally assess, and simulate current, emerging, and potential threats and mitigation strategies for denial of blue force PNT capabilities as well as preventing the hostile use of PNT information. Major Performers - Best value to the government selected contractors, universities, government facilities, federally funded research and development centers, laboratories, or other organizations.</p> <p><b>FY 2024 Plans:</b> Execution of operational assessments in live open-air, laboratory hardware in the loop, simulation, and anechoic chamber environments to assess advanced and potential PNT threats and assist in development of tactics, techniques and procedures [TTP] to mitigate these threats.</p> <p>Continued evaluation of innovative technologies to prevent the hostile use of PNT information and rapidly develop and present NAVWAR playbook options for the joint force; including modeling and simulation tools to enable NAVWAR operations.</p> <p><b>FY 2025 Plans:</b> Execution of operational assessments in live open-air, laboratory hardware in the loop, simulation, and anechoic chamber environments to assess advanced and potential PNT threats and assist in development of tactics, techniques and procedures[TTP] to mitigate these threats.</p> <p>Continued evaluation of innovative technologies to prevent the hostile use of PNT information and rapidly develop and present NAVWAR playbook options for the joint force; including modeling and simulation tools to enable NAVWAR operations.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Increased funding to cover increased development and testing costs.</p>		-	0.000	11.785
<b>Accomplishments/Planned Programs Subtotals</b>		8.350	14.892	28.392

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / <i>U.S. Space Command Research and Development Support</i>	<b>Project (Number/Name)</b> 641234 / <i>USSPACECOM Rapid Prototype Demonstration</i>

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Any new projects funded in this program will be awarded using competitive procedures to the maximum extent possible.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / U.S. Space Command Research and Development Support	<b>Project (Number/Name)</b> 641234 / USSPACECOM Rapid Prototype Demonstration
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<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Development of software and tools to model contested space	Various	Not specified : TBD	-	8.350	Oct 2022	-		-		-		-	Continuing	Continuing	-
USSPACECOM: Contested Space Modeling for CAVE	Various	Various : TBD	-	-		4.273	Oct 2023	4.757		0.000		4.757	Continuing	Continuing	-
USSPACECOM: Classified Space Threat-Based Studies and Analysis	Various	Various : TBD	-	-		4.059	Oct 2023	4.465		0.000		4.465	Continuing	Continuing	-
USSPACECOM: Commerical Capability Integration Platform Integration into USSPACECOM Operations	Various	Various : TBD	-	-		1.700	Jan 2024	1.500		0.000		1.500	Continuing	Continuing	-
USSPACECOM: Space Operations Research and Development	Various	Various : TBD	-	-		2.500	Feb 2024	2.750		0.000		2.750	Continuing	Continuing	-
USSPACECOM: Space Operations Application Prototyping and Integration	Various	Various : TBD	-	-		0.560	Apr 2024	1.100		0.000		1.100	Continuing	Continuing	-
Position Navigation and Timing Operational Field Assessments	Various	Various : Kirtland, AFB, NM	-	-		-		11.785	Oct 2024	-		11.785	Continuing	Continuing	-
<b>Subtotal</b>			-	8.350		13.092		26.357		0.000		26.357	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Extended modeling techniques	MIPR	Dynepic : TBD	-	-		0.600	Feb 2024	0.660	Oct 2024	0.000		0.660	Continuing	Continuing	-
<b>Subtotal</b>			-	-		0.600		0.660		0.000		0.660	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / <i>U.S. Space Command Research and Development Support</i>	<b>Project (Number/Name)</b> 641234 / <i>USSPACECOM Rapid Prototype Demonstration</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Contested Space RDT&amp;E</b>	
Space Based Studies and Analysis	[REDACTED]
Space Research and Development	[REDACTED]
Space Modeling and Simulation	[REDACTED]
Space Application Development and Prototyping	[REDACTED]
Space Operational Assessments	[REDACTED]
Space Commercial Platform Integration into Operations	[REDACTED]
<b>Navigation Warfare (NAVWAR)</b>	
NAVWAR Operational Field Assessments	[REDACTED]
Create / Maintain NAVWAR Knowledge	[REDACTED]
NAVWAR Operational and CONOPS Events	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / <i>U.S. Space Command Research and Development Support</i>	<b>Project (Number/Name)</b> 641234 / <i>USSPACECOM Rapid Prototype Demonstration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Contested Space RDT&amp;E</b>				
Space Based Studies and Analysis	1	2023	4	2029
Space Research and Development	1	2023	4	2029
Space Modeling and Simulation	2	2023	4	2029
Space Application Development and Prototyping	1	2023	4	2029
Space Operational Assessments	3	2024	4	2029
Space Commercial Platform Integration into Operations	2	2024	4	2029
<b>Navigation Warfare (NAVWAR)</b>				
NAVWAR Operational Field Assessments	1	2023	4	2029
Create / Maintain NAVWAR Knowledge	1	2023	4	2029
NAVWAR Operational and CONOPS Events	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604200F / <i>Future Advanced Weapon Analysis &amp; Programs</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	11.641	9.757	7.205	0.000	7.205	36.879	253.209	262.374	267.555	Continuing	Continuing
653133: <i>Armament Subsystems</i>	-	11.641	9.757	7.205	0.000	7.205	36.879	253.209	262.374	267.555	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Future Advanced Weapon Analysis & Programs enables Air Force enterprise weapons capability planning through the generation and execution of requirements and trade space analysis. Inclusively, this necessitates the studies of emerging weapons system gaps and technology insertion for legacy systems, responsive design and development engineering, and emerging weapon system gaps and technology insertion for legacy systems. These studies also support the determination of feasible solutions through advanced technology prototype development. Additionally, projects in this program element implement the Digital Acquisition tenants of Open, Agile, and Digital in support of all Air Force weapons by conducting high fidelity Modeling, Simulation and Analysis (MS&A) to support the development, testing, and evaluation of future concept and legacy weapons.

Efforts under this program element explore new concept developments and analyses in response to stakeholder engagements, technology transitions and common enterprise needs, experimentation, fieldable demonstrations, and the delivery of quick reaction solutions. The overall objective is to identify methods to improve weapon system performance, develop potential future designs, mitigate evolving threats, and reduce life cycle costs. These projects will also develop and expand MS&A and experimental platforms for weapon qualification activities, improve safety, identify technology gaps, and ensure viability and durability of future weapons programs.

The FY2025 funding request was reduced by \$2.518 million to account for the availability of prior year execution balances

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F. In PY \$86K was expended for civilian pay expenses in this program element. In CY \$149K is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604200F / <i>Future Advanced Weapon Analysis &amp; Programs</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	9.879	9.757	9.710	0.000	9.710
Current President's Budget	11.641	9.757	7.205	0.000	7.205
Total Adjustments	1.762	0.000	-2.505	0.000	-2.505
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	1.762	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-2.505	0.000	-2.505

**Change Summary Explanation**

FY23 funding increase for a FAWAP reprogramming

FY25 funding was reduced by \$2.505 million to account for the availability of prior year execution balances.

**C. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Capability Strategy Development	7.675	5.631	4.158
<b>Description:</b> Plans and executes early Systems Engineering, concept studies, trade space analyses, modeling & simulation (M&S), portfolio acquisition planning, agile acquisition strategies, common enterprise solutions, and risk reduction activities for future advanced weapon systems to defeat evolving threat scenarios and environments. Provides security, workspace/seating, and information technology capabilities to support mission needs. Collaborate with all program stakeholders to develop technical and investment strategies for future weapons. Create and develop a weapons operational reference architecture. Develops and maintains technology and capability roadmaps to inform strategy development.			
<b>FY 2024 Plans:</b> Conduct experiments and demonstrations of kinetic and directed energy weapon concepts to prove feasibility and facilitate transition in air to air, long range strike, and maritime strike mission areas. Evaluate industrial base implementation of agile acquisition initiatives like open systems architecture and digital engineering for future capabilities.			
<b>FY 2025 Plans:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604200F / <i>Future Advanced Weapon Analysis &amp; Programs</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Conduct experiments and demonstrations of kinetic and directed energy weapon concepts to prove feasibility and facilitate transition in air to air, long range strike, and maritime strike mission areas. Evaluate industrial base implementation of agile acquisition initiatives like open systems architecture and digital engineering for future capabilities.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> The FY 2025 funding request was reduced by \$1.444 million to account for the availability of prior year execution balances.</p>				
<p><b>Title:</b> Rapid Prototyping Demonstrations</p> <p><b>Description:</b> Enables the conduct of rapid acquisition/prototyping efforts and MS&amp;A validation through integration of empirical data derived from prototypes and demonstrations, shaped by stakeholder engagements.</p> <p><b>FY 2024 Plans:</b> Prototyping weapon concepts to demonstrate feasibility of key attributes and initiate test planning with key stakeholders. Developing armament concepts that are appropriately played in wargames/flag exercises.</p> <p><b>FY 2025 Plans:</b> Prototyping weapon system and subsystem concepts to demonstrate and assess feasibility of key attributes and initiate test planning with key stakeholders. Developing armament concepts with effects that are appropriately represented in wargames/flag exercises.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> The FY 2025 funding request was reduced by \$0.627 million to account for the availability of prior year execution balances.</p>		2.288	2.444	1.805
<p><b>Title:</b> Digital Foundation</p> <p><b>Description:</b> Provides model-based systems engineering, M&amp;S, data analysis tool suites, and associated software engineering expertise to support weapons capability strategy development and rapid prototyping. Provides Validation &amp; Verification (V&amp;V) of contractor M&amp;S models and tools. Develops guidance, Navigation, and Control (GNC) and weapon survivability analysis capabilities. Creates and maintains a searchable electronic weapons database. Develops and evaluates future weapon open system architectures, to include common enterprise solutions, and the employment of digital engineering tools to create future acquisition strategies.</p> <p><b>FY 2024 Plans:</b> Conduct lethality analysis to support the development, testing, and evaluation of legacy and future weapon concepts. Work includes physics, engineering, engagement/mission level MS&amp;A and efforts to characterize complex systems, provide independent analysis in mission areas such as long range strike.</p> <p><b>FY 2025 Plans:</b></p>		0.539	0.628	0.464

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604200F / <i>Future Advanced Weapon Analysis &amp; Programs</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Conduct lethality analysis to support the development, testing, and evaluation of legacy and future weapon concepts. Work includes physics, engineering, engagement/mission level MS&A and efforts to characterize complex systems, provide independent analysis in mission areas such as long-range strike.				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> The FY 2025 funding request was reduced by \$0.161 million to account for the availability of prior year execution balances.				
<b>Title:</b> Industry Connectivity/Technology Transitions		1.139	1.054	0.778
<b>Description:</b> Enables Air Force outreach to small and large businesses to solicit innovative and relevant common material solutions for future weapon initiatives. This includes planning and execution activities for the development of campaign analysis, rapid innovation events, communicating technology needs at industry conferences (i.e. Weapons Conference, Air Force Association Symposium), and evaluating industry submissions for innovative technologies. Demonstrate potential utility of innovative technologies from Small Business Innovation Research (SBIR) contracts, studies, campaign analyses, experiments, and prototypes. Ensure alignment of S&T activities, acquisition efforts, and warfighter requirements for air-delivered munitions with Air Force, government, and industry stakeholders to enable technology transitions.				
<b>FY 2024 Plans:</b> Demonstrate utility of innovative technologies for SBIR contracts, studies, campaign analysis and experiments, as well as management of the digital outreach required to meet these objectives. Examine how new digital acquisition programs can meet air to air, long range strike, and maritime strike mission areas to fulfill urgent warfighter requirements focusing on network collaborative autonomous, guidance and control, test and training, and direct attack.				
<b>FY 2025 Plans:</b> Demonstrate utility of innovative technologies for SBIR contracts, studies, campaign analysis and experiments, as well as management of the digital outreach required to meet these objectives. Examine how new digital acquisition programs can meet air to air, long range strike, and maritime strike mission areas to fulfill urgent warfighter requirements focusing on network collaborative autonomous, guidance and control, test and training, and direct attack.				
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> The FY 2025 funding request was reduced by \$0.271 million to account for the availability of prior year execution balances.				
<b>Accomplishments/Planned Programs Subtotals</b>		11.641	9.757	7.205
<b>D. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604200F / <i>Future Advanced Weapon Analysis &amp; Programs</i>
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**E. Acquisition Strategy**

Accomplish studies, analyses, concept development and engineering, as well as test and evaluation; efforts will be conducted using contracting strategies deemed most appropriate, generally using competitive contracts.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604200F / <i>Future Advanced Weapon A nalysis &amp; Programs</i>	<b>Project (Number/Name)</b> 653133 / <i>Armament Subsystems</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Affordable Mass & Concept Studies	C/Various	Various : Various	-	3.966	Nov 2022	4.605	Apr 2024	2.984	Apr 2025	-		2.984	Continuing	Continuing	-
Future Weapons Open System Architecture	Various	Various : Various	-	3.063	Dec 2022	0.569	Dec 2023	0.117	Nov 2024	-		0.117	Continuing	Continuing	-
<b>Subtotal</b>			-	7.029		5.174		3.101		-		3.101	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering & Studies Support	C/Various	AFLCMC/EB : Eglin AFB, FL	-	0.459	Dec 2022	1.594	Apr 2024	2.034	Apr 2025	-		2.034	Continuing	Continuing	-
Modeling & Simulation Licenses & Support	C/Various	AFLCMC/EB : Eglin AFB, FL	-	0.178	Nov 2022	0.187	May 2024	0.243	May 2025	-		0.243	Continuing	Continuing	-
Direct Cite Authority Civilian Pay	Allot	AFLCMC/EBZ : Eglin AFB, FL	-	0.086	Oct 2022	0.149	Oct 2023	0.155	Oct 2024	-		0.155	Continuing	Continuing	-
<b>Subtotal</b>			-	0.723		1.930		2.432		-		2.432	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Test and Evaluation	PO	Various : Various	-	0.080	Sep 2023	0.021	Apr 2024	0.025	Apr 2025	-		0.025	Continuing	Continuing	-
<b>Subtotal</b>			-	0.080		0.021		0.025		-		0.025	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604200F / <i>Future Advanced Weapon A nalysis &amp; Programs</i>	<b>Project (Number/Name)</b> 653133 / <i>Armament Subsystems</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Program Management Administration	Various	Various : Eglin AFB, FL	-	3.809	May 2023	2.632	Oct 2023	1.647	Oct 2024	-		1.647	Continuing	Continuing	-
<b>Subtotal</b>			-	3.809		2.632		1.647		-		1.647	Continuing	Continuing	N/A

**Remarks**  
Includes A&AS contract, IT requirements, travel, and office supplies.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	11.641	9.757	7.205	-	7.205	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604200F / <i>Future Advanced Weapon A nalysis &amp; Programs</i>	<b>Project (Number/Name)</b> 653133 / <i>Armament Subsystems</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Capability Strategy Development</b>	
Air Superiority, Global Precision Attack, and Base Defense Requirements Analyses	
Future Weapons Open System Architecture	
Trade Space Analysis Framework	
Common Enterprise Solutions	
Technology and Capability Roadmaps	
<b>Rapid Prototyping</b>	
Global Precision Attack Weapon Demos	
Base Defense Weapon Demos	
Capability Demonstrations	
<b>Digital Foundation</b>	
Lethality, GNC & Survivability Modeling, Simulation and Analysis	
Analysis Database Repository	
Model-Based Systems Engineering Foundation	
Weapon Open System Architecture Built-In	
<b>Industry Connectivity</b>	
Futures Workshops, Concepts Studies	
Threat Day Events, Innovation Days	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604200F / <i>Future Advanced Weapon A nalysis &amp; Programs</i>	<b>Project (Number/Name)</b> 653133 / <i>Armament Subsystems</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Capability Strategy Development</b>				
Air Superiority, Global Precision Attack, and Base Defense Requirements Analyses	2	2023	4	2029
Future Weapons Open System Architecture	2	2023	4	2029
Trade Space Analysis Framework	2	2023	4	2029
Common Enterprise Solutions	2	2023	4	2029
Technology and Capability Roadmaps	2	2023	4	2029
<b>Rapid Prototyping</b>				
Global Precision Attack Weapon Demos	2	2023	4	2029
Base Defense Weapon Demos	2	2023	4	2029
Capability Demonstrations	2	2023	4	2029
<b>Digital Foundation</b>				
Lethality, GNC & Survivability Modeling, Simulation and Analysis	2	2023	4	2029
Analysis Database Repository	2	2023	4	2029
Model-Based Systems Engineering Foundation	2	2023	4	2029
Weapon Open System Architecture Built-In	2	2023	4	2029
<b>Industry Connectivity</b>				
Futures Workshops, Concepts Studies	2	2023	4	2029
Threat Day Events, Innovation Days	2	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	170.057	163.156	217.662	0.000	217.662	126.611	85.681	88.783	90.536	0.000	942.486
651030: <i>GPS Receiver Development</i>	-	170.057	163.156	217.662	0.000	217.662	126.611	85.681	88.783	90.536	0.000	942.486
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

Positioning, Navigation, and Timing (PNT) solutions are critical to offensive and defense operations, enabling delivery of precision fires, safe aerial navigation, and time coordination across multiple platforms and subsystems. PNT must be maintained in the face of emerging and continuously evolving adversarial electronic and cyber threats, requiring increased system resiliency and rapid adaptability. Evolving threats will drive upgrades such as Global Positioning System (GPS) receiver modernization, development of standard navigational system formats/interfaces, increased use of open system architecture design principles, incorporation of alternative navigation sources into navigational solutions, advanced anti-jam antennas, antenna electronics, radio frequency monitoring/locating/reporting capabilities, and precision clock improvements to maintain current and future force capabilities.

Project 651030 includes Embedded GPS/Inertial Navigation System (INS) Modernized (EGI-M), Miniaturized Airborne GPS Receiver 2000 Modernization (MAGR-2K-M), Resilient GPS (R-EGI) development, Software Defined User Equipment (SDUE), anti-jam antenna/antenna electronics development, situational awareness devices, and other advanced/non-GPS PNT solutions. Activities also include, but are not limited to, current program planning, rapid prototyping/advanced technology and concept development, execution, and future program planning and support to other GPS enabled systems as required, covered within Budget Activities 6.3, 6.4, and 6.5. The PNT Resiliency, Mods, and Improvements (RMI) effort provides rapidly re-programmable application space for Alternate Satellite Navigation Systems User Equipment (UE), enabling agile and resilient response to GPS threat environments. Funds may be used to address emerging and short-notice Diminishing Manufacturing and Material Shortage (DMSMS) issues.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023 2.747M was expended for civilian pay expenses in this program element, and in FY2024 9.500M is forecasted for civilian pay expenses in this program element.

The total cost of the R-EGI Middle Tier of Acquisition effort is 249.570M, including RDT&E and procurement of prototype units. The R-EGI program is fully funded across the Future Years Defense Program.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>
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This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	176.335	163.156	217.277	0.000	217.277
Current President's Budget	170.057	163.156	217.662	0.000	217.662
Total Adjustments	-6.278	0.000	0.385	0.000	0.385
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-6.278	0.000			
• Other Adjustments	0.000	0.000	0.385	0.000	0.385

**Change Summary Explanation**

FY23 reduced -\$6.278M for Small Business Innovative Research (SBIR)

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Title:</b> Embedded GPS/INS - Modernized (EGI-M)</p> <p><b>Description:</b> EGI-M is a combined INS/GPS aircraft position, navigation, and timing system. The program upgrades the legacy EGI design to enhance resiliency against existing and emerging adversarial navigational warfare threats. Design features, such as interface standardization and software modularity to incorporate alternative navigation and timing sources, aim to reduce DoD cost and timelines to respond to newly identified threats and enhance current force capabilities. EGI-M incorporates M-Code and Automatic Dependent Surveillance-Broadcast (ADS-B) Out compliance capability into EGI receivers while addressing parts obsolescence, reducing configuration count from 260+ to a desired end-state of 16, and decreasing production and sustainment costs.</p> <p>EGI-M has two prime contractors: Northrop Grumman and Honeywell. Both contractors required re-baselining given delays to Military Global Positioning Equipment (MGUE). Northrop Grumman has completed re-baselining and is executing accordingly while Honeywell has not.</p> <p><b>FY 2024 Plans:</b></p>	59.324	17.947	17.100

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Continue development and testing of Engineering Development Models (EDMs). Contractors will also begin building Production Representative Units (PRUs) for delivery to lead aircraft platforms in support of aircraft operational test.  <b>FY 2025 Plans:</b> Complete delivery of EDMs, begin delivery of PRUs. Finalize hardware verification testing as software integration and validation analysis continues.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to planned completion of EDM development; program re-baselined in FY23 due to technical complexities				
<b>Title:</b> Miniaturized Airborne GPS Receiver 2000 - Modernization (MAGR-2K-M)  <b>Description:</b> MAGR-2K-M is an aircraft GPS receiver. The program increases MAGR-2K-Legacy resiliency against existing and emerging adversarial navigational warfare threats while reducing cost and timelines to incorporate future capabilities in response to newly identified threats. MAGR-2K-M incorporates M-Code capability into MAGR-2K-Legacy receivers while addressing parts obsolescence and providing a pathway to ADS-B Out implementation. The receiver performs appropriate trade studies and incorporates additional resiliency features, such as alternate navigation inputs.  <b>FY 2024 Plans:</b> Continue testing and problem resolution of any issues that may arise from Lead Platform and box level qualification testing such as performance, cyber, and military standard order and development test. Prepare artifacts to acquire Program Executive Office (PEO) certification (Milestone C), which enables platforms to procure MAGR 2K-M units for fielding. Anomalies found in the Global Reference Atmospheric Model (GRAM) Software Version 6.3.1 during Ground Testing, final report expected March 2024, could result in GRAM Software rework, leading to schedule slips and increased funding required for integration of the new SW into the MAGR-2K-M box.  <b>FY 2025 Plans:</b> Continue to prepare for Program Executive Office (PEO) certification (Milestone C), which enables platforms to procure MAGR 2K-M units for fielding.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to planned baseline development effort completion. If GRAM Software rework is required, FY2024 to FY2025 funding requirement will increase to integrate new software into the MAGR-2K-M box.		15.500	7.000	5.000
<b>Title:</b> PNT Resiliency, Mods, and Improvements (RMI)  <b>Description:</b> Conduct studies and analysis of PNT systems and requirements, develop and evaluate alternative courses of action, identify, plan and conduct PNT technology transition projects, conduct prototype and acquisition program planning, and provide recommended solutions to DoD and Air Force decision makers relative to navigation warfare threat evolution and technology		2.000	2.000	2.000

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>emergence. This includes work for more flexible Secure Software Defined Receiver User Equipment to include, but not limited to, developing an associated antenna electronics capability to capture other than GPS signals like Multi-Global Navigation Satellite Systems to include Navigation Technology Satellite-III and other commercial solutions.</p> <p><b>FY 2024 Plans:</b> Continue conducting studies and analysis of PNT systems and requirements. Supports risk reduction efforts to transition Alternative PNT (Alt-PNT) technologies into DoD PNT systems. Accommodates evaluation of existing systems. Development and documentation of external and internal interface design requirements.</p> <p><b>FY 2025 Plans:</b> Studies and advanced analysis of PNT systems and requirements will move toward completion. Testing will support efforts to minimize level of risk as transition continues toward Alt-PNT technologies into DoD PNT systems. Team will develop and document internal interface design requirements, accommodating evaluation of existing systems.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>				
<p><b>Title:</b> Resilient EGI (R-EGI)</p> <p><b>Description:</b> Establishes a Government Reference Architecture (GRA) embodying modular open systems architecture (MOSA), enabling and accelerating the transition and operational insertion of future resilient PNT DoD capabilities. R-EGI delivers improved PNT resiliency through the rapid design, development, test, and transition of science and technology efforts to operational PNT systems. R-EGI enables the design and development of various aircraft PNT Line Replaceable Units (LRUs) that are rapidly upgradeable to counter evolving adversarial threats; the program demonstrates the GRA through prototyping of an open R-EGI LRU. The program matures, prototypes, and tests PNT technologies/systems and enables transition paths to flow new technologies into the R-EGI LRU and iterate as required to support the warfighter.</p> <p><b>FY 2024 Plans:</b> Complete deliveries of the Production Representative Prototypes (PRP), Test Readiness Review, Cyber Testing, Developmental Testing, and PRP integration into lead platform. The FY24 milestones and efforts will serve as verification of the R-EGI LRU in preparation of Qualification Testing on Lead Platform test assets, which is planned to finalize in FY25. Development and integration of R-EGI into Medium Form Factor engineering design to include the development of a Government Owned Level 3 Technical Data Package (TDP) and delivery of R-EGI Medium Form Factor PRPs to the Government and the aircraft prime vendor for testing and integration.</p> <p><b>FY 2025 Plans:</b></p>		50.511	84.209	117.562

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Complete Technical Readiness Review (TRR) and Level 3 Technical Data Package (TDP) in preparation for delivery of Production Representative Prototypes (PRP) and integration and test activities on lead platforms. The FY25 milestones and efforts will serve as verification of the R-EGI LRU to prepare for qualification test and integration activities.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to development work and final design projects in preparation for aircraft integration test events.				
<b>Title:</b> Positioning Navigation Timing Software Defined User Equipment (PNT SDUE)  <b>Description:</b> PNT SDUE will develop a Satellite Navigation (SATNAV) Software Defined Receiver (SSDR) hosted on a Commercial Off-the-Shelf (COTS) Field Programmable Gate Array (FPGA) delivering an M-Code receiver with agile reprogramming capability to provide robust, resilient PNT against navigational warfare (NAVWAR) and cyber threats utilizing a government owned technical baseline. The program will also develop Software Defined Antenna Electronics (SDAE) utilizing COTS FPGA equipment to support the ingest of new satellite signals/capabilities, signal processing, and the incorporation of a Global Navigation Satellite System (GNSS) capability in a software reprogrammable environment. The GNSS receiver and antenna electronics will interface directly with R-EGI via modular open standard architecture. This program will transition and field advanced User Equipment capabilities from the Navigation Technology Satellite (NTS)-3 Air Force Vanguard effort.  <b>FY 2024 Plans:</b> Hold the Initial Design Review (IDR) and validate Design Agent initial direction. Begin preparation for the Detailed Design Review (DDR) 18-months after contract award (mid FY2025) using requisite design products. DDR will review all developed Digital Engineering (DE) artifacts and have the ability to meet system size, weight, and power (SWaP) requirements based on DE modeling, system architecture documentation (focused on an open system approach with government owned baseline), and initial design specifications. PNT SDUE will also initiate multiple pre-planned product improvements to expand the future program capability set from initial capability to a more robust one to better meet future Operational Mission needs.  <b>FY 2025 Plans:</b> Preliminary Design Review (PDR) will support closing out on-going efforts and entering a Milestone-B decision point. Focus of this year will be the completion of the antenna electronics for meeting emergent needs and expediting production.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to ramp up of PNT SDUE developmental efforts.		42.722	52.000	76.000
<b>Accomplishments/Planned Programs Subtotals</b>		170.057	163.156	217.662
<b>D. Other Program Funding Summary (\$ in Millions)</b> N/A				

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force Date: March 2024

**Appropriation/Budget Activity**  
3600: *Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)*

**R-1 Program Element (Number/Name)**  
PE 0604201F / *PNT Resiliency, Mods, and Improvements*

**D. Other Program Funding Summary (\$ in Millions)**

**Remarks**

Navigation, Timing, Satellite 3 (NTS-3) Software Defined User Equipment (SDUE)/Soteria has been renamed to Positioning Navigation Timing Software Defined User Equipment (PNT SDUE) beginning FY23 per signed Acquisition Decision Memorandum.

**E. Acquisition Strategy**

Modify and modernize existing legacy PNT systems to incorporate major enhancements such as Global Positioning System (GPS) M-Code, ADS-B Out, and alternative PNT solutions to GPS while reducing lifecycle costs through common sustainment practices and economies of scale. Design, development, and testing efforts, to include the development of government owned reference architectures for rapid capability insertion, share a common PE to allow flexibility in funding and planning. Integration and operational testing of completed PNT solutions are accomplished by individual platforms and weapons systems. This approach uses cost plus fixed fee (CPFF) contract types based on acquisition phase and risk with a mix between competition and sole-source strategies. Modifications to legacy receivers are acquired via Engineering Change Proposals (ECP)/Task Orders on existing contracts. Other Transaction Authorities (OTA) and industry consortiums are used to support prototyping and open standards development for new PNT solutions.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / PNT Resiliency, Mods, and Improvements	<b>Project (Number/Name)</b> 651030 / GPS Receiver Development
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<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
EGI-M #1 EMD	C/CPFF	Honeywell : Clearwater, FL	-	18.938	Nov 2022	3.390	Nov 2023	5.055	Oct 2024	-		5.055	Continuing	Continuing	-
EGI-M #2 EMD	SS/CPFF	Northrop Grumman : Woodland Hills, CA	-	32.719	Nov 2022	4.898	Nov 2023	6.535	Oct 2024	-		6.535	Continuing	Continuing	-
MAGR-2K-M	SS/CPFF	Raytheon : El Segundo, CA	-	12.600	Oct 2022	7.000	Dec 2023	5.000	Oct 2024	-		5.000	Continuing	Continuing	-
PNT RMI	SS/CPFF	Collins Aerospace : Des Moines, IA	-	4.800	Mar 2023	2.000	Mar 2024	2.000	Mar 2025	-		2.000	Continuing	Continuing	-
R-EGI	C/CPFF	IS4S : Huntsville, AL	-	3.750	Jan 2023	-		-		-		-	Continuing	Continuing	-
R-EGI Modernization & Additional Platforms	C/CPFF	TBD : TBD	-	37.900	Mar 2023	70.997	Mar 2024	108.732	Jan 2025	-		108.732	Continuing	Continuing	-
PNT SDUE	TBD	Not specified. : TBD	-	29.612	May 2023	50.000	Mar 2024	49.293	Jan 2025	-		49.293	Continuing	Continuing	-
<b>Subtotal</b>			-	140.319		138.285		176.615		-		176.615	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
EGI-M FFRDC	Various	MITRE Corp. : Bedford, MA	-	0.263	Nov 2022	0.263	Dec 2023	0.100	Feb 2025	-		0.100	Continuing	Continuing	-
R-EGI FFRDC	Various	MITRE Corp. : Bedford, MA	-	1.261	Nov 2022	4.000	Dec 2023	4.000	Feb 2025	-		4.000	Continuing	Continuing	-
PNT SDUE FFRDC	Various	MITRE Corp : Bedford, MA	-	6.150	May 2023	2.000	Dec 2023	7.524	Feb 2025	-		7.524	Continuing	Continuing	-
DCA Civ Pay	Allot	Allotment : Wright Patterson AFB, OH	-	2.747	Jan 2023	9.500	Jan 2024	9.870	Oct 2024	-		9.870	Continuing	Continuing	-
<b>Subtotal</b>			-	10.421		15.763		21.494		-		21.494	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / PNT Resiliency, Mods, and Improvements	<b>Project (Number/Name)</b> 651030 / GPS Receiver Development
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EGI-M	PO	Various : TBD	-	0.500	Nov 2022	0.300	Nov 2023	1.500	Feb 2025	-		1.500	Continuing	Continuing	-
MAGR-2K-M	PO	Various : TBD	-	0.900	Jun 2023	-		-		-		-	Continuing	Continuing	-
R-EGI	PO	Various : TBD	-	1.000	Dec 2022	0.750	Dec 2023	-		-		-	Continuing	Continuing	-
R-EGI Modernization & Additional Platforms	Various	Various : TBD	-	1.000	Mar 2023	-		1.050	Dec 2024	-		1.050	Continuing	Continuing	-
PNT SDUE	Various	Various : TBD	-	-		-		8.649	Mar 2025	-		8.649	Continuing	Continuing	-
<b>Subtotal</b>			-	3.400		1.050		11.199		-		11.199	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Strategic Planning/PMA	C/Various	SERCO : Robins AFB, GA	-	15.917	Oct 2022	8.058	Oct 2023	8.354	Mar 2025	-		8.354	Continuing	Continuing	-
<b>Subtotal</b>			-	15.917		8.058		8.354		-		8.354	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		-	170.057	163.156	217.662	-	217.662	Continuing	Continuing	N/A

**Remarks**  
 EGI-M funding for EMD #1 and EMD #2 decreased significantly from FY 23 to FY 24 due to expected EMD completion/Engineering Development Model (EDM) delivery in 2nd Quarter (#2) and 3rd Quarter (#1) FY 24. Follow-on efforts will be accomplished on the production & sustainment IDIQ contract.  
  
 R-EGI Modernization & Additional Platforms increase is due to the approval of development of additional R-EGI Form Factor 3.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / PNT Resiliency, Mods, and Improvements	<b>Project (Number/Name)</b> 651030 / GPS Receiver Development

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>PNT</b>																												
EGI-M #1 EMD (Honeywell)																												
EGI-M #1 Modernization & Additional Platforms																												
EGI-M #2 EMD (NGC)																												
EGI-M #2 Modernization & Additional Platforms																												
MAGR-2K-M EMD																												
MAGR-2K-M Testing																												
R-EGI Prototyping																												
R-EGI Modernization & Additional Platforms																												
PNT SDUE																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604201F / <i>PNT Resiliency, Mods, and Improvements</i>	<b>Project (Number/Name)</b> 651030 / <i>GPS Receiver Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>PNT</i></b>				
EGI-M #1 EMD (Honeywell)	1	2023	3	2026
EGI-M #1 Modernization & Additional Platforms	2	2024	4	2028
EGI-M #2 EMD (NGC)	1	2023	3	2026
EGI-M #2 Modernization & Additional Platforms	2	2024	4	2028
MAGR-2K-M EMD	1	2023	4	2024
MAGR-2K-M Testing	3	2023	4	2026
R-EGI Prototyping	4	2023	4	2024
R-EGI Modernization & Additional Platforms	2	2023	4	2028
PNT SDUE	2	2024	2	2029

**Note**

Position Navigation and Timing (PNT) schedules updated to reflect current developmental timelines and reflect development for additional aircraft which will be utilizing modernized PNT receiver technology.

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	61.736	45.884	70.823	0.000	70.823	60.847	46.261	47.914	48.862	Continuing	Continuing
654236: <i>Engineering Analysis</i>	-	0.994	4.519	2.515	0.000	2.515	2.723	2.779	2.879	2.936	Continuing	Continuing
654807: <i>Nuclear Weapon System Technology and Integration</i>	-	59.266	39.298	66.307	0.000	66.307	55.956	41.269	42.741	43.586	Continuing	Continuing
655708: <i>Nuclear Weapons Support</i>	-	1.476	2.067	2.001	0.000	2.001	2.168	2.213	2.294	2.340	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The Air Force Nuclear Weapons Center (AFNWC), Kirtland AFB, NM, is the primary executing agency for this program. The AFNWC is tasked with supporting and supplying technical expertise on all Air Force (AF) nuclear weapons and weapon systems. This program provides resources for technical and programmatic activities, which include research, development, test, and evaluation of all nuclear- equipment/systems, as well as performing independent analyses on all AF nuclear weapon systems and activities; to include weapon/system development, sustainment, interoperability, compatibility, safety, security, reliability; to include nuclear stockpile certification management for all AF nuclear weapon systems.

The FY 2025 funding request was reduced by \$2.664 million to account for the availability of prior year execution balances.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0M was expended for civilian pay expenses in this program element, and in FY24 \$0M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	63.906	45.884	40.775	0.000	40.775
Current President's Budget	61.736	45.884	70.823	0.000	70.823
Total Adjustments	-2.170	0.000	30.048	0.000	30.048
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-2.170	0.000			
• Other Adjustments	0.000	0.000	30.048	0.000	30.048

**Change Summary Explanation**

FY 2025 funding increase is predominantly due to an increase of 27.695 million for nuclear certification management (project 654807) and inflation adjustments.

The FY 2025 funding request was reduced by \$2.664 million to account for the availability of prior year execution balances.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604222F / Nuclear Weapons Support				<b>Project (Number/Name)</b> 654236 / Engineering Analysis			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
654236: <i>Engineering Analysis</i>	-	0.994	4.519	2.515	0.000	2.515	2.723	2.779	2.879	2.936	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The AFNWC is the executing agency for the Engineering Analysis (EA) program that supplies and maintains technical expertise on all AF nuclear weapons, weapon systems, by ensuring cybersecurity integration into systems engineering processes, through the application of modular designs/approaches using digital systems engineering methodologies. Develops a cyber-savvy workforce; increases assurance for fielded systems in a cost-effective and efficient manner; increases the integration of cyber-intelligence; enables cyber operation flights and cyber protection teams.

The EA program supplies resources for technical and programmatic activities which include performing independent analyses on all stages of AF nuclear weapon systems lifecycles including weapons development, sustainment, interoperability, compatibility, training, safety, security, reliability, and AF legacy nuclear stockpile management/retirement. The Data Management and Information Technology modernization efforts will increase quality and flexibility of our design, development, and fielding of nuclear capabilities to the warfighter. The AFNWC partners with external agencies to achieve cross-cutting solutions to mitigate cyber vulnerabilities. The Zero Trust Implementation activity supplies a roles-based way to ensure only the people with the authority to author and/or consume data can do so. The implementation of Digital Engineering efforts, and development of Model Based System Engineering (MBSE) efforts, will facilitate the testing, analysis and timely delivery of nuclear weapon systems. The EA Digital Engineering efforts also include cloud-based implementation and sustainment technologies, ensuring all data analysis and visualizations reach-back to a single source of truth. The Cloud Implementation Sustainment effort enables the management of centralized licensing of cloud-based technologies across the AFNWC portfolio.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0M was expended for civilian pay expenses in this program element, and in FY24 0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> Engineering Analysis	0.994	4.519	2.515	-	2.515
<b>Description:</b> Provide the technical oversight of all AF nuclear weapons, delivery systems, and support systems. Provide the engineering and technical management expertise required in critical areas of nuclear weapons safety, security, reliability, operations, modernization, testing, and counterproliferation.					
<b>FY 2024 Plans:</b> Digital Systems Engineering - Implement Digital Data Standardization.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654236 / <i>Engineering Analysis</i>
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**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<p>Digital Engineering Orchestration - Develop and provide common data models within the Teamcenter digital environment.</p> <p>Digital Engineering Pilot Project - Research and report on various approaches to enterprise licensing and management of MBSE applications and digital tools.</p> <p>Zero Trust Implementation - Analyze multiple applications of Zero Trust Data Fabric implementation for future implementation in the AFNWC.</p> <p>Cloud Implementation Sustainment - Move MBSE, resource management and analysis processes into cloud structures, assuring single source of truth data pull and near real-time visualization.</p> <p><b><i>FY 2025 Base Plans:</i></b>                      Continue to implement digital data standardization for digital systems engineering efforts; develop and provide common data models within the team-center digital environment for Digital Engineering Orchestration efforts. Continue to research and report on various approaches to enterprise licensing and management of MBSE applications and digital tools for the Digital Engineering Pilot Project efforts. Continue to analyze multiple applications of Zero Trust Data Fabric implementation for future implementation in the AFNWC for Zero Trust Implementation efforts. Continue to move MBSE, resource management and analysis processes into cloud structures assuring single source of truth data pull and near real-time visualization for Cloud Implementation Sustainment efforts.</p> <p>Digital Systems Engineering - Continue to implement Digital Data Standardization.</p> <p>Digital Engineering Orchestration - Continue to develop and provide common data models within the Teamcenter digital environment.</p> <p>Digital Engineering Pilot Project - Continue to research and report on various approaches to enterprise licensing and management of MBSE applications and digital tools.</p> <p>Zero Trust Implementation - Continue to analyze multiple applications of Zero Trust Data Fabric implementation for future implementation in the AFNWC.</p> <p>Cloud Implementation Sustainment - Continue to move MBSE, resource management, and analytic processes into cloud structures, assuring a single source of truth data pull and near real-time visualization.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b></p>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654236 / <i>Engineering Analysis</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Funding decrease in FY25 due to the maturation and transfer to sustainment of the MBSE effort by the end of FY 2024. These specific costs were related to physical asset implementation and human capital training.					
<b>Accomplishments/Planned Programs Subtotals</b>	0.994	4.519	2.515	-	2.515

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

The most appropriate acquisition strategy will be evaluated and chosen for each effort. Contracting strategies include but are not limited to: Cost Plus types, Firm Fixed Price, Delivery Orders, and other types of execution such as Micro-purchases, and Military Interdepartmental Purchase Request (MIPR). These will be used to obtain technical analyses and technical support for safety, operations, and counter-proliferation assessments. Supporting activities are contracted separately using contracting strategies deemed most appropriate to the effort. All contracts will be openly competed.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / Nuclear Weapons Support	<b>Project (Number/Name)</b> 654236 / Engineering Analysis
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Federally Funded Research and Development Center (FFRDC) Cybersecurity Vulnerability Analysis	MIPR	AEROSPACE : Kirtland AFB, NM	-	0.020	Nov 2022	0.655	Nov 2023	0.355	Nov 2024	-		0.355	Continuing	Continuing	-
<b>Subtotal</b>			-	0.020		0.655		0.355		-		0.355	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support	MIPR	AEROSPACE : Kirtland AFB, NM	-	0.114	Apr 2023	1.068	Apr 2024	0.820	Nov 2024	-		0.820	Continuing	Continuing	-
Digital Systems Engineering	MIPR	Various : Kirtland AFB, NM	-	0.860	Jun 2023	-		-		-		-	0.000	0.860	-
Digital Engineering Orchestration	MIPR	Various : Kirtland AFB, NM	-	-		0.600	Apr 2024	0.225	Apr 2025	-		0.225	Continuing	Continuing	-
Digital Engineering Pilot Project	MIPR	Various : Kirtland AFB, NM	-	-		0.500	Apr 2024	0.225	Apr 2025	-		0.225	Continuing	Continuing	-
Zero Trust Implementation	MIPR	Various : Kirtland AFB, NM	-	-		0.500	Apr 2024	0.225	Apr 2025	-		0.225	Continuing	Continuing	-
Cloud Implementation Sustainment	MIPR	Various : Kirtland AFB, NM	-	-		0.571	Apr 2024	0.235	Apr 2025	-		0.235	Continuing	Continuing	-
<b>Subtotal</b>			-	0.974		3.239		1.730		-		1.730	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Support A&AS	Various	Various : Kirtland AFB, NM	-	-		0.468	Apr 2024	0.265	Apr 2025	-		0.265	Continuing	Continuing	-
Program Management Support (PSC)	Various	Various : Kirtland AFB, NM	-	-		0.157	Apr 2024	0.165	Apr 2025	-		0.165	Continuing	Continuing	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654236 / <i>Engineering Analysis</i>
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
<b>Engineering &amp; Cyber Security Analysis</b>																												
Emulation of the SMIC																												
Secure Cyber Facility Support																												
Cyber Security Vulnerability Assessments & Analysis																												
Digital Systems Engineering																												
Digital Engineering Orchestration & Pilot Project																												
Zero Trust Implementation																												
Cloud Implementation Sustainment/MBSE																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654236 / <i>Engineering Analysis</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Engineering &amp; Cyber Security Analysis</i></b>				
Emulation of the SMIC	1	2023	4	2023
Secure Cyber Facility Support	1	2023	4	2023
Cyber Security Vulnerability Assessments & Analysis	1	2023	4	2029
Digital Systems Engineering	3	2024	4	2029
Digital Engineering Orchestration & Pilot Project	3	2024	4	2029
Zero Trust Implementation	3	2024	4	2029
Cloud Implementation Sustainment/MBSE	3	2024	4	2029

**Note**  
Last funding for SMIC and Secure Cyber Facility Support was in FY22. Activities ended in FY23.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604222F / Nuclear Weapons Support				<b>Project (Number/Name)</b> 654807 / Nuclear Weapon System Technology and Integration			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
654807: Nuclear Weapon System Technology and Integration	-	59.266	39.298	66.307	0.000	66.307	55.956	41.269	42.741	43.586	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The AFNWC is the executing agency for the Nuclear Weapon System Technology and Integration (NWST&I) program that ensures the safety, survivability, security, and effectiveness of AF nuclear weapon systems in direct support to the military warfighters and force providers. Emphasis is placed on ensuring nuclear weapon system compatibility, validating nuclear safety designs, generating weapon system safety rules, developing flight profiles for safe and effective nuclear weapons delivery, exposing vulnerabilities which could compromise the authorized use of nuclear weapons, and developing mitigations to any nuclear weapon system safety, security, or effectiveness shortfalls (to include future concept development). These requirements are met through in-depth technical, operational, and intelligence evaluations, demonstrations, modeling and simulation (M&S), test and evaluation (T&E), trade studies, requirements analysis, and recommendations to planning, policy, and doctrine. Additionally, the program conducts DoD-required certification for legacy, modernized, and new nuclear weapon systems.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23, 0M was expended for civilian pay expenses in this program element, and in FY24, 0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> Weapons Effects	6.827	6.638	7.049	0.000	7.049
<b>Description:</b> Ensures survivable and effective AF systems through evaluation, test, and analyses of nuclear environments and their impact to AF platforms. Develops and maintains the sole AF analytical capability to assess nuclear effects on weapon systems, their inherent hardness and mission degradation within a nuclear environment. These efforts shape and support requirements for new acquisitions, fielded systems, as well as providing critical expertise for exercises and operational planning.					
<b>FY 2024 Plans:</b> Develop, modernize, verify and validate M&S tools and testing methods, in order to characterize nuclear effects on modernized and newly acquired AF systems. Develop rigorous methods and tools for predictive responses to nuclear effects. Analyze hardness requirements within the weapon system specification for current					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654807 / <i>Nuclear Weapon System Technology and Integration</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<p>and future delivery aircraft, support aircraft, weapon systems, ICBMs, and Nuclear Command, Control, and Communications (NC3) assets. Develop methods and tools to assure weapon effectiveness in operationally relevant environments. Support AFGSC through oversight and standardization of AF aircraft threat-level electromagnetic pulse (EMP) test execution.</p> <p><b>FY 2025 Base Plans:</b> Continue development, modernization, verification, and validation of M&amp;S tools (to include integration with other DoD M&amp;S tools.) Continue to develop rigorous methods and tools for testing and predictive response to nuclear effects as they relate to the expected operational environments. Continue analysis to establish hardness requirements within the weapon system specification for current and future delivery aircraft, support aircraft, weapon systems, ICBMs, and NC3 assets. Continue to expand development of methods and tools used to assure weapon effectiveness in operationally relevant environments. Continue to support AFGSC through oversight and standardization of AF EMP threat-level test strategy and execution. The team will also provide Conventional-Nuclear Integration (CNI) analysis to support the CSAF CNI Capstone Implementation Plan and path forward.</p> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increase is due to expanded testing requirements and activities.</p>					
<p><b>Title:</b> Air Force Nuclear Red Team (AFNRT)</p> <p><b>Description:</b> The AFNRT independently evaluates vulnerabilities of current and future strategic systems across their lifecycle vs the full complement of current and emerging threats. These strategic systems capability assessments include focused intelligence analysis, nuclear weapon system fragility analysis, vulnerability modes &amp; effects analysis, M&amp;S, and effects testing. As part of the effort to assess the vulnerabilities, data is used from various tests and M&amp;S efforts to develop mitigation strategies and develop potential future system concepts for consideration by program offices and the Combatant Commands. This analysis of various threats to AF nuclear weapon systems is used to inform the warfighter's concept of operations (CONOPS), modernization activities, and new acquisitions.</p> <p><b>FY 2024 Plans:</b> Conduct threat evaluations and analyses of strategic system vulnerabilities to current and future threats. These threats include, but are not limited to, kinetic, electronic warfare, cyber, and supply chain exploitation. Analyze</p>	14.710	14.323	13.226	0.000	13.226

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654807 / <i>Nuclear Weapon System Technology and Integration</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<p>threats during maintenance and logistics operations and the potential to exploit personnel as part of the attack vector. Assessments include focused intelligence analysis, nuclear weapon system fragility analysis, vulnerability modes, and effects analysis, M&amp;S and combined environment testing. Data from these efforts will be used in the development of requirements, future system concepts, CONOPS, and tactics, techniques, and procedures (TTPs) as well as used to support the CSAF CNI Capstone Roadmap development and path forward.</p> <p><b>FY 2025 Base Plans:</b> Continue to improve assessments of strategic system capabilities/vulnerabilities relative to Air-Delivered (AD) and ground-based nuclear weapon systems, and Nuclear Command, Control &amp; Communications (NC3). Continue evaluations and analyses to address current and future threats that include, but are not limited to, kinetic, electronic warfare, cyber, and supply chain exploitation. Assessments will include focused intelligence analysis, nuclear weapon system fragility analysis, vulnerability modes and effects analysis, nuclear hardness qualification testing, M&amp;S, and combined environment testing. Data from these evaluations will be used in the development of requirements, future system concepts, CONOPS, and TTPs as well as support the CSAF CNI Capstone Implementation Plan and path forward.</p> <p><b>FY 2025 OCO Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to reduction of threat analysis and simulation support.</p>					
<p><b>Title:</b> Nuclear Certification Management</p> <p><b>Description:</b> This effort conducts nuclear certification activities that were previously contained in this program element, under project 654236, Engineering Analysis, prior to FY23. This funding is for statutory and regulatory (DoD and AF) nuclear enterprise-wide nuclear certification activities by AFNWC. It is distinct from, but complemented by, the funding identified by specific nuclear weapons programs (e.g., B-21, LGM-35A Sentinel, F-35A, F-15E, etc.) for their roles, responsibilities, and authorities in nuclear certification, as segregated and directed by the same regulations (DODM 5210.41M and AFI 63-125). By DoD mandate, AFNWC provides an external (independent of program office) review of a weapon system's nuclear safety and surety features, eventually certifying the weapon system and its operational employment procedures. Nuclear certification activities include independent AF technical reviews, evaluations, and analyses for nuclear safety themes, employment procedures, delivery systems (warhead and/or carrier platforms, subsystems, or components), support equipment, software, and facilities that handle, maintain, or operate nuclear weapons or nuclear weapon systems to ensure compliance with national, DoD, and AF guidance. AFNWC's scope includes overall</p>	37.729	18.337	46.032	0.000	46.032

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654807 / <i>Nuclear Weapon System Technology and Integration</i>

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<p>management of the entire nuclear certification process for the AF, as well as the execution of testing and evaluations to achieve compatibility certification, nuclear safety design, weapon system safety rules, and validated technical orders &amp; functions (e.g., security) involving personnel and organizations assigned to perform nuclear missions. The objective of this project is focused on new nuclear weapon system acquisition programs, as well as fielded system sustainment, modifications, and upgrades. This project will manage the flow of nuclear certification activities and provide certification data to all stakeholders via the Nuclear Certification Analysis Tool (NCAT). Examples include certification requirements plans, Aircraft Monitor and Control (AMAC) certification, consequence analyses, qualitative and quantitative hazard evaluations, and technical design analysis.</p> <p><b>FY 2024 Plans:</b> Develop capabilities to optimize nuclear certification activities within the digital environment. This includes the use of advanced computational approaches (e.g., artificial intelligence), and automated toolsets/algorithms to assist certifiers in assessing nuclear weapon system compliance with the four DoD surety standards and ensure DoD system compatibility with DOE systems. Invest in capabilities to test and assess delivery platforms compatibility with nuclear weapon systems. Invest in and improve nuclear certification-specific data analysis capabilities (tools) to match growing weapon system complexity. Conduct independent technical analyses to execute time-certain certification-required activities for F-35A, B-21, LRSO missile, Sentinel, B-52H, modernized ICBM Fuze, and seven Weapon Generation Facilities. Support DoD-requested capability growth for the NCAT analysis tool to optimize resource loading, program deconfliction, and to provide senior leader insight into nuclear certification status.</p> <p><b>FY 2025 Base Plans:</b> Continue to develop capabilities to optimize nuclear certification activities within the digital environment. This includes the use of advanced computational approaches (e.g., artificial intelligence), and automated toolsets/algorithms to assist certifiers in assessing nuclear weapon system compliance with the four DoD surety standards and ensure DoD system compatibility with DOE systems. Continue to invest in capabilities to test and assess delivery platforms compatibility with nuclear weapon systems. Continue to invest in and improve nuclear certification-specific data analysis capabilities (tools) to match growing weapon system complexity. Continue to conduct independent technical analyses to execute on-time certification activities for F-35A, B-21, LRSO missile, Sentinel, B-52H, modernized ICBM Fuze, and seven Weapon Generation Facilities. Continue to support DoD-requested capability growth for the NCAT analysis tool to optimize resource loading, program deconfliction and to provide senior leader insight into nuclear certification status.</p> <p><b>FY 2025 OCO Plans:</b></p>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654807 / <i>Nuclear Weapon System Technology and Integration</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
N/A					
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased to account for escalation in certification activity required to maintain schedule for all nuclear modernization programs that require nuclear certification.					
<b>Accomplishments/Planned Programs Subtotals</b>	59.266	39.298	66.307	0.000	66.307

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

All sub-projects are continuous support/testing to all nuclear weapon systems.  
Follow-on contracts are for Modeling and Simulation and engineering, program and testing support efforts.

**D. Acquisition Strategy**

The objective of the NWST&I program strategy is to provide independent technical engineering, and scientific analyses, assessments and information in support of AF nuclear weapons systems while developing, and mentoring and shaping the next generation of AF resources. Multiple Cost Plus Fixed Fee (CPFF) and/or Time and Material (T&M) and Military Interdepartmental Purchase Requests (MIPR) are/will be used to execute testing and evaluations, technical analyses, and/or provide focused support unique to the nuclear enterprise, for the technology and integration processes. All contracts will be openly competed.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / Nuclear Weapons Support	<b>Project (Number/Name)</b> 654807 / Nuclear Weapon System Technology and Integration
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<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Family of Testers Engineering and Development	C/CPFF	Booz Allen Hamilton : Kirtland AFB, NM	-	11.069	Dec 2022	7.540	Dec 2023	11.732	Dec 2024	-		11.732	0.000	30.341	-
<b>Subtotal</b>			-	11.069		7.540		11.732		-		11.732	0.000	30.341	N/A

**Remarks**  
 Fluctuations in funding level for Family of Testers Engineering Development between FY23 and FY25 corresponds to reduction in funds for nuclear certification in FY24. Increase in FY25 due to escalation in certification activities.

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Modeling & Simulation	C/CPFF	Peerless Technology Corp : Kirtland AFB, NM	-	2.653	Jan 2023	3.000	Dec 2023	4.000	Dec 2024	-		4.000	Continuing	Continuing	-
FFRDC Engineering & Technical Support	MIPR	Aerospace Corp(SMC) : El Segundo, CA	-	4.971	Dec 2022	3.430	Nov 2023	5.206	Nov 2024	-		5.206	Continuing	Continuing	-
Security Support	MIPR	Other : Kirtland AFB, NM	-	0.000	Nov 2022	0.896	Jan 2024	0.923	Jan 2025	-		0.923	Continuing	Continuing	-
Research and Analysis Support	C/CPFF	Booz Allen Hamilton : Kirtland AFB, NM	-	3.780	Dec 2022	4.013	Dec 2023	4.153	Dec 2024	-		4.153	Continuing	Continuing	-
Nuclear Certification Engineering Support	C/CPFF	Booz Allen Hamilton : Kirtland AFB, NM	-	10.777	Dec 2022	6.305	Dec 2023	14.378	Dec 2024	-		14.378	Continuing	Continuing	-
Equipment	Various	Various : Kirtland AFB, NM	-	0.336	Sep 2023	0.083	Mar 2024	0.100	Mar 2025	-		0.100	Continuing	Continuing	-
Threat Analysis and Simulation Support	MIPR	MSIC : Various	-	0.250	Sep 2023	1.300	Feb 2024	0.500	Feb 2025	-		0.500	Continuing	Continuing	-
<b>Subtotal</b>			-	22.767		19.027		29.260		-		29.260	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / Nuclear Weapons Support	<b>Project (Number/Name)</b> 654807 / Nuclear Weapon System Technology and Integration
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
 Fluctuations in funding level for Nuclear Certification Engineering Support between FY23 and FY25 corresponds to reduction in funds for nuclear certification in FY24. Increase in FY25 due to escalation in certification activities.

Changes from FY24 budget doc:  
 Removed NNWST&I from budget lines;  
 Changed Program Support to Research and Analysis Support;  
 Changed NWST&I to Threat Analysis and Simulation Support;

FY23 Equipment includes Shredder, IT Hardware refresh, and furniture upgrades.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Evaluation	C/CPAF	John Hopkins : Laurel, MD	-	0.000		1.250	Mar 2024	-		-		-	0.000	1.250	-
Weapons Effects Uncertainty Testing	MIPR	National Labs : Kirtland AFB, NM	-	0.800	Feb 2023	0.900	Dec 2023	1.000	Dec 2024	-		1.000	Continuing	Continuing	-
AFNRT Assessments	Various	Various : Various	-	11.501	Nov 2022	5.570	Dec 2023	5.500	Dec 2024	-		5.500	Continuing	Continuing	-
Modeling, Simulation and Analysis	C/CPFF	Booz Allen Hamilton : Kirtland AFB, NM	-	0.500	Apr 2023	0.900	Dec 2023	1.000	Dec 2024	-		1.000	Continuing	Continuing	-
Capability Assessments	C/FP	CMU-SEI : Pittsburgh, PA	-	0.250	Jan 2023	-		-		-		-	0.000	0.250	-
AMAC Testing	C/CPAF	Booz Allen Hamilton : Kirtland AFB, NM	-	10.894	Dec 2022	2.619	Dec 2023	16.123	Dec 2024	-		16.123	Continuing	Continuing	-
<b>Subtotal</b>			-	23.945		11.239		23.623		-		23.623	Continuing	Continuing	N/A

**Remarks**  
 Fluctuations in funding level for AMAC Testing between FY23 and FY25 corresponds to reduction in funds for nuclear certification in FY24. Increase in FY25 due to escalation in certification activities.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / Nuclear Weapons Support	<b>Project (Number/Name)</b> 654807 / Nuclear Weapon System Technology and Integration
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Changes from FY24 budget doc:  
 Removed NWST&I from line items;  
 Changed NWST&I AFNRT Assessment 2 to Modeling, Simulation and Analysis;  
 Removed Testing line.

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NWST&I Program Support Cost (PSC)	Various	Various : Kirtland AFB, NM	-	1.485	Nov 2022	1.492	Nov 2023	1.692	Nov 2024	-		1.692	Continuing	Continuing	-
<b>Subtotal</b>			-	1.485		1.492		1.692		-		1.692	Continuing	Continuing	N/A

**Remarks**  
 PSC includes travel, training, supply/equipment, freight, JWICS contractor support, and communications support (ARC & JWICS Phones).

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	59.266	39.298	66.307	-	66.307	Continuing	Continuing	N/A

**Remarks**  
 All sub-projects are continuous support/testing to all nuclear weapon systems.  
 Follow-on contracts for Modeling and Simulation and engineering, program and testing support efforts.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654807 / <i>Nuclear Weapon System Technology and Integration</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>AF Nuclear Red Team</i></b>	
Assessments	
Evaluation	
<b><i>Weapons Effects</i></b>	
Weapons Uncertainty	
Modeling, Simulation & Analysis	
<b><i>Nuclear Certification</i></b>	
Engineering Support	
<b><i>Nuclear Assessment</i></b>	
AMAC Testing	
<b><i>Nuclear Development</i></b>	
Family of Testers	
<b><i>Program Support</i></b>	
Engineering	
Security	
Research and Analysis	
Equipment	
Program Support Cost (PSC)	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 654807 / <i>Nuclear Weapon System Technology and Integration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>AF Nuclear Red Team</i></b>				
Assessments	1	2023	4	2029
Evaluation	2	2024	2	2025
<b><i>Weapons Effects</i></b>				
Weapons Uncertainty	1	2023	4	2029
Modeling, Simulation & Analysis	1	2023	4	2029
<b><i>Nuclear Certification</i></b>				
Engineering Support	1	2023	4	2029
<b><i>Nuclear Assessment</i></b>				
AMAC Testing	1	2023	4	2029
<b><i>Nuclear Development</i></b>				
Family of Testers	1	2023	3	2026
<b><i>Program Support</i></b>				
Engineering	1	2023	4	2029
Security	1	2024	4	2029
Research and Analysis	1	2023	4	2029
Equipment	1	2023	4	2029
Program Support Cost (PSC)	1	2023	4	2029

**Note**

All sub-projects are continuous support/testing to all nuclear weapon systems.  
Follow-on contracts for Modeling and Simulation and engineering, program and testing support efforts.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604222F / Nuclear Weapons Support				<b>Project (Number/Name)</b> 655708 / Nuclear Weapons Support			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
655708: Nuclear Weapons Support	-	1.476	2.067	2.001	0.000	2.001	2.168	2.213	2.294	2.340	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The modernization of legacy nuclear systems, development of new nuclear-capable aircraft and munitions and the creation of the new Weapon Generation Facilities (WGFs) within Air Force Global Strike Command (AFGSC) may require new support equipment capabilities to meet system and mission requirements. Additionally, the WGF introduces a new concept of operations by integrating maintenance and storage activities into one facility. To support mission generation requirements, support equipment and capabilities related to the nuclear enterprise must be studied, modified, or in extreme cases, re-developed in order to maintain operational readiness. Examples of equipment under review include, but are not limited to, power generation, heating, ventilation, and air conditioning (HVAC), munition trailers/accessories, munition lifts/accessories, tow vehicles, and munition test/maintenance stands. Any identified capability gaps may result in the design of new systems. The analysis and potential modification of existing equipment ensures mission generation remains executable.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY24 0M was expended for civilian pay expenses in this program element, and in FY25 0M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> Nuclear Enterprise Support Equipment	1.476	2.067	2.001	-	2.001
<b>Description:</b> Nuclear Enterprise Support Equipment Review and Design					
<b>FY 2024 Plans:</b> Studies and analyses from previous efforts in this program are being leveraged to develop the next generation of munitions handling equipment, stabilized power, HVAC, munitions stands and trailers, and aerospace ground equipment used to support the nuclear enterprise. Funding supports engineering associated with requirements definition, technology maturation, and risk reduction needed to develop solutions to deliver prototypes which meet the evolving requirements of AFGSC for next-generation Common Aviation Support Equipment (CAvSE). Some examples include, but are not limited to the Small Agile Lift Truck (SALT), Electric Manually Operated Lift Truck (EMOLT), Large Nuclear Munitions Trailer (MHU-TSX/M), and the Multi-Capable Trailer (MCT).					
<b>FY 2025 Base Plans:</b> Continue to utilize studies and analyses from previous efforts to develop the next generation of munitions handling equipment, as well as Developmental Testing (DT) and Operational Testing (OT), nuclear certification					

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 655708 / <i>Nuclear Weapons Support</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<p>of mature demonstrators, stabilized power, HVAC, munitions stands and trailers, and other aerospace ground support equipment needed to support the nuclear enterprise. Continue engineering and testing associated with requirements definition, technology maturation, and risk-reduction needed to develop solutions to deliver prototypes which meet the evolving requirements of AFGSC for next-generation CAVSE. Some examples include, but are not limited to the SALT, EMOLT, Large Nuclear Munitions Trailer (MHU-TSX/M), Munitions Capable Trailer (MCT) and Next Gen 3/7-K Jammer.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Negligible decrease.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	1.476	2.067	2.001	-	2.001

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

- D. Acquisition Strategy**
1. The acquisition strategy for the SALT is for MilTech, via a Partnership Intermediary Agreement (PIA), to continue to engage and support industry partners, Manufacturing Extension Partnerships (MEP), and Subject Matter Experts (SMEs) on the development, delivery, and testing of a SALT demonstration prototype, along with a potential Next Gen solution for the 7K munition loader.
  2. The acquisition strategy for the EMOLT is for MilTech, via a PIA, to continue to engage and support industry partners, MEP, and SMEs on the development and delivery of six LP-EMOLT demonstration prototypes, in support of the Limited Operational User Evaluation, EMI, DT & OT testing.
  3. The acquisition strategy for the MHU-TSX/M is for AFGSC to continue working with Square One Corporation to design, fabricate, and test an advanced robotic munitions loader for large aircraft.
  4. The acquisition strategy for the MCT is for the Air Force Research Laboratory to work with industry partners to design, fabricate, and test a prototype. The MCT is a power-assisted and manually capable approach to handling munitions and stores on combat aircraft and munition handling equipment. Next generation equipment is planned to replace MHU-226, MHU-110, and MHU-141 trailers with nuclear certified equipment.
  5. The acquisition strategy for the Next Gen Jammer is to work with industry partners to design, fabricate, and test a prototype jammer with a footprint of a nuclear certified 3K-class jammer with a the ability to handle the workload of a 7K-class jammer.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / Nuclear Weapons Support	<b>Project (Number/Name)</b> 655708 / Nuclear Weapons Support
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contract Award - Aerial Stores Lift Truck (Sm/Med Class) (SALT & EMOLT)	RO	AFRL/MilTech : Bozeman, MT	-	0.800	Mar 2023	0.500	Mar 2024	-		-		-	0.000	1.300	-
Contract Award - Aerial Stores Lift Truck (Large Class) (MHU-TSX/M)	RO	Square One Corp. : Jackson Hole, WY	-	-		-		0.445	Oct 2024	-		0.445	0.000	0.445	-
Contract Award - Munitions Handling Trailers (MCT)	RO	AFRL/MilTech : Bozeman, MT	-	-		0.452	Nov 2023	0.445	Oct 2024	-		0.445	Continuing	Continuing	-
Contract Award - Next Gen Jammer 3/7K Class	TBD	TBD : TBD	-	-		-		0.611	Oct 2024	-		0.611	Continuing	Continuing	-
<b>Subtotal</b>			-	0.800		0.952		1.501		-		1.501	Continuing	Continuing	N/A

**Remarks**  
Aerial Stores Lift Truck (Large Class) (MHU-TSX/M) was funded in FY22. Activities continued through FY23-24; however, funding not needed in FY23-24. Further funding required in FY25.

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Contractor Support	PO	PE Systems, Inc. : TBD	-	0.676	Mar 2023	1.115	Mar 2024	0.500	Mar 2025	-		0.500	Continuing	Continuing	-
<b>Subtotal</b>			-	0.676		1.115		0.500		-		0.500	Continuing	Continuing	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	1.476	2.067	2.001	-	2.001	Continuing	Continuing	N/A

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 655708 / <i>Nuclear Weapons Support</i>
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
<b><i>Nuclear Enterprise Support Equipment</i></b>																												
Small Agile Lift Truck (SALT)																												
Electric Manually Operated Lift Truck (EMOLT)																												
Large Nuclear Munitions Truck (LNMT) TSX																												
Multi-capable Trailer (MCT)																												
Next Gen Jammer 3/7K Class																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604222F / <i>Nuclear Weapons Support</i>	<b>Project (Number/Name)</b> 655708 / <i>Nuclear Weapons Support</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Nuclear Enterprise Support Equipment</i></b>				
Small Agile Lift Truck (SALT)	3	2023	4	2025
Electric Manually Operated Lift Truck (EMOLT)	3	2023	4	2025
Large Nuclear Munitions Truck (LNMT) TSX	1	2023	3	2026
Multi-capable Trailer (MCT)	1	2024	4	2027
Next Gen Jammer 3/7K Class	1	2025	4	2028

**Note**

Aerial Stores Lift Truck (Large Class) (MHU-TSX/M) was funded in FY22. Activities continued through FY23-24; however, funding not needed in FY23-24. Further funding required in FY25.

The projects within the Weapons Generation Facility program target workflow and operation of current and future nuclear-certified systems.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	8.352	13.804	19.264	0.000	19.264	19.721	20.105	60.235	133.002	Continuing	Continuing
653891: <i>Adv Infrared Counter Measures(Aircm)</i>	-	8.352	13.804	19.264	0.000	19.264	19.721	20.105	60.235	125.394	Continuing	Continuing
658462: <i>Airborne Electronic Attack*</i>	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.608	Continuing	Continuing

\*This project's R-2a exhibit has been suppressed due to funding not beginning until after FY 2025

**A. Mission Description and Budget Item Justification**

"653891: The Advanced Infrared Countermeasure (AIRCМ) project contains related aircraft self-protection efforts aimed at increasing aircraft survivability against the increasing threat of sophisticated surface-to-air and air-to-air missiles. These missiles may employ sophisticated next-generation Electro-Optics (EO), Infrared (IR), Radio Frequency (RF), dual-mode (i.e. IR and RF), or multi-mode seekers. AIRCM will provide advanced expendable countermeasures and/or techniques that will be functionally compatible with existing dispenser systems and employed across multiple USAF weapons systems. This also includes any and all flare, chaff, decoy, and associated component development and testing that may be demanded or needed in current and future operations regardless of aircraft platform. Similar activities that are supplementary to this effort may be accomplished ad hoc using platform specific funding or through other activities such as joint services or NATO test groups."

Funding increased in FY25 due to change in focus from defeating Counter Violent Extremist Organization relevant threats to closing capability gaps to defeat latest National Defense Strategy top priority threat systems.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831 F, 0605832F, 0605833F, 0605898F, 0606398F. FY25 0.00 is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	7.222	13.804	18.230	0.000	18.230
Current President's Budget	8.352	13.804	19.264	0.000	19.264
Total Adjustments	1.130	0.000	1.034	0.000	1.034
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	1.392	0.000			
• SBIR/STTR Transfer	-0.262	0.000			
• Other Adjustments	0.000	0.000	1.034	0.000	1.034

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 653891: *Adv Infrared Counter Measures(Aircm)*

Congressional Add: *Ultra-Wideband Receiver (UWR) for Radar Jammer*

Congressional Add Subtotals for Project: 653891

Congressional Add Totals for all Projects

	<b>FY 2023</b>	<b>FY 2024</b>
	5.000	0.000
Congressional Add Subtotals for Project: 653891	5.000	0.000
Congressional Add Totals for all Projects	5.000	0.000

**Change Summary Explanation**

FY2023: Reprogramming, \$1.397M -- Transfer of available funds to support the USAF overall increased investment in the AIRCM program.

FY2025: \$1.000M increase to support activities in both Cognitive Electromagnetic Warfare and Electromagnetic Battle Management to continue/complete Material Solution work.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>				<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
653891: <i>Adv Infrared Counter Measures(Aircm)</i>	-	8.352	13.804	19.264	0.000	19.264	19.721	20.105	60.235	125.394	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

"The Advanced Infrared Countermeasure (AIRCМ) project improves aircraft self-protection against the increasing threat of sophisticated surface-to-air and air-to-air missiles. Countermeasure improvements are the result of multiple related activities. First, enhanced understanding of advanced threats derived from intelligence and Threat Acquisition and Exploitation. Countermeasure Modeling and Simulation creates updated threat models, countermeasure models, and aircraft models. Modeling and Simulation is then used to digitally evaluate new techniques and products for improved effectiveness against current and emerging threat systems. Countermeasure Development yields new devices and capabilities aimed to defeat advanced threats. Countermeasure Testing collects data for updated digital models as well as tests devices and techniques to determine effectiveness. The project also provides for modernization and enhancement of tools and capabilities needed to perform Threat Acquisition and Exploitation, Countermeasure Modeling and Simulation, Countermeasure Development, and Countermeasure Testing. The project also evaluates novel countermeasure devices and techniques for potential significant capability gains against threats."

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Countermeasure Development and Testing	3.352	3.304	0.000
<b>Description:</b> Development, testing and qualification of EO, IR, and RF countermeasures (CM) on aircraft.			
Note: This thrust area is being discontinued in FY2025. Current efforts are being continued, at higher levels of funding, in the CM Development, CM Testing, and CM Modeling and Simulation thrust areas, where they can be more fully described and better justified.			
<b>FY 2024 Plans:</b> FY 2024 Plans: Activities include development, testing and qualification of expendable countermeasures or cocktails on various aircraft.			
<b>FY 2025 Plans:</b> N/A			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 funding decreased because the thrust area will not be continued in FY 2025 and beyond. Effort continues in Countermeasure Development and Countermeasure Testing.			
<b>Title:</b> Threat Acquisition & Exploitation	0.000	0.500	1.250

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Threat Acquisition &amp; Exploitation will be a continuing project including intelligence monitoring of threat developments, acquisition of foreign threat systems, development of threat system surrogates, exploitation of threat systems and support to digital threat model development. The funding ensures focus on threats of interest to the AIRCM program and provides the level of analysis needed to discover potential countermeasure solutions. Investment will grow capacity to acquire and exploit multiple systems simultaneously reducing time to deliver countermeasure capabilities.</p> <p><b>FY 2024 Plans:</b> New start investment for the AIRCM program in Threat Acquisition &amp; Exploitation activities.</p> <p><b>FY 2025 Plans:</b> Invest in surrogate threat system development, ramp up investment &amp; capacity for threat exploitation activities through Air Force Research Laboratory.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 funding increased because of a multi-year capacity ramp up enabling comprehensive exploitation of multiple systems concurrently. This is part of the USAF overall increased investment in the AIRCM program.</p>			
<p><b>Title:</b> Countermeasure Development</p> <p><b>Description:</b> All aspects of research, design, development, prototyping, and production of test assets for new countermeasures leading to fielding of new countermeasure capabilities. May also include development of advanced manufacturing methods and capabilities.</p> <p>Note: This is not a new start in FY25. This thrust area continues efforts previously conducted under the Countermeasure Development and Testing</p> <p><b>FY 2024 Plans:</b> N/A</p> <p><b>FY 2025 Plans:</b> Invest in maturing Army DEVCOM alternative pyrophoric material, begin investment in lower cost training flare device, fund rapid prototyping and development activities. This support previously funded under the Countermeasure Development and Testing major thrust area.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 funding increased because of the USAF overall increased investment in the AIRCM program.</p>	0.000	0.000	2.270
<p><b>Title:</b> Countermeasure Testing</p>	0.000	0.000	3.212

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Funds all aspects of countermeasures testing. May include flight test, ground based testing, test instrumentation availability and operation, data collection and data reduction, updates and modernization of test assets to meet changing needs as driven by updates to threat systems. Investment will enable routine test events to reduce timeline from updated countermeasure recommendations to test and validation of performance. The increased funding levels will reduce timeline to deliver countermeasures capabilities.</p> <p>Note: This is not an FY25 new start. This thrust area continues efforts previously conducted under the Countermeasure Development and Testing</p> <p><b>FY 2024 Plans:</b> N/A</p> <p><b>FY 2025 Plans:</b> Funding will support conduct of a test event in FY25. Begins work on a pneumatic countermeasure sled track to shorten timelines and costs to test developmental items. Supports investment begun by USN Crane on a digital static track system. This is a lower cost to operate system recording precise position information for flares and aircraft in flight. This data is vital to flare digital model development and current systems for recording this information are cost prohibitive to sustain and operate. This support previously funded under the Countermeasure Development and Testing major thrust area.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 funding increased because of the USAF overall increased investment in the AIRCM program.</p>			
<p><b>Title:</b> Countermeasure Modeling and Simulation</p> <p><b>Description:</b> Funds operation of countermeasure modeling and simulation, development of recommended advanced countermeasure solutions, in lab testing and support of field testing, data collection and data analysis from test events. Also funds continued advancement of modeling &amp; simulation capabilities including advancing software, digital models, and IT infrastructure required to operate. Investment will grow modeling and simulation capacity, reducing time to deliver countermeasure capabilities.</p> <p>Note: This thrust area continues efforts previously conducted under the Countermeasure Development and Testing thrust area being discontinued in FY2025.</p> <p><b>FY 2024 Plans:</b> N/A</p> <p><b>FY 2025 Plans:</b></p>	0.000	0.000	1.510

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Continue ongoing efforts funding Air Force Research Laboratory Dynamic Infrared Missile Evaluation (DIME) Laboratory, Air Force Life Cycle Management Center, Georgia Tech Research Institute (GTRI), and Navy Infrared Countermeasures Effectiveness Laboratory (NICEL) for modeling & simulation of Infrared and Radio Frequency guided missiles. This support previously funded under the Countermeasure Development and Testing major thrust area.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 funding increased because of the USAF overall increased investment in the AIRCM program.				
<b>Title:</b> Electromagnetic Battle Management (EMBM)  <b>Description:</b> Perform assessments and analyses for an Air Force capability to provide electromagnetic spectrum situational awareness, decision support, and command and control - linked by common architectures, standards, and data - to enable planning, coordination, and synchronization of electromagnetic spectrum operations (EMSO) across the range of military operations.  <b>FY 2024 Plans:</b> Perform an Analysis of Alternatives.  <b>FY 2025 Plans:</b> Perform preparation activities for development of program Acquisition Strategy development.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased in FY25 with the addition of Program Management dollars to finish Material Solution work and prep for Milestone A decision.		0.000	5.000	5.511
<b>Title:</b> Cognitive Electromagnetic Warfare (EW)  <b>Description:</b> Perform assessments and analyses for an Air Force capability to defend from and attack an adversaries' use of the electromagnetic spectrum (EMS) assisted by incorporation of machine learning/artificial intelligence algorithms into aircraft EW systems, and share Cog EW algorithms, techniques, and identification/targeting criteria to the joint warfighting force.  <b>FY 2024 Plans:</b> Perform pre-program of record activities to include assessments and analyses of current AF EW systems ability to incorporate Cog EW capabilities into existing EW system architectures.  <b>FY 2025 Plans:</b>		0.000	5.000	5.511

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Perform pre-program of record activities to include assessments and analyses of current AF EW systems ability to incorporate Cog EW capabilities into existing EW system architectures and identify requirements strategy.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased in FY25 with the addition of Program Management dollars to continue Material Solution work and start the Capabilities Based Analysis prior to the Material Development Decision.			
<b>Accomplishments/Planned Programs Subtotals</b>	3.352	13.804	19.264

	FY 2023	FY 2024
<b><i>Congressional Add:</i></b> Ultra-Wideband Receiver (UWR) for Radar Jammer	5.000	0.000
<b><i>FY 2023 Accomplishments:</i></b> Developed a direction-finding enhancement for the ultra-wideband receiver (UWR). The enhanced UWR system will perform real-time streaming containing UWR detection details, to include frequency, coarse pulse train and scan pattern details, and direction. Deliverables will include appropriate requirements, design, test specifications and product drawings.		
<b><i>FY 2024 Plans:</i></b> N/A		
<b>Congressional Adds Subtotals</b>	5.000	0.000

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PAAF 01 356010: <i>Flares</i>	130.548	79.786	99.769	-	99.769	102.665	99.752	86.441	88.155	Continuing	Continuing

**Remarks**  
Qualified flares, if not in AF inventory, will be procured under program 0208030F War Reserve Munitions, Flares.

**D. Acquisition Strategy**

Various acquisition approaches will be used. Government organic capabilities will be utilized to the greatest practicable extent to include threat acquisition and exploitation, modeling and simulation, testing, and development work. Portions of the program will be executed via Other Transactional Authorities which facilitate collaborative Government, Industry, and Academic ordnance technology development and prototyping initiatives. Other portions may be contracted via the Eglin Wide Agile Acquisition Contract, a multi-year indefinite delivery, indefinite quantity contract supporting munitions research, development, prototyping, and production.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>
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<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
IR/UV: Black Body Thrusted Flare	C/CPFF	Cornerstone OTA : TBD, TN	-	1.222	Jan 2023	-		-		-		-	Continuing	Continuing	-
Next Generation Ultra-Wide Band Receiver (UWR)	TBD	TBD : Warner Robins AFB, GA	-	4.898	Apr 2023	-		-		-		-	Continuing	Continuing	-
Pyrophoric Alternative Material	MIPR	DEVCOM AC : Picatinny Arsenal, NJ	-	-		0.500	Jan 2024	0.800	Jan 2025	-		0.800	Continuing	Continuing	-
High Frequency Chaff	TBD	TBD : TBD	-	-		0.350	Mar 2024	-		-		-	Continuing	Continuing	-
IR Advanced Countermeasure Prototyping and Design	Various	Various : TBD	-	-		0.500	May 2024	1.470	Jan 2025	-		1.470	Continuing	Continuing	-
Cognitive Electromagnetic Warfare (EW)	Various	Air Combat Command : Langley AFB, VA	-	-		5.000	Oct 2023	5.511	Oct 2024	-		5.511	Continuing	Continuing	-
Electromagnetic Battle Management (EMBM)	Various	Air Combat Command : Langley AFB, VA	-	-		5.000	Oct 2023	5.511	Oct 2024	-		5.511	Continuing	Continuing	-
<b>Subtotal</b>			-	6.120		11.350		13.292		-		13.292	Continuing	Continuing	N/A

**Remarks**  
 Develop Advanced Expendable Countermeasures to defeat currently fielded threats from which aircraft are not sufficiently protected.  
 Perform assessments and analyses of proposed electromagnetic warfare (EW) capabilities.

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
A&AS Support	C/FFP	EPASS: Hill AFB : UT	-	-		0.200	Feb 2024	0.000	Feb 2025	-		0.000	Continuing	Continuing	-
Flare Road Map Tech Support	C/FFP	DTIC: GTRI : GA	-	0.708	Nov 2023	-		-		-		-	Continuing	Continuing	-
Travel	Various	Not specified. : TBD	-	-		0.025		0.000	Nov 2024	-		0.000	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	0.708		0.225		0.000		-		0.000	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Modeling and Simulation	MIPR	Air Force Research Lab : WPAFB, OH	-	1.422	Aug 2023	-		-		-		-	Continuing	Continuing	-
Threat and Acquisition Exploitation	MIPR	Multiple : TBD	-	-		0.500	Feb 2024	1.267	Dec 2024	-		1.267	Continuing	Continuing	-
IR Modeling and Simulation	MIPR	Various : TBD	-	-		1.729	Dec 2023	1.510	Dec 2024	-		1.510	Continuing	Continuing	-
Subsonic Sled Track for Countermeasure Development	MIPR	Navy Crane : Camp Atturbury, IN	-	-		-		0.000	Jan 2025	-		0.000	Continuing	Continuing	-
Digital Static Track System	MIPR	Navy Crane : Crane, IN	-	-		-		0.000	Dec 2024	-		0.000	Continuing	Continuing	-
RF Modeling & Simulation	MIPR	Various : TBD	-	-		-		0.000	Dec 2024	-		0.000	Continuing	Continuing	-
Test Event	MIPR	Various : TBD	-	-		-		3.195	Dec 2024	-		3.195	Continuing	Continuing	-
<b>Subtotal</b>			-	1.422		2.229		5.972		-		5.972	Continuing	Continuing	N/A

**Remarks**

Threat Acquisition and Exploitation

- Effort will utilize several approaches to acquire threat systems, fund exploitation efforts and digital model development
- Fund expenditure timelines are unpredictable for threat acquisition, dependant on opportunity

Pyrophoric Alternative Material

- Continues development of DEVCOM AC alternative pyrophoric material
- Work to be done to optimize IR output
- Potential alternative to environmentally unfriendly material produced by sole source vendor
- Future of current sole source vendor is uncertain

IR Advanced Countermeasure Prototyping & Design

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<ul style="list-style-type: none"> <li>- Will fund design and prototype countermeasures for test and evaluation</li> <li>- Anticipate supporting concurrent efforts through multiple acquisition approaches</li> </ul> <p>IR Modeling &amp; Simulation</p> <ul style="list-style-type: none"> <li>- This entails performance of modeling and simulation (to include hardware in the loop) which helps to predict advanced expendable countermeasure effectiveness and develop and define Air Force Requirements</li> <li>- Performing activity varies; conducted by AFRL, Georgia Tech Research Institute, US Navy NICEL Lab, Guided Weapons Evaluation Facility at Eglin AFB and others</li> <li>- Funds updates and modernization of software and hardware necessary to keep modeling and simulation capability current to advanced threat systems</li> </ul> <p>RF Modeling &amp; Simulation</p> <ul style="list-style-type: none"> <li>- Funds modeling and simulation to determine effectiveness of expendable countermeasure against radar guided threat systems</li> </ul> <p>Subsonic Sled Track for Countermeasure Development</p> <ul style="list-style-type: none"> <li>- Funds design and installation of a pneumatic powered test track to be utilized in countermeasure development and lot acceptance testing</li> <li>- Current methods require flight testing which is expensive and drives schedule delays</li> <li>- Will mirror a design successfully operating in the United Kingdom</li> </ul> <p>Digital Static Track System</p> <ul style="list-style-type: none"> <li>- Precise countermeasure trajectories is critical in model development</li> <li>- Current systems for measuring trajectories are only available at limited ranges, are expensive to operate, and in some cases are being eliminated due to cost and limited use</li> <li>- Digital Static Track System will provide a portable and lower cost system optimized for trajectory capture of flare countermeasures</li> </ul> <p>Test Support</p> <ul style="list-style-type: none"> <li>- This includes but is not limited to Seeker Test Vans (multiple vans required for Captive Seeker), duo chrome camera, and other test equipment</li> <li>- Activities/support during testing (i.e. communications/electric/security)</li> <li>- Performing Activity &amp; Location should remain "Various: TBD", multiple activities are included</li> </ul>															

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Support Costs (formerly Program Management Administration costs) -- UWR	Various	AFMC AFLCMC : Robins AFB, GA	-	0.102	Feb 2023	-		-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	0.102		-		-		-		-	Continuing	Continuing	N/A

**Remarks**  
AATC provides all the management, preparation and coordination of advanced expendable countermeasure testing efforts for ACC/CAF (this does not include support for AMC or AFSOC)

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	8.352	13.804	19.264	-	19.264	Continuing	Continuing	N/A

**Remarks**



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604270F / <i>Electronic Warfare Development</i>	<b>Project (Number/Name)</b> 653891 / <i>Adv Infrared Counter Measures(Aircm)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Advance IR Aircm</i></b>				
IR/UV: Black Body Thrusted Flare	4	2023	2	2024
Modeling and Simulation	1	2023	1	2024
Threat Acquisition & Exploitation	1	2024	4	2029
Pyrophoric Alternative Material	2	2024	3	2028
High Frequency Chaff	1	2024	2	2025
IR Advanced Countermeasure Prototyping and Design	2	2024	4	2029
IR Modeling and Simulation	1	2024	4	2029
Subsonic Sled Track for Countermeasure Development	2	2025	4	2027
Digital Static Track System	2	2025	3	2027
RF Modeling & Simulation	2	2024	4	2029
Test Event	1	2025	4	2029
<b><i>Wideband Receiver for Radar Jammer</i></b>				
Next Generation Wide Band Receiver	1	2023	4	2028
<b><i>Cognitive Electromagnetic Warfare (EW)</i></b>				
Cognitive Electromagnetic Warfare (EW)	1	2024	4	2029
<b><i>Electromagnetic Battle Management (EMBM)</i></b>				
Electromagnetic Battle Management (EMBM)	1	2024	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	120.186	74.023	78.480	0.000	78.480	85.439	137.907	94.451	96.210	Continuing	Continuing
655050: <i>TDL System Integration</i>	-	120.186	74.023	78.480	0.000	78.480	85.439	137.905	94.449	96.208	Continuing	Continuing
655262: <i>Family of Gateways*</i>	-	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.002	Continuing	Continuing

\*This project's R-2a exhibit has been suppressed due to funding not beginning until after FY 2025

**Note**

N/A

**A. Mission Description and Budget Item Justification**

Air Force operations rely on secure communications capability for Command-and-Control messages, threat messages, target updates, etc. Adversaries continually attempt to detect, intercept, decrypt, defeat, disrupt, deny or degrade these communications capabilities--driving the Air Force to continuously upgrade its systems with enhanced encryption, increased technology for low probability of detection (LPD), low probability of interception (LPI), anti-jamming (AJ), increased security and performance engineering, and enhanced throughput and interoperability. These efforts ensure life-saving data can be transmitted before, during and after operations without adversary hostile intervention via secure and reliable communication paths. The communications paths utilized are often referred to as datalinks over which are transmitted messages via specific waveforms through radios, multi-function processors and affiliated and associated technologies in accordance with specifications and standards.

The Tactical Data Networks Enterprise (TDNE) program element analyzes and evaluates requirements, designs, develops, enhances, and fields prospective or needed systems. The TDNE focuses on the research, analysis, design, development, test, evaluation and fielding or other capability development of Tactical Datalink (TDL), gateway, radio, multi-function processor, antenna, multi-function aperture, license, waveform and other associated equipment, technology or capabilities. TDNE develops, enhances and fields technologies, architectures, documentation, tactics, techniques, procedures and capabilities. These efforts enhance Air Force communications capacity, efficiency, affordability, integration and optimization. TDNE supports interoperability of Air Force to: Air Force, Joint, Coalition, and NATO (Allied), and other partner platforms and systems; supports releasability engineering, cyber engineering, digital engineering, encryption and safety compliance, et al.

Tactical Data Links (TDL) System Integration provides for the study, analysis, enhancement, development, integration, demonstration, joint/coalition/NATO interoperability exercises, costing, test, trials, and evaluation of TDL as a subset of the broader aerial layer network. Products include interoperability standards and reports, waveform standards, and hardware/software technical solutions. The number of Air Force platforms hosting TDLs has expanded from C2 aircraft to the fighter, bomber, intelligence, surveillance, and reconnaissance (ISR), tanker, airlift and other tactical fleets as well as precision guided munitions. Utilization of TDLs in joint and international environments requires the integration of terminals into host platforms and interoperability of TDL networks across all deployed joint/Coalition/NATO platforms. USAF mandates require additional studies and analysis to meet frequency reprogramming and cryptographic requirements. To deliver TDL capabilities to required platforms and users, Tactical Data Links (TDL) System Integration is broken into four main thrusts of Tactical Data Links and Gateways (TDL&G) Integration, Advanced Aerial Communication Technology (AACT), the Common Tactical Edge Network (CTEN) program (which evolved from and includes prior Agile Communications efforts), and Second-Generation Anti-Jam Tactical UHF Radio for NATO (SATURN) activities.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	
<p>Tactical Data Links and Gateways (TDL&amp;G) Integration activities consist of TDL integration and waveform management to ensure host platforms and users have current TDL waveforms, network access, and interoperability. This includes enabling and supporting Joint Interoperability of Tactical Command and Control Systems (JINTACCS), joint/Coalition/NATO Interoperability, Link 16 enhancements, cybersecurity and performance testing, requirements analysis and fleet roadmapping efforts. In addition to integration efforts for new and existing TDLs, these activities require funding for test units and facilities, interoperability management systems, and assessment tools to implement waveform standards to meet system information exchange requirements.</p> <p>Advanced Aerial Communication Technology (AACT) activities consist of developing and demonstrating new technologies to enable host platforms and users. This includes but is not limited to the development of capabilities to reduce the effects of advanced jamming in Anti-Access/Area Denial environments and increase communications resiliency for platforms and users. Technical solutions developed under this effort include, but are not limited to, Protected Tactical Waveform (PTW), Small Form Factor (SFF)/Digitally Assisted Close Air Support (DACAS), SPOC and Link 16 Enhancements.</p> <p>The Common Tactical Edge Network (CTEN) program evolved from and incorporates prior Agile Communications efforts to enhance interoperability. It includes the capability to share tactically significant information within/to/from highly contested environments in support of the Air Superiority 2030 Flight Plan. It supports the application of open standards and advanced apertures over an Enterprise-wide Aerial Network, enabling all platforms to share combat-relevant data/info to, from and within the Highly Contested Environment (HCE). The CTEN program is primarily a software (SW) overlay network that routes data within and between permissive, contested, and highly contested environments through content routing to establish connections between heterogeneous networks across different media and domains. CTEN is considered a core enabling program for the DAF Battle Network and is a key enabler of the Advanced Battle Management System (ABMS). The CTEN efforts include the prior classified and unclassified Agile Communications efforts, along with their interoperability with affiliated cross-Service and Joint capabilities and efforts such as the Joint Tactical Edge Network (JTEN).</p> <p>Second-Generation Anti-Jam Tactical UHF Radio for NATO (SATURN) activities consist of executing the Waveform Sponsor role for SATURN as well supporting Headquarters Air Force in its Lead Service role for SATURN. Each role consists of several distinct engineering and development responsibilities, to include, but not limited to leading and overseeing the development, refinement, updating, and US interoperability of the SATURN Waveform and its associated development efforts such as, for example, the SATURN Enhanced Data Rate (SEDR) program.</p> <p>Family of Gateways provides for the study (acquisitions current and proposed), analysis, enhancement, development, integration, costing, demonstration, test, and evaluation efforts that will allow joint combat forces to exchange information quickly and accurately by bridging discrete airborne, terrestrial, maritime, and space-based C4ISR networks producing operational effects not possible within individual networks. Gateway functions include enabling interoperability between data formats, protocols, and communication mediums. Additionally, gateway functions extend the connectivity range, consolidate data from multiple networks into high-capacity links for transmission to key C2ISR nodes, route information between disadvantaged users, and fuse/correlate data from multiple sources to improve accuracy. Gateway functions also provide application hosting, shared data storage, on-demand information access, smart data forwarding, and system monitoring and network management. Family of Gateways will support to enhance existing TDL performance, through upgrades and engineering analysis of system designs.</p>		

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>
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This program element may include necessary civilian pay expenses required to support, manage, execute, and deliver weapon system capabilities across the BACN platforms, aerial network, and tactical data network enterprise. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023, 0.900M was expended for civilian pay expenses in this program element. In FY2024, 1.272M is forecasted for civilian pay expenses in this program element.

FY 2023 includes 0 thousand in Overseas Operations Costs (OOC) Actuals. FY 2024 includes 1,792 in OOC Requested. FY 2025 includes 1,831 for the OOC Budget Estimate. OOC were financed previously with former Overseas Contingency Operations (OCO) funding.

Fiscal Year (FY) 2025 Overseas Operations Costs funding accounted for in the Base budget total 1,831.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	129.941	74.023	74.432	0.000	74.432
Current President's Budget	120.186	74.023	78.480	0.000	78.480
Total Adjustments	-9.755	0.000	4.048	0.000	4.048
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-6.000	0.000			
• SBIR/STTR Transfer	-3.755	0.000			
• Other Adjustments	0.000	0.000	4.048	0.000	4.048

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 655050: *TDL System Integration*

Congressional Add: *Software Programmable Open Mission System (OMS) Compliant (SPOC)*

Congressional Add Subtotals for Project: 655050

Congressional Add Totals for all Projects

	<b>FY 2023</b>	<b>FY 2024</b>
Congressional Add: <i>Software Programmable Open Mission System (OMS) Compliant (SPOC)</i>	6.806	0.000
Congressional Add Subtotals for Project: 655050	6.806	0.000
Congressional Add Totals for all Projects	6.806	0.000

**Change Summary Explanation**

FY2025:

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>
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- PB increase from previous PB due to addition of SATURN enhanced data rate (SEDR) requirement into SATURN's waveform performance, increased program support costs, increased test costs, and inflation.

FY2023:

- KC-135 Advanced Intel Gateway has been reprogrammed out of PE 0604281F -6M to PE 0401218F.
- SBIR -3.755M

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>				<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
655050: <i>TDL System Integration</i>	-	120.186	74.023	78.480	0.000	78.480	85.439	137.905	94.449	96.208	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Tactical Data Networks Enterprise (TDNE) program element analyzes and evaluates requirements, designs, develops, enhances, and fields prospective or needed systems. The TDNE focuses on the research, analysis, design, development, test, evaluation and fielding or other capability development of Tactical Datalink (TDL), gateway, radio, multi-function processor, antenna, multi-function aperture, license, waveform and other associated equipment, technology or capabilities. TDNE develops, enhances and fields technologies, architectures, documentation, tactics, techniques, procedures and capabilities. These efforts enhance Air Force communications capacity, efficiency, affordability, integration and optimization. TDNE supports interoperability of Air Force to: Air Force, Joint, Coalition, and NATO (Allied), and other partner platforms and systems; supports releasability engineering, cyber engineering, digital engineering, encryption and safety compliance, et al.

Tactical Data Links (TDL) System Integration provides for the study, analysis, enhancement, development, integration, demonstration, joint/coalition/NATO interoperability exercises, costing, test, trials, and evaluation of TDL as a subset of the broader aerial layer network. Products include interoperability standards and reports, waveform standards, and hardware/software technical solutions. The number of Air Force platforms hosting TDLs has expanded from C2 aircraft to the fighter, bomber, intelligence, surveillance, and reconnaissance (ISR), tanker, airlift and other tactical fleets as well as precision guided munitions. Utilization of TDLs in joint and international environments requires the integration of terminals into host platforms and interoperability of TDL networks across all deployed joint/Coalition/NATO platforms. USAF mandates require additional studies and analysis to meet frequency reprogramming and cryptographic requirements. To deliver TDL capabilities to required platforms and users, Tactical Data Links (TDL) System Integration is broken into four main thrusts of Tactical Data Links and Gateways (TDL&G) Integration, Advanced Aerial Communication Technology (AACT), the Common Tactical Edge Network (CTEN) program (which evolved from and includes prior Agile Communications efforts), and Second-Generation Anti-Jam Tactical UHF Radio for NATO (SATURN) activities.

Tactical Data Links and Gateways (TDL&G) Integration activities consist of TDL integration and waveform management to ensure host platforms and users have current TDL waveforms, network access, and interoperability. This includes enabling and supporting Joint Interoperability of Tactical Command and Control Systems (JINTACCS), joint/Coalition/NATO Interoperability, Link 16 enhancements, cybersecurity and performance testing, requirements analysis and fleet roadmapping efforts. In addition to integration efforts for new and existing TDLs, these activities require funding for test units and facilities, interoperability management systems, and assessment tools to implement waveform standards to meet system information exchange requirements.

Advanced Aerial Communication Technology (AACT) activities consist of developing and demonstrating new technologies to enable host platforms and users. This includes but is not limited to the development of capabilities to reduce the effects of advanced jamming in Anti-Access/Area Denial environments and increase communications resiliency for platforms and users. Technical solutions developed under this effort include, but are not limited to, Protected Tactical Waveform (PTW), Small Form Factor (SFF)/Digitally Assisted Close Air Support (DACAS), Software Programmable Open Mission System (OMS) Compliant (SPOC) radio and Link 16 Enhancements.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>
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The Common Tactical Edge Network (CTEN) program evolved from and incorporates prior Agile Communications efforts to enhance interoperability. It includes the capability to share tactically significant information within/to/from highly contested environments in support of the Air Superiority 2030 Flight Plan. It supports the application of open standards & advanced apertures over an Enterprise-wide Aerial Network, enabling all platforms to share combat-relevant data/info to, from and within the Highly Contested Environment (HCE). The CTEN program is primarily a software (SW) overlay network that routes data within and between permissive, contested, and highly contested environments through content routing to establish connections between heterogeneous networks across different media and domains. CTEN is considered a core enabling program for the DAF Battle Network and is a key enabler of the Advanced Battle Management System (ABMS). The CTEN efforts include the prior classified and unclassified Agile Communications efforts, along with their interoperability with affiliated cross-Service and Joint capabilities and efforts such as the Joint Tactical Edge Network (JTEN).

Second-Generation Anti-Jam Tactical UHF Radio for NATO (SATURN) activities consist of executing both the Waveform Sponsor role for SATURN as well supporting Headquarters Air Force in its Lead Service role for SATURN. Each role consists of several distinct engineering and development responsibilities, to include, but not limited to leading and overseeing the development, refinement, updating, and US interoperability of the SATURN Waveform and its associated development efforts such as, for example, the SATURN Enhanced Data Rate (SEDR) program.

This program element may include necessary civilian pay expenses required to support, manage, execute, and deliver weapon system capabilities across platforms, aerial network, and tactical data network enterprise. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023, 0.900M was expended for civilian pay expenses in this program element. In FY2024, 1.272M is forecasted for civilian pay expenses in this program element.

FY 2023 includes 0 thousand in Overseas Operations Costs (OOC) Actuals. FY 2024 includes \$1,792 in OOC Requested. FY 2025 includes \$1,831 for the OOC Budget Estimate. OOC were financed previously with former Overseas Contingency Operations (OCO) funding.

Fiscal Year (FY) 2025 Overseas Operations Costs funding accounted for in the Base budget total \$1,831.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<p><b>Title:</b> Tactical Data Links and Gateways (TDL&amp;G) Integration</p> <p><b>Description:</b> TDL&amp;G Integration activities include but are not limited to, Data Link Test Facility (DTF), Air Force Participating Test Unit (AFPTU), Network Centric Capability Assessment (NCCA), Joint/Coalition/NATO Interoperability, Analysis of Alternatives (AoA) follow-on, gateway planning as well as Joint Interoperability of Tactical Command and Control Systems (JINTACCS) ensures interoperability of TDL systems with associated joint, allied, and Coalition systems.</p> <p>It includes configuration management of TDL Military Standards (MIL-STDs), TDL message development, interoperability test/certification, and TDL message standard implementation using interoperable System Management and Requirements Transformation (iSMART) for Link 16, Link 22, Intra-flight Data Link (IFDL), Multifunction Advanced Data Link (MADL), and others.</p>	26.169	23.139	23.429

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Efforts also include AFPTU will purchase hardware and software in support for testing Link 16 updates made by contractors and MAJCOMs to ensure they are in compliance with MIL STD 6016, the Link 16 specification.</p> <p>JINTACCS reviews changes requested to the MIL STD Link16 specification to support various MAJCOM and coalition engagements that present new changes to the specification or changes to the message formats along with other documentation that could also impact the specification. Requirement analysis includes engagements with contractors and Federally Funding R&amp;D Centers (FFRDC) regarding future capabilities/initiatives by conducting studies and analysis that will then feed into future requirements and capabilities.</p> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>-Manage the development, certification, training and logistics plans for individual TDL implementations to Joint/ allied standards.</li> <li>-Provide the necessary engineering, technical, and administrative support required to add and/or update Air Force platform and system information exchange requirements.</li> <li>-Ensure compatibility and interoperability of TDLs by funding required Air Force/joint MIL-STD compliance and interoperability tests.</li> <li>-Ensure compatibility and interoperability of TDLs by developing TDL messaging capability to address new or updated operational requirements.</li> </ul> <p><b>FY 2025 Plans:</b></p> <ul style="list-style-type: none"> <li>-Will continue to manage the development, certification, training and logistics plans for individual TDL implementations to Joint/ allied standards.</li> <li>-Will continue to provide the necessary engineering, technical, and administrative support required to add and/or update Air Force platform and system information exchange requirements.</li> <li>-Will continue to ensure compatibility and interoperability of TDLs by funding required Air Force/joint MIL-STD compliance and interoperability tests.</li> <li>-Will continue to ensure compatibility and interoperability of TDLs by developing TDL messaging capability to address new or updated operational requirements</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 increased due to estimated program support costs, testing costs and inflationary increases across TDN Integration efforts.</p> <p><b>Title:</b> High Capacity Backbone (HCB)</p> <p><b>Description:</b> High Capacity Backbone (HCB) is an expeditionary dynamic network made up of aerial and ground nodes that augment existing communication networks to greatly increase connectivity, network capacity, and information sharing at all</p>			
	7.522	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>security levels in order to effectively employ military capability across the range of military operations. HCB reduces joint forces reliance on limited, relatively fixed/static satellite and surface line-of-sight communication components.</p> <p>HCB rapid prototyping is a demonstration of HCB network transport installed in existing USAF aircraft and deployable ground entry points that meets this Rapid Prototyping Requirements Document's threshold technical and functional requirements while operating as an integral part of an aerial layer network in a realistic operational environment. HCB capabilities are required to close four specific capability gaps: network connectivity, network capacity, share information and data, and network management.</p> <p><b>FY 2024 Plans:</b> No FY2024 funding.</p> <p><b>FY 2025 Plans:</b> -HCB contract was terminated in April 2023. No further activities planned.</p>				
<p><b>Title:</b> Advanced Aerial Communication Technology (AACT)</p> <p><b>Description:</b> The AACT effort is not new, but a regrouping of prior efforts and evolving similar activities. It includes all technology developments efforts required to enhance the execution of combat in contested and highly contested environments. It includes areas of prior investment such as the Protected Tactical Waveform (PTW), the Small Form Factor Efforts (SFF), the Software Programmable Open Mission Systems (OMS) Compliant (SPOC) multi-function processor (MFP), and other similar activities such as new MFP development, or incorporation or integration of advanced communications technology efforts. Protected Tactical Waveform (PTW) is a waveform designed to mitigate the effects of advanced jamming in Anti- Access/Area Denial environments, and prior efforts included the HAAM-R and BiFrost projects.</p> <p>Small Form Factor (SFF) efforts support the development and demonstration of Small Form Factor (SFF) technologies that can support Digitally Assisted Close Air Support (DACAS) and other missions across the full spectrum of operating environments. This effort considers System-of-Systems (SoS) engineering, technical analysis/performance, platform integration, and Tactics, Techniques, and Procedures (TTPs) to best utilize technologies and acquisition approaches for enterprise modernization. SFF Phase II (TURTLE) is a rapid prototyping and demonstration effort.</p> <p>Link 16 Enhancements develop and field Link 16 Anti Jam (AJ) capabilities on 4th and 5th generation platforms to address Link 16 jamming threats in the contested and highly contested environments. This effort implements Link 16 technologies into TDL terminals and investigates integration of additional baseline(s) to efficiently execute development and enhancements. Emerging technologies are developed and evaluated for efficacy; recommendations are identified for appropriate terminal fielding/upgrades to platforms and will be considered when evaluating enterprise TDL capabilities/gaps.</p>		32.354	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Early development of Software Programmable Open mission system Compliant (SPOC) radio was completed within Link 16 Enhancements efforts. An FY23 Congressional Add for this effort is geared to integrating and testing new waveforms and pursuing platform integration.</p> <p><b>FY 2024 Plans:</b> No FY2024 funding requested.</p> <p><b>FY 2025 Plans:</b> No FY2025 funding requested.</p>				
<p><b>Title:</b> Agile Comms - Common Tactical Edge Network (CTEN)</p> <p><b>Description:</b> Agile Comms supports the application of open standards, multi-function processors, and advanced apertures over an Enterprise-wide Aerial Network, enabling all platforms to share combat-relevant data/info to, from and within the Highly Contested Environment (HCE) regardless of the data link and messages format that they are operating on, to include supporting the development of airborne gateways. Agile Comms also supports initial integration of advanced communications and networking capabilities onto tactically-relevant aircraft. Finally, this effort supports planning, data collection, development and analysis for initial technology maturation experimentation campaign.</p> <p>Common Tactical Edge Network (CTEN) effort within Agile Comms addresses unique challenges of DoD networks by using content routing to establish connections between heterogeneous networks across different media and domains. It is a software (SW) overlay network that routes data within and between permissive, contested, and highly contested environments. CTEN is being developed for integration on various platforms, allowing the flexibility to support various missions, to meet the needs of the DoD Network in the future. The effort will also continue to support message translation and extensible markup languages (XMLs) development. Additional work will continue to support advanced non proprietary antenna apertures supporting various missions. Work will continue in the study/analysis of a ATDL waveform to meet the needs of the modern warfighter.</p> <p><b>FY 2024 Plans:</b> -Continue to develop and demonstrate the Common Tactical Edge Network (CTEN) Minimum Viable Product (MVP) through release of MVP 1.0 and MVP 2.0. -Continue the development of the software architecture and support advanced non-proprietary antenna apertures necessary to mature the Enterprise Approach to the Joint Aerial Network and deliver reference architecture for use in follow-on CTEN Software Development and Integration.</p>		47.335	49.094	49.309

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>-Begin development of enterprise waveforms capabilities in direct support of connect the quad initiative to include the study/analysis of associated waveforms to meet the needs of the modern/future warfighters.</p> <p><b>FY 2025 Plans:</b></p> <p>-Will continue to develop and demonstrate the Common Tactical Edge Network (CTEN) Minimum Viable Product (MVP) through release of MVP 3.0.</p> <p>-Will complete systems architecting and continue to support advanced non proprietary antenna apertures necessary to mature the Enterprise Approach to the Joint Aerial Network.</p> <p>-Will continue development of enterprise waveforms capabilities in direct support of connect the quad initiative to include the study/analysis of associated waveforms to meet the needs of the modern/future warfighters.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p> <p>FY2025 funding increase due to minor inflationary impacts.</p>				
<p><b>Title:</b> Second Generation Anti-Jam Tactical UHF Radio for NATO (SATURN)</p> <p><b>Description:</b> SATURN is a fast frequency hopping waveform that was developed as a replacement for the Have Quick waveform. The upgrade to SATURN will provide an improved radio resistant to jamming through fast frequency hopping and digital modulation techniques.</p> <p><b>FY 2024 Plans:</b></p> <p>-Continue to update the waveform specification complying with NATO STANAG and testing utilizing the Reference Implementation Lab (RIL).</p> <p><b>FY 2025 Plans:</b></p> <p>-Will continue to update the waveform specification complying with NATO STANAG and testing utilizing the Reference Implementation Lab (RIL).</p> <p>-Will perform SEDR analysis and evaluation activities to enable porting SEDR on Air-to-Air and Air-to-Ground radios to incorporate text/data capability.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p> <p>-FY2025 increase due to integration of SATURN enhanced data rate (SEDR) with SATURN's waveform performance standard to incorporate text/data capability and efforts to port SEDR on Air-to-Air &amp; Ground-to-Air Radios.</p>		-	1.790	5.742
<b>Accomplishments/Planned Programs Subtotals</b>		113.380	74.023	78.480
		<b>FY 2023</b>	<b>FY 2024</b>	
<b>Congressional Add:</b> Software Programmable Open Mission System (OMS) Compliant (SPOC)		6.806	0.000	

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>
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	<b>FY 2023</b>	<b>FY 2024</b>
<p><b>FY 2023 Accomplishments:</b> -Completed development and demonstration of the two prototypes. -Began Phase 2 to update the SPOC radio to meet cryptological, environmental and airworthiness compliance.</p> <p><b>FY 2024 Plans:</b> -Develop and port two classified waveforms onto the SPOC radio for the F-35 using Service-requested realignment of funds. -Develop and port a classified, government-owned waveform onto SPOC using both FY23 congressional funds and FY24 Service-requested realignment of funds; expecting FY24 internal DAF reprogramming of \$5M and \$6.5M congressional add.</p>		
<b>Congressional Adds Subtotals</b>	6.806	0.000

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>	
• RDTE 07 PE	1.616	0.000	0.000	-	0.000	-	-	-	-	-	Continuing	Continuing
0207448F: <i>C2ISR TDL</i>												
• APAF 05 Line Item F01500: <i>F-15</i>	21.310	0.000	-	-	-	-	-	-	-	-	Continuing	Continuing
• APAF 05 Line Item F01600: <i>F-16</i>	8.851	0.000	-	-	-	-	-	-	-	-	Continuing	Continuing
• APAF 05 Line Item B00200: <i>B-2A</i>	0.213	0.216	0.221	-	0.221	-	-	-	-	-	Continuing	Continuing
• APAF 05 Line Item B01B00: <i>B-1B</i>	0.000	0.000	-	-	-	-	-	-	-	-	Continuing	Continuing
• OPAF 03 Line Item 834010:	1.731	36.164	0.815	-	0.815	-	-	-	-	-	Continuing	Continuing
<i>General Information Technology</i>												

**Remarks**

**D. Acquisition Strategy**

The Airborne Networking Directorate provides for common development, integration, and interoperability across the entire airborne network and ensures that data links are procured and maintained as a joint, end-to-end command and control system. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
TDL&G Integration	Various	Various : Various	-	11.451	May 2023	13.165	Jan 2024	9.526	Jan 2025	-		9.526	Continuing	Continuing	-
High Capacity Backbone (HCB)	C/TBD	Various : Various	-	7.522	Feb 2023	-		-		-		-	0.000	7.522	-
SATURN	C/Various	Not specified. : TBD	-	-		1.790	Mar 2024	5.742	Apr 2025	-		5.742	Continuing	Continuing	-
CTEN Agile Comms	Various	Various : Various	-	44.681	May 2023	46.424	Jan 2024	46.920	Jan 2025	-		46.920	Continuing	Continuing	-
AACT -SFF/DACAS Modernization and SoS Enterprise	Various	Various : Various	-	4.632	Feb 2023	-		-		-		-	0.000	4.632	-
AACT - Protected Tactical Waveform (PTW)	C/TBD	Not specified. : TBD	-	16.702	Oct 2023	-		-		-		-	0.000	16.702	-
AACT - Link 16 Enhancements	Various	Not specified. : TBD	-	11.020	Mar 2023	-		-		-		-	0.000	11.020	-
AACT -Software Programmable Open Mission System (OMS) Compliant (SPOC)	C/CPAF	Not specified. : TBD	-	6.806	Aug 2023	-		-		-		-	0.000	6.806	-
<b>Subtotal</b>			-	102.814		61.379		62.188		-		62.188	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
TDL&G Integration A&AS support	Various	Not specified. : TBD	-	6.819	May 2023	3.031	May 2024	3.773	Aug 2025	-		3.773	Continuing	Continuing	-
CTEN A&AS support	Various	Not specified. : TBD	-	2.654	Apr 2023	2.670	Apr 2024	2.389	Apr 2025	-		2.389	Continuing	Continuing	-
<b>Subtotal</b>			-	9.473		5.701		6.162		-		6.162	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b><i>Tactical Data Network Enterprise</i></b>																												
TDL&G Integration																												
AACT - SPOC																												
AACT - Protected Tactical Waveform (PTW)																												
CTEN Agile Comms																												
AACT - SFF/DACAS Modernization and SoS Enterprise Integration																												
SATURN																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604281F / <i>Tactical Data Networks Enterprise</i>	<b>Project (Number/Name)</b> 655050 / <i>TDL System Integration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Tactical Data Network Enterprise</i></b>				
TDL&G Integration	1	2023	4	2029
AACT - SPOC	1	2024	4	2025
AACT - Protected Tactical Waveform (PTW)	1	2023	4	2023
CTEN Agile Comms	1	2023	4	2029
AACT - SFF/DACAS Modernization and SoS Enterprise Integration	1	2023	4	2024
SATURN	1	2024	2	2027

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604287F / <i>Physical Security Equipment</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	6.664	10.605	10.569	0.000	10.569	11.082	11.309	11.718	11.950	Continuing	Continuing
655120: <i>Physical Security Equipment - SD ED</i>	-	6.664	10.605	10.569	0.000	10.569	11.082	11.309	11.718	11.950	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Physical Security Equipment (PSE) program provides for Air Force (AF) Integrated Base Defense Security Systems (IBDSS) improvements and enhancements, to include the demonstration and testing of PSE systems related to Force Protection. This program supports the protection of tactical, fixed, and nuclear weapons systems, AF personnel and AF facilities in the homeland and overseas. The PSE program includes spectrum planning for radio frequency (RF), communication security (cyber), information assurance requirements, integration and interoperability Command Control & Communication (C3) platform & components and Tactical Sensor System to support the Force Protection implementation of expeditionary/AFFORGEN concept. This Program Element also includes funding for Force Protection Commercial Off the Shelf equipment, market research, evaluation and testing. Force Protection programs are inherently subject to rapid changes in the operational environment and will retain sufficient program flexibility to meet changes in location, scope and capability in order to protect AF people, facilities and warfighting assets. The Defender Multi-Domain Command, Control and Communications (DMDC3) is an initiative developing the foundational structure of IBDSS to provide a platform that integrates the computing power, the means of communication, and the tools for situational awareness. PSE efforts support Modular Open Source Architecture (MOSA) standards to enable faster installations and greater interoperability to address the Chief of Staff of the AF 'Fight the Base' goals.

IBDSS FY25 developmental efforts will continue to evaluate and test state-of-the-art technology to support integrated based defense systems installations worldwide, continue to improve and integrate COTS efforts into IBDSS physical security equipment, and further develop, integrate and test Defender Multi-Domain Command, Control and Communications (DMDC3) software applications. IBDSS-3 expands upon and scales IBDSS modernization efforts first developed under IBDSS-2. Capability improvements include zero-trust architecture, Machine Language (ML)/Artificial Intelligence (AI) integration, expanded sensor capabilities, Unmanned Aerial System(UAS)/Unmanned Ground Vehicle (UGV) integration, and improved mobile C3.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$1.324M forecasted for civilian pay expenses in this program element, and in FY24 \$1.515M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604287F / <i>Physical Security Equipment</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	6.897	10.605	10.551	0.000	10.551
Current President's Budget	6.664	10.605	10.569	0.000	10.569
Total Adjustments	-0.233	0.000	0.018	0.000	0.018
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.233	0.000			
• Other Adjustments	0.000	0.000	0.018	0.000	0.018

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> IBDSS-3	6.664	10.605	10.569
<b>Description:</b> IBDSS-3 (Integrated Base Defense Security Systems) qualifies, demonstrates, and tests Physical Security Equipment (PSE) systems to include Force Protection.			
<b>FY 2024 Plans:</b> - Conduct market research, evaluation and testing to address capability gaps and obsolescence to include, but not limited to Force Protection Commercial Off The Shelf (COTS). - Integrate and test to qualify COTS equipment to provide essential upgrades/improvements and state-of-the-art technology to support integrated based security systems installations worldwide. - Integration and/or modification of COTS efforts to improve IBDSS physical security equipment. - Conduct integration and testing of DMDC3 software applications from either COTS suppliers or modified COTS systems. - Integration of DMDC3 with external systems in order to meet Advanced Battle Management System/Joint All Domain Command and Control (ABMS/JADC2) directive. - Expand upon and scales IBDSS modernization efforts first developed under IBDSS-2 to include, but not limited to, zero-trust architecture, ML/AI integration, expanded sensor capabilities, UAS/UGV integration, and improved mobile C3. - Conduct market research, testing and evaluation of COTS equipment to support Security Force's Tactical Sensor System (TSS) in support of AFFORGEN implementation.			
<b>FY 2025 Plans:</b> -Will continue to conduct market research, evaluation and testing to address capability gaps and obsolescence to include, but not limited to Force Protection COTS.			

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604287F / <i>Physical Security Equipment</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
-Will continue further integration and testing to qualify COTS equipment to provide essential upgrades/improvements and state-of-the-art technology to support integrated based security systems installations worldwide. -Will continue with the integration and/or modification of COTS efforts to improve IBDSS physical security equipment. -Will continue further integration and testing of Defender Multi-Domain Command, Control and Communications (DMDC3) software applications from either COTS suppliers or modified COTS systems. -Will continue integration of DMDC3 with external systems in order to meet ABMS/JADC2 directive. - Will continue to expand upon and scales IBDSS modernization efforts first developed under IBDSS-2 to include, but not limited to, zero-trust architecture, ML/AI integration, expanded sensor capabilities, UAS/UGV integration, and improved mobile C3. - Will continue market research, testing and evaluation of COTS equipment to expand the Security Force's Tactical Sensor System (TSS) in support of AFFORGEN implementation.  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 program funding decreased by \$0.036M due to decreased TSS requirements.			
<b>Accomplishments/Planned Programs Subtotals</b>	6.664	10.605	10.569

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 03 834130: <i>Air Force Physical Security System</i>	49.842	83.628	124.852	-	124.852	104.847	71.821	73.217	74.664	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

Air Force Security Force Center (AFSFC) and Force Protection program office investigates requirements to include new and/or obsolete items. COTS sub-systems, equipment and components are competitively acquired from industry after thorough market research. Equipment for testing is purchased via competitive selection processes via direct purchase orders. For security systems COTS that are required to be qualified for nuclear security environments where industry COTS sources may not be mature, consideration is given to replacement of new items or COTS modification through the competitive selection procedure as well.

Delivery Orders on Indefinite Delivery/Indefinite Quantity contract vehicles or other approved purchase methods are utilized to acquire equipment.

The Force Protection program office is developing new capabilities, updating existing capabilities, exploring and fielding COTS capabilities, using both a Middle Tier of Acquisition program and other transactional authorities.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	PE 0604287F / <i>Physical Security Equipment</i>

Notional strategy to deploy DMDC3 and IBDSS of the future by integrating COTS equipment, such as Lenel, Hirsch, and Genetic equipment, with Vindicator and Advantor IDS systems through a single software solution at various bases to establish a single common operating picture for the Defender community.

Supports MOSA standards to enable faster installations and greater interoperability to enable Chief of Staff of the Air Force 'Fight the Base' goals.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)						Project (Number/Name)					
3600 / 5				PE 0604287F / Physical Security Equipment						655120 / Physical Security Equipment - SD ED					
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Base Defense Security Systems (IBDSS-3)	Various	Various : Various	-	3.610	Dec 2022	4.324	Apr 2024	4.324	Mar 2025	-		4.324	Continuing	Continuing	-
<b>Subtotal</b>			-	3.610		4.324		4.324		-		4.324	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Base Defense Security Systems (IBDSS-3)	Various	Various : Various	-	1.554	Jul 2023	2.000	Jun 2024	2.221	May 2025	-		2.221	Continuing	Continuing	-
<b>Subtotal</b>			-	1.554		2.000		2.221		-		2.221	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Base Defense Security Systems (IBDSS-3)	Various	Various : Various	-	1.500	Dec 2022	4.281	Mar 2024	4.024	Apr 2025	-		4.024	Continuing	Continuing	-
<b>Subtotal</b>			-	1.500		4.281		4.024		-		4.024	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	6.664		10.605		10.569		-		10.569	Continuing	Continuing	N/A
<b>Remarks</b>															
Various delivery orders will be awarded throughout the fiscal year for numerous projects.															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604287F / <i>Physical Security Equipment</i>	<b>Project (Number/Name)</b> 655120 / <i>Physical Security Equipment - SD ED</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>FY23 Events</b>	
Integrated Base Defense Security Systems (IBDSS-3)	
<b>FY24 Events</b>	
Integrated Base Defense Security Systems (IBDSS-3)	
<b>FY25 Events</b>	
Integrated Base Defense Security Systems (IBDSS-3)	
<b>FY26 Events</b>	
Integrated Base Defense Security Systems (IBDSS-4)	
<b>FY27 Events</b>	
Integrated Base Defense Security Systems (IBDSS-4)	
<b>FY28 Events</b>	
Integrated Base Defense Security Systems (IBDSS-4)	
<b>FY29 Events</b>	
Integrated Base Defense Security Systems (IBDSS-5)	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604287F / <i>Physical Security Equipment</i>	<b>Project (Number/Name)</b> 655120 / <i>Physical Security Equipment - SD ED</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>FY23 Events</i></b>				
Integrated Base Defense Security Systems (IBDSS-3)	1	2023	4	2024
<b><i>FY24 Events</i></b>				
Integrated Base Defense Security Systems (IBDSS-3)	1	2024	4	2025
<b><i>FY25 Events</i></b>				
Integrated Base Defense Security Systems (IBDSS-3)	1	2025	4	2026
<b><i>FY26 Events</i></b>				
Integrated Base Defense Security Systems (IBDSS-4)	1	2026	4	2027
<b><i>FY27 Events</i></b>				
Integrated Base Defense Security Systems (IBDSS-4)	1	2027	4	2028
<b><i>FY28 Events</i></b>				
Integrated Base Defense Security Systems (IBDSS-4)	1	2028	4	2029
<b><i>FY29 Events</i></b>				
Integrated Base Defense Security Systems (IBDSS-5)	1	2029	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604336F / <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Prototyping</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	39.079	0.000	39.079	57.114	91.187	71.147	94.187	0.000	352.714
653360: <i>Prototyping</i>	-	0.000	0.000	39.079	0.000	39.079	57.114	91.187	71.147	94.187	0.000	352.714
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

This program, BA 5, PE 0604336F, project 653360, Air-delivered Nuclear Delivery System (NDS-A), is a new start.

**A. Mission Description and Budget Item Justification**

The Air-delivered Nuclear Delivery System (NDS-A) is a new start project to address a capability gap identified in the 2022 Nuclear Posture Review (NPR). A congressionally directed study based on the NPR led to endorsement of the Deputy's Management Action Group (DMAG) and initiation of this project. The Air Force will work with the Department of Energy's (DOE) National Nuclear Security Administration (NNSA) and its National Laboratories to develop a prototype NDS-A system to demonstrate the capability to close this gap in the near term. Development of the prototype will include contractors outside the traditional NNSA production agencies to produce developmental hardware and avoid impacting nuclear warhead programs of record (POR). The project will require close USAF/DOE interagency coordination to produce a prototype that will enable rapid transition to a fielded system.

Early development will include Model and Simulation (M&S) analysis of several nuclear explosive package (NEP) options to refine the proposed NEP. The NDS-A system must meet nuclear weapon environmental standards from storage to weapon detonation, while meeting reliability and target defeat requirements. The USAF will provide test resources to include ground test facilities, F-15E test aircraft, and B-2 test aircraft, and will work with the aircraft Program Offices to identify aircraft integration requirements including any potential Operational Flight Program (OFP) software and hardware changes. USAF will procure and provide NNSA with components necessary to produce Environmental Test Units (ETUs) to capture the basic environments the NEP will be exposed to, as well as Joint Test Assets (JTAs) for high fidelity ground and air tests. Ground tests may include wind tunnel, static ejection, vibration and thermal, cable pull-down, and sled tests. Flight tests will be performed by USAF F-15E developmental flight test aircraft, with final prototype demonstrations flown on B-2 aircraft. Considerations in the development of the prototype will include nuclear surety, maintenance and logistics, refinement of requirements (military characteristics), and producibility.

After successful flight test demonstration of the prototype, the program will mature developmental hardware to nuclear system "diamond stamp" quality, ensure nuclear surety standards are met, and mature aircraft interfaces including Aircraft Monitor and Control (AMAC) functions.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)	<b>R-1 Program Element (Number/Name)</b> PE 0604336F I Hard and Deeply Buried Target Defeat System (HDBTDS) Prototyping
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	39.079	0.000	39.079
Total Adjustments	0.000	0.000	39.079	0.000	39.079
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	39.079	0.000	39.079

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Air-delivered Nuclear Delivery System (NDS-A)	-	-	39.079
<b>Description:</b> Develop and demonstrate prototype air-delivered nuclear system to meet 2022 Nuclear Posture Review Objective 4 capability. Interagency project with USAF and DOE/NNSA/National Laboratories.			
<b>FY 2025 Plans:</b> Conduct Modeling and Simulation (M&S) analysis of several nuclear explosive package options to refine proposed design. Design and procure components to build environmental test units and initiate ground tests. Design and procure components for joint test assemblies, to prepare for assembly in FY 2026. Initiate aircraft integration required to begin flight testing in FY 2026.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> This effort is a new start			
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	39.079

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604336F / <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Prototyping</i>	<b>Project (Number/Name)</b> 653360 / <i>Prototyping</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Exterior Components	C/CPFF	AFLCMC/EB Eglin : TBD	-	-		-		4.600	Apr 2025	-		4.600	Continuing	Continuing	-
Design & Build Environmental Test Units	MIPR	NNSA/SNL/LANL : TBD	-	-		-		3.500	Apr 2025	-		3.500	Continuing	Continuing	-
Design and Build Joint Test Assemblies	MIPR	NNSA/SNL/LANL : TBD	-	-		-		7.079	Apr 2025	-		7.079	Continuing	Continuing	-
Aircraft Interface (Logical, Electrical and Mechanical)	Various	Various : TBD	-	-		-		4.000	Apr 2025	-		4.000	Continuing	Continuing	-
Fuze development	Various	Various : TBD	-	-		-		2.000	Apr 2025	-		2.000	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		21.179		-		21.179	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Requirements Definition	Various	AFNWC, KAFB : TBD	-	-		-		0.200		-		0.200	Continuing	Continuing	-
Interface Control Documentation	Various	AFNWC, KAFB : TBD	-	-		-		0.200		-		0.200	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.400		-		0.400	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Static Ejection Testing	Various	Various, Eglin AFB : TBD	-	-		-		2.000		-		2.000	Continuing	Continuing	-
Mechanical Bench Tests	MIPR	NNSA/SNL/LANL : TBD	-	-		-		3.000		-		3.000	Continuing	Continuing	-
Electrical Bench Tests	MIPR	NNSA/SNL/LANL : TBD	-	-		-		3.000		-		3.000	Continuing	Continuing	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604336F / <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Prototyping</i>	<b>Project (Number/Name)</b> 653360 / <i>Prototyping</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>M&amp;S and Prototype Design</i></b>	
M&S of mission effectiveness of design space options	██████████
Design of Environmental Test Units (ETU)	██████████
Design of Joint Test Assemblies (JTA)	██████████
<b><i>Component Hardware Development, Procurement, and Assembly</i></b>	
Procurement of USAF components	████████████████████
Development of NNSA components	████████████████████
Subsystem assembly	████████████████████
<b><i>Prototype Integration and Ground Tests</i></b>	
ETU integration and assembly	████████████████████
JTA integration and assembly	████████████████████
ETU ground tests	████████████████████
JTA ground tests	████████████████████
<b><i>Developmental Flight Tests</i></b>	
F-15E flight tests	████████████████████
B-2 flight tests	██████████
<b><i>Development of Production Quality Components</i></b>	
Development of production quality components	████████████████████

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604336F / <i>Hard and Deeply Buried Target Defeat System (HDBTDS) Prototyping</i>	<b>Project (Number/Name)</b> 653360 / <i>Prototyping</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>M&amp;S and Prototype Design</i></b>				
M&S of mission effectiveness of design space options	3	2025	4	2025
Design of Environmental Test Units (ETU)	3	2025	1	2026
Design of Joint Test Assemblies (JTA)	3	2025	3	2026
<b><i>Component Hardware Development, Procurement, and Assembly</i></b>				
Procurement of USAF components	3	2025	3	2027
Development of NNSA components	3	2025	3	2027
Subsystem assembly	1	2026	3	2027
<b><i>Prototype Integration and Ground Tests</i></b>				
ETU integration and assembly	1	2026	2	2027
JTA integration and assembly	3	2026	2	2027
ETU ground tests	3	2026	3	2027
JTA ground tests	1	2027	4	2027
<b><i>Developmental Flight Tests</i></b>				
F-15E flight tests	1	2027	3	2028
B-2 flight tests	4	2028	4	2028
<b><i>Development of Production Qualify Components</i></b>				
Development of production quality components	1	2028	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	6.120	5.918	7.157	0.000	7.157	7.338	7.488	7.759	7.912	Continuing	Continuing
653133: <i>Bombs &amp; Fuzes</i>	-	1.870	0.966	1.537	0.000	1.537	1.576	1.608	1.666	1.699	Continuing	Continuing
655361: <i>Stores-Aircraft Interface</i>	-	4.250	4.952	5.620	0.000	5.620	5.762	5.880	6.093	6.213	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The Armament Ordnance Development program provides for the initial and continuing development of weapons, munitions, and munitions equipment for aircraft integration, support, and operational use. This program develops, characterizes, and improves current, future, and legacy munitions, ammunitions, delivery systems, and subsystems.

653133: The Bombs & Fuzes project improves conventional weapons/munitions (kinetic and non-kinetic), fuzes, and height-of-burst sensors (HOBS), and develops and integrates complementary common weapon components, data links, position, navigation, and timing (PNT) capabilities (i.e. GPS, non-GPS, optical, passive, active, etc.) using modern acquisition best practices, to include digital acquisition practices (e.g. government-owned open system architectures, Model Based Systems Engineering (MBSE) and agile software development). It also provides for the development and testing necessary for a suitable manufacturing base of conventional warheads, fuzes, HOBS, and munitions material handling equipment (MMHE). Bombs & Fuzes also provides research, development, testing, and guidance of conventional warheads, fuzing, HOBS modifications, and anti-personnel anti-materiel (APAM) weapons to improve lethality and survivability against area, mobile, hard and deeply buried, and fixed targets. Finally, this project provides an opportunity to quickly insert emerging technologies into existing and developing aircraft munitions and fuzes and supports strategic planning to achieve compliance of AF munitions with Department of Defense insensitive munitions (IM) standards.

Leverages common component development, in collaboration with other weapon systems, to reduce redundant costs between systems with similar subsystems requirements. Invests in analytical, information management, data management, digital environments, networks, facilities, and security infrastructure upgrades directly supporting development and sustainment of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions.

655361: The Stores-Aircraft Interface project is home to the Universal Armament Interface (UAI). UAI is the Air Force's common standard aircraft/weapon interface and is an acquisition requirement, to be used by all weapons and combat aircraft as practicable. The UAI program continues development and maintenance of the standardized interface including mission planning components. Users include Air Force, Army, Navy, and Foreign Military Sales (FMS) customers. The UAI program office is also responsible for development, enhancement, and maintenance of the standard to support coalition, allied, and joint interoperability efforts for weapons-platform interface. These responsibilities include acquisition, upgrade, repair, and provision of UAI certification tools, and implementation support to US Air Force, Army, Navy, and allied aircraft and weapons systems. UAI provides cost/schedule savings over traditional integration efforts. This is accomplished by enabling integration of weapons independent of aircraft Operational Flight Programs (OFP) cycles. UAI incorporates complex info such as: power management, target info, waypoints, flight/trajectory profile, fusing, launch parameters, verification of data sent/received, sensor info, and propulsion profiles.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>
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This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY24 \$0 was expended for civilian pay expenses in this program element, and in FY25 \$0 is forecasted for civilian pay expenses in this program element.ery

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	5.279	5.918	7.144	0.000	7.144
Current President's Budget	6.120	5.918	7.157	0.000	7.157
Total Adjustments	0.841	0.000	0.013	0.000	0.013
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.179	0.000			
• Other Adjustments	1.020	0.000	0.013	0.000	0.013

**Change Summary Explanation**

No significant changes.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 653133 / <i>Bombs &amp; Fuzes</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
653133: <i>Bombs &amp; Fuzes</i>	-	1.870	0.966	1.537	0.000	1.537	1.576	1.608	1.666	1.699	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Bombs & Fuzes project improves conventional weapons/munitions (kinetic and non-kinetic), fuzes, and height-of-burst sensors (HOBS), and develops and integrates complementary common weapon components, data links, position, navigation, and timing (PNT) capabilities (i.e. GPS, non-GPS, optical, passive, active, etc.) using modern acquisition best practices, to include digital acquisition practices (e.g. government-owned open system architectures, Model Based Systems Engineering (MBSE) and agile software development). It also provides for the development and testing necessary for a suitable manufacturing base of conventional warheads, fuzes, HOBS, and munitions materiel handling equipment (MMHE). Bombs & Fuzes also provides research, development, testing, and guidance of conventional warheads, fuzing, HOBS modifications, and anti-personnel anti-materiel (APAM) weapons to improve lethality and survivability against area, mobile, hard and deeply buried, and fixed targets. Finally, this project provides an opportunity to quickly insert emerging technologies into existing and developing aircraft munitions and fuzes and supports strategic planning to achieve compliance of AF munitions with Department of Defense insensitive munitions (IM) standards.

- Munitions Materiel Handling Equipment (MMHE): MMHE is a continuing project to develop and improve the standardization and commonality of munitions handling and armament equipment to preclude duplication. Efforts are primarily the study, design, and development of MMHE and armament control systems; however, support may be provided to other functional areas as requested. Procurement will be performed and funded by the applicable weapons system project.

- Medium Caliber Ammunition project assesses, refines, and develops medium caliber ammunition, to include, but not limited to, conducting 25mm (F-35) qualification testing, comparative testing, and mitigating ammunition inventory health issues.

- Insensitive Munitions (IM) and Emerging Technologies: IM projects support AF IM strategic planning to achieve IM compliance IAW U.S. Code, Title 10, Subtitle A, Part N, Chapter 141, Section 2389, ensuring safety regarding insensitive munitions. IM models and validates current munition performance, integrates less sensitive explosive fills, addresses IM explosive fill deficiencies, and develops bomb case modifications to improve the response of conventional weapons to unplanned stimuli. This project also explores and develops IM and Energetics technology, assessing, analyzing, and evaluating emerging and developed technologies for future and existing weapon and fuze capabilities to improve lethality, accuracy, and reliability in accordance with the National Defense Strategy roadmap.

- DSU-43/B Cockpit-selectable Height-Of-Burst Sensor (C-HOBS): The C-HOBS will be a replacement for the current DSU-33D/B proximity sensor. C-HOBS will replace the single factory height-of-burst setting with the addition of multiple height-of-burst options selectable via both manual switches and a cockpit interface. These selection options allow flexibility during flight to address a wide array of targets. The C-HOBS is intended to interface with Combat Air Forces (CAF) aircraft and provide proximity height-of-burst functionality to general and special purpose weapons (to include NGAAWs).

Implements Digital Acquisition tenants of Open, Agile, and Digital; builds and establishes industrial base innovation around the program's enterprise for modularity and adaptability for the life cycle of the weapons system. Leverages common component development, in collaboration with other weapon systems, to reduce redundant

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 653133 / <i>Bombs &amp; Fuzes</i>
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costs between systems with similar subsystems requirements. Invests in analytical, information management, data management, digital environments, networks, facilities, and security infrastructure upgrades directly supporting development and sustainment of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions. Expands program office staff, facilities, and security infrastructure to support the required classification levels for this program's activities. Engages with DoD, DAF, and industry stakeholders to refine threat analysis, refine inventory requirements, and plan upgrade requirements. Capitalizes on and incorporates successful laboratory research and development efforts applicable to this program's capability.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY23 \$0.255M was expended for civilian pay expenses in this program element, and in FY24 \$0.255M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<p><b>Title:</b> Munitions Materiel Handling Equipment (MMHE)</p> <p><b>Description:</b> Armament Standardization/Control/Munitions Materiel Handling Equipment (MMHE) is a continuing project to develop and improve the standardization and commonality of munitions handling and armament equipment to preclude duplication. Efforts are primarily the study, design, and development of MMHE and armament control systems; however, support may be provided to other functional areas as requested. Procurement will be performed and funded by the applicable weapons system project.</p> <p><b>FY 2024 Plans:</b> Continuation of MMHE support projects to include engineering, drafting, proof load, technical data, and safety authorizations. Fabricate prototypes for test and evaluation purposes. Continue first article equipment fabrications for drafting verification and delivery to Air Force units for additional test and evaluation. Provide support to all system program offices with new weapons and aircraft configurations, as needed. Continue support to the F-35 with designs and manufacturing of equipment to aid safe munitions loading and handling of various pylons and adapters. Continue to support the B-21 program office with evaluations and recommendations for equipment to aid safe munitions loading and handling of various pylons and adapters. Continue support to DARPA with designs and manufacturing of equipment to aid safe munitions loading and handling of hypersonic weapons. Continue support for Air Force Research Laboratory on future munition concept demonstrators.</p> <p><b>FY 2025 Plans:</b> Continuation of MMHE support projects to include engineering, drafting, proof load, technical data, and safety authorizations. Fabricate prototypes for test and evaluation purposes. Continue first article equipment fabrications for drafting verification and delivery to Air Force units for additional test and evaluation. Provide support to all system program offices with new weapons and aircraft configurations, as needed. Continue support to the F-35 with designs and manufacturing of equipment to aid safe munitions loading and handling of various pylons and adapters. Continue to support the B-21 program office with evaluations and recommendations for equipment to aid safe munitions loading and handling of various pylons and adapters. Continue support</p>	1.350	0.777	1.191

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 653133 / <i>Bombs &amp; Fuzes</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>to DARPA with designs and manufacturing of equipment to aid safe munitions loading and handling of hypersonic weapons. Continue support for Air Force Research Laboratory on future munition concept demonstrators.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increase due to higher tempo and more requirements for aircraft configurations and continue support to the F-35 with designs and manufacturing of equipment.</p>				
<p><b>Title:</b> Medium Caliber Ammunition</p> <p><b>Description:</b> The Medium Caliber Ammunition efforts support the warfighter's medium caliber ammunition research, development, test, and evaluation (RDT&amp;E) requirements, DoN/USAF collaboration for the medium caliber family of ammunition, foreign comparative testing, inventory health challenges, procurement of ammunition, and other emerging technologies.</p> <p><b>FY 2024 Plans:</b> Continue to provide engineering and technical support for PGU-48/B rounds as well as further comparative testing/EMD of alternative products/sources. Assess and mitigate Medium Caliber ammunition inventory health challenges.</p> <p><b>FY 2025 Plans:</b> Continue to provide engineering and technical support for PGU-48/B rounds as well as further comparative testing/EMD of alternative products/sources. Assess and mitigate Medium Caliber ammunition inventory health challenges.</p>		0.020	0.100	0.100
<p><b>Title:</b> Insensitive Munitions (IM) and Emerging Technology</p> <p><b>Description:</b> Model and validate current munition performance; explore and develop IM and Energetics technology; assess, analyze, and evaluate emerging and developed technologies for future and existing weapon and fuze capabilities to improve lethality, accuracy, and reliability in accordance with the National Defense Strategy roadmap.</p> <p><b>FY 2024 Plans:</b> Continue to provide guidance to ensure munitions are as safe as practical to include; assessing, analyzing, and evaluating emerging and future development of technologies in our weapons. Enhance and evolve direct attack weapon capabilities by identifying new technology through collaboration with industry, academia, and other government stakeholders and uniting specialized expertise.</p> <p><b>FY 2025 Plans:</b> Continue to provide guidance to ensure munitions are as safe as practical to include; assessing, analyzing, and evaluating emerging and future development of technologies in our weapons. Enhance and evolve direct attack weapon capabilities</p>		0.500	0.089	0.246

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 653133 / <i>Bombs &amp; Fuzes</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
by identifying new technology through collaboration with industry, academia, and other government stakeholders and uniting specialized expertise.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increase due to increase in munitions in assessing, analyzing, and evaluating emerging and future development of technologies in our weapons.			
<b>Title:</b> Cockpit-Selectable Height-Of-Burst Sensor (C-HOBS)	0.000	0.000	0.000
<b>Description:</b> DSU-43/B Cockpit-selectable Height-Of-Burst Sensor (C-HOBS). The C-HOBS will be a replacement for the legacy DSU-33D/B proximity sensor. C-HOBS will replace the single factory height-of-burst setting with the addition of multiple height-of-burst options selectable via both manual switches and a cockpit interface. These selection options allow flexibility during flight to address a wide array of targets. The C-HOBS is intended to interface with the weapon via the cockpit and provide a cockpit-selectable proximity function for general and special purpose weapons (to include Next Generation Area Attack Weapons, NGAAWs).			
<b>FY 2024 Plans:</b> N/A			
<b>FY 2025 Plans:</b> N/A			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A			
<b>Accomplishments/Planned Programs Subtotals</b>	1.870	0.966	1.537

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• PAAF 01 Line Item 356120: <i>Fuzes</i>	102.918	109.562	131.887	-	131.887	136.801	134.126	157.635	160.761	Continuing	Continuing
• PAAF 01 Line Item 352010: <i>Cartridges</i>	117.064	101.104	122.794	-	122.794	127.070	124.716	122.198	124.634	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**  
- Fuzes (including C-HOBS) is a continuing effort with most activities performed through contracted services.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 653133 / <i>Bombs &amp; Fuzes</i>

- Munitions Materiel Handling Equipment (MMHE) project activities are performed in-house with limited technical and analysis contract support.
- Medium Caliber Ammunition project activities are performed in-house with technical and analysis contract support, organic government test support, and possible contracted services (small contracts).
- Insensitive Munitions project activities are performed in-house with limited technical and analysis contract support
- Emerging Technologies are innovative efforts with most activities performed through various contracted services such as OTA's and DOTC; a limited number of activities such as technical analysis and test are performed by organic resources and support contractors.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 653133 / <i>Bombs &amp; Fuzes</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Emerging Technology/IM	Various	Various : Eglin AFB, FL	-	-		0.021	Mar 2024	0.116	Mar 2025	-		0.116	Continuing	Continuing	-
MMHE - Prototypes	Various	Prototype Fabrication Shop : Eglin AFB, FL	-	0.987	Jan 2023	0.370	Jan 2024	0.753	Jan 2025	-		0.753	Continuing	Continuing	-
CHOBS - HW/SW	C/Various	Various : Eglin AFB, FL	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.987		0.391		0.869		-		0.869	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MMHE - Shipping/Supplies	Various	MMHE Program Office : Eglin AFB, FL	-	0.046	Nov 2022	0.050	Nov 2023	0.060	Nov 2024	-		0.060	Continuing	Continuing	-
DCA Civ Pay (653133)	Allot	AFLCMC/EBD : Eglin AFB, FL	-	0.020	Oct 2022	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.066		0.050		0.060		-		0.060	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CHOBS - Test and Evaluation	C/Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-
MMHE - Test Support	PO	96 TW : Eglin AFB, FL	-	0.025	Nov 2022	0.025	Nov 2023	0.025	Nov 2024	-		0.025	Continuing	Continuing	-
Emerging Technology - Test Wing	PO	96 TW : Eglin AFB, FL	-	0.060	Aug 2023	-		0.030	Nov 2024	-		0.030	Continuing	Continuing	-
NGAAW- Test and Evaluation	PO	96 TW : Eglin AFB, FL	-	-		-		-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / Armament/Ordnance Development	<b>Project (Number/Name)</b> 653133 / Bombs & Fuzes
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	0.085		0.025		0.055		-		0.055	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
IM and Emerging Technology- PMA	Various	Various : Eglin AFB, FL	-	0.365	Dec 2022	0.068	Dec 2023	0.100	Dec 2024	-		0.100	Continuing	Continuing	-
Medium Caliber - PMA	Various	Various : Eglin AFB, FL	-	0.050	Jun 2023	0.100	Jun 2024	0.100	Jun 2025	-		0.100	Continuing	Continuing	-
MMHE - PMA	Various	Various : Eglin AFB, FL	-	0.317	Mar 2023	0.332	Jan 2024	0.353	Jan 2025	-		0.353	Continuing	Continuing	-
CHOBS - PMA	Various	Various : Eglin AFB, FL	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.732		0.500		0.553		-		0.553	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		-	1.870	0.966	1.537	-	1.537	Continuing	Continuing	N/A

**Remarks**  
 Program Support Costs (PSC) Other Government Costs: Travel, Government Purchase Card (GPC), Program Support Personnel.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 653133 / <i>Bombs &amp; Fuzes</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Bombs and Fuzes</i></b>	
MMHE: design, prototype, test priority efforts	
IM and Emerging Technologies	
Medium Caliber Ammunition: Assess, refine, and develop	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 653133 / <i>Bombs &amp; Fuzes</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Bombs and Fuzes</i></b>				
MMHE: design, prototype, test priority efforts	1	2023	4	2029
IM and Emerging Technologies	1	2023	4	2029
Medium Caliber Ammunition: Assess, refine, and develop	1	2023	4	2029

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 655361 / <i>Stores-Aircraft Interface</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
655361: <i>Stores-Aircraft Interface</i>	-	4.250	4.952	5.620	0.000	5.620	5.762	5.880	6.093	6.213	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

655361: The Stores-Aircraft Interface project conducts stores-aircraft interface upgrades and standards development to include the Universal Armament Interface (UAI). UAI is the Air Force's standardized interface for aircraft weapons and mission planning, and its use is mandated by the Air Force acquisition process. The savings realized from this effort is on average 6 years of schedule and \$22M per aircraft/weapon combination. This is accomplished by enabling integration of weapons independent of aircraft Operational Flight Programs (OFP) cycles. UAI is currently implemented on the F-15E, F-16 Block 40/50 and European Participating Air Forces (EPAF) F-16 aircraft, F/A-18, MQ-9, Small Diameter Bomb (SDB) I and II, Joint Direct Attack Munition (JDAM)(all variants), Laser JDAM, Joint Air-to-Surface Stand-off Missile (JASSM), JASSM-Extended Range (JASSM-ER), Enhanced Paveway II, Joint Mission Planning System (JMPS), Combat Weapons Delivery Software (CWDS), and Precision Guided Munitions Planning Software (PGMPS). Planned implementations include Joint Strike Fighter (JSF/F-35), B-21, B-52, AC-130J, F-15EX, NGAD, CCA, Advanced Anti-Radiation Guided Missile - Extended Range (AARGM-ER), Stand-in Attack Weapon (SiAW), Long Range Anti-Ship Missile (LRASM), Grey Wolf, Select Precision Effects At Range Capability 3 (SPEAR3), Joint Strike Missile (JSM), Next-Generation Open Mission Services (NOMS) for mission planning. The UAI Program Office is responsible for development and enhancement of the UAI standard to maintain technical currency, support to coalition/allied/joint interoperability efforts for weapons-platform interface, provision of certification tools, and implementation support to aircraft and weapons. The Stores-Aircraft Interface funding also supports innovation activities to include studies, analyses, requirements definition, and quick-reaction capability prototypes/demonstrations to accelerate planning for technology transition, technology insertion and future acquisition programs.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program's funds would be in addition to the civilian pay expenses budgeted in program element 0605831F. In FY24 \$0 was expended for civilian pay expenses in this program element, and in FY25 \$0 is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b>Title:</b> Universal Armament Interface (UAI) Development	4.250	4.952	5.620
<b>Description:</b> Overall UAI will continue the development and maintenance of the Air Force's mandated aircraft/weapon interface, to include UAI Mission Planning and Launch Acceptability Region (LAR) components.			
Specific accomplishments so far for FY24: Published interface changes to support LRASM integration efforts. Anticipated accomplishments for FY24: SJICWG #26; platform-store interface updates to include jettison order index, ready to communicate time, retained test controls; mission planning software releases of the UAI Common Component to support NOMS transition and F-35 weapon integration flight test events.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 655361 / <i>Stores-Aircraft Interface</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b><i>FY 2024 Plans:</i></b> Continue development and fielding of UAI software improvements including updates to enhance and standardize geospatial zones implementation, Airspace Coordination Order File ingestion, smart carriage system interactions, Weapon Data Link updates, and incorporation of the Common Flexible Weapon (CFW) Interface. In addition, the program will continue to develop and field the Mission Planning UAI Common Component legacy and new capabilities for implementation in the Next-Generation Open Mission Services (NOMS) mission planning operating environment. Backward compatibility with the Joint Mission Planning System (JMPS) will be maintained. UAI updates will include continued development of the Launch Acceptability Region (LAR) tool-set required by weapon systems and mission planning developers as a common and standardized method for generating weapon performance truth data, engagement envelopes, training tools, and support of way-point flying munitions. These tools and their products will be incorporated in the Platform Store and Mission Planning ICDs and associated products. FY24 includes funding for ongoing air-to-ground integration support across USAF, USN, and Army customers, including development support for advanced carriage systems as store quantities and management capabilities increase, hypersonic weapons, network enabled weapons, and certification tool software updates. Support will continue for working groups, technical meetings and workshops, risk reduction assessments, common mission planning, and system-specific implementations of UAI. Maintenance and logistic support for existing certification tools to meet current and future user system integration lab test certification needs will continue. These tools are shared among aircraft and weapon programs to reduce time and cost for UAI integration efforts. UAI will continue to support international efforts including but not limited to Joint Strike Missile (JSM) and Select Precision Effects At Range - Capability 3 (SPEAR3), both of which are integrating on the F-35 using UAI Platform Store Interface Control Document Rev 05+.</p> <p><b><i>FY 2025 Plans:</i></b> Continue development and fielding of UAI software improvements including updates to enhance and standardize geospatial zones implementation, Airspace Coordination Order File ingestion, smart carriage system interactions, Weapon Data Link updates, and incorporation of the Common Flexible Weapon (CFW) Interface. The program will continue to develop and field the Mission Planning UAI Common Component legacy and new capabilities for implementation in the Next-Generation Open Mission Services (NOMS) mission planning operating environment. Backward compatibility with the Joint Mission Planning System (JMPS) will continue to be maintained. UAI updates will include continued development of the Launch Acceptability Region (LAR) toolset required by weapon systems and mission planning developers as a common and standardized method for generating weapon performance truth data, engagement envelopes, training tools, and support of waypoint flying munitions. These tools and their products will be incorporated in the Platform Store and Mission Planning ICDs and associated products. FY25 includes funding for ongoing air-to-ground integration support across USAF, USN, and Army customers, including development support for advanced carriage systems as store quantities and management capabilities increase, hypersonic weapons, network enabled weapons, and certification tool software updates. Support will continue for working groups, technical meetings and workshops, risk reduction assessments, common mission planning, and system-specific implementations of UAI. Maintenance and logistic support for existing certification tools to meet current and future user system integration lab test certification needs will continue.</p>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 655361 / <i>Stores-Aircraft Interface</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
These tools are shared among aircraft and weapon programs to reduce time and cost for UAI integration efforts. UAI will continue to support international efforts including but not limited to Joint Strike Missile (JSM) and Select Precision Effects At Range - Capability 3 (SPEAR3), both of which are integrating on the F-35 using UAI Platform Store Interface Control Document Rev 05+.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased because of inflation adjustments			
<b>Accomplishments/Planned Programs Subtotals</b>	4.250	4.952	5.620

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

Program Support Costs (PSC) Other Government Costs: Travel, Government Purchase Card (GPC), Program Support Personnel.

**D. Acquisition Strategy**

In December 2004, under the authority of a class Justification and Approval (J&A), the UAI program office awarded individual Cost Plus Fixed Fee (CPFF) contracts to Boeing, Lockheed Martin, Northrop Grumman, and Raytheon. Each Original Equipment Manufacturer is responsible for a different piece of the total UAI requirement based on its product-specific (platform/weapon) expertise. During FY10, the original contracts expired. Under the authority of a class J&A, Cost Plus Incentive Fee (CPIF) contracts were awarded to the four UAI vendors in August 2010. Follow-on period of performance was awarded in March 2014 for 16 months to better align future contract awards with funding through the Future Years Defense Program. The period of performance was extended to 1 November 2015 to allow immediate start of the effort on F-35/JSF request for changes. A new J&A was approved in January 2015 for the follow-on sole-source contracts to the original equipment manufacturers (OEMs). These new sole-source contracts were awarded in November 2015 and expired in November 2019. A new J&A was signed in December 2018, prior to contract expiration, and four new five-year sole-source contracts (CPFF) were awarded in November 2019. A new Justification and Approval (J&A) will be pursued to support award of follow-on sole-source contracts in November 2024 (1Q FY25). A Sources Sought for Market Research has been released with responses due mid-January 2024. Once evaluated, a new ASP will be presented with approval to act as the Acquisition Strategy and received approval for an RFP release pending a J&A response on the possibility of supporting a sole-source contract(s) in November 2024 (1Q FY25).

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / Armament/Ordnance Development	<b>Project (Number/Name)</b> 655361 / Stores-Aircraft Interface
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Interface Control Document (ICD) Development/Updates/Maintenance	SS/ Various	Boeing Northrop Grumman Lockheed Martin Raytheon : Various	-	3.918	Nov 2022	4.715	Nov 2023	5.351	Nov 2024	-		5.351	Continuing	Continuing	-
<b>Subtotal</b>			-	3.918		4.715		5.351		-		5.351	Continuing	Continuing	N/A

**Remarks**  
New 5 year Follow-on contract was awarded in November 2019.

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DCA Civ Pay (655361)	Allot	AFLCMC/WAX : Wright-Patterson AFB, OH	-	0.159	Oct 2022	0.000	Oct 2023	0.000	Oct 2024	-		0.000	Continuing	Continuing	-
<b>Subtotal</b>			-	0.159		0.000		0.000		-		0.000	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS Contractor Support	Various	Various : Various	-	0.145	Jun 2023	0.177	Jun 2024	0.200	Jun 2025	-		0.200	Continuing	Continuing	-
Program Office Travel	C/CPAF	Not specified : TBD	-	0.023		0.060		0.069		-		0.069	Continuing	Continuing	-
certification tool Shipping Cost	C/CPAF	Not specified : TBD	-	0.005		0.000		0.000		-		0.000	Continuing	Continuing	-
<b>Subtotal</b>			-	0.173		0.237		0.269		-		0.269	Continuing	Continuing	N/A

**Remarks**  
DCS/Sumaria Contractor provides support to the Program Office for financial services.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 655361 / <i>Stores-Aircraft Interface</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Stores-Aircraft Interface</b>																																						
Governance (Super Joint Interface Control Working Group)																																						
SJICWG Meeting - CY 2nd quarter 2023 Update																																						
SJICWG Meeting - CY 1st quarter 2024 Update																																						
SJICWG Meeting - CY 1st quarter 2025 Update																																						
SJICWG Meeting - CY 2nd quarter 2026 Update																																						
SJICWG Meeting - CY 2nd quarter 2027 Update																																						
SJICWG Meeting - CY 4th quarter 2027 Update																																						
SJICWG Meeting - CY 3rd quarter 2028 Update																																						
SJICWG Meeting - CY 1st quarter 2029 Update																																						
Platform-Store Interface Control Document (PS ICD) Change Notices 3rd quarter 2024																																						
Platform-Store Interface Control Document (PS ICD) Change Notices 1st quarter 2025																																						
Platform-Store Interface Control Document (PS ICD) Change Notices 4th quarter 2025																																						
Platform-Store Interface Control Document (PS ICD) Change Notices 2nd quarter 2026																																						



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 655361 / <i>Stores-Aircraft Interface</i>
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Common Flexible Weapon (CFW) Interface Control Document (ICD) Incorporation - 3rd quarter 2024							■																					
Common Flexible Weapon (CFW) Interface Control Document (ICD) Incorporation - 2nd quarter 2025											■																	
System Integration Lab (SIL) Certification Tool (CT) software	[REDACTED]																											
System Integration Lab (SIL) Certification Tool (CT) software 2nd quarter 2023 updates	■																											
System Integration Lab (SIL) Certification Tool (CT) software 4th quarter 2023 updates				■																								
System Integration Lab (SIL) Certification Tool (CT) software 2nd quarter 2024 updates							■																					
System Integration Lab (SIL) Certification Tool (CT) software 1st quarter 2025 updates											■																	
System Integration Lab (SIL) Certification Tool (CT) software 4th quarter 2025 updates												■																
System Integration Lab (SIL) Certification Tool (CT) software 2nd quarter 2026 updates															■													
System Integration Lab (SIL) Certification Tool (CT) software 1st quarter 2027 updates																■												
System Integration Lab (SIL) Certification Tool (CT) software 4th quarter 2027 updates																				■								
System Integration Lab (SIL) Certification Tool (CT) software 3rd quarter 2028 updates																								■				
System Integration Lab (SIL) Certification Tool (CT) software 2nd quarter 2029 updates																											■	

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / Armament/Ordnance Development	<b>Project (Number/Name)</b> 655361 / Stores-Aircraft Interface
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Mission Planning CT software 3rd quarter 2023 updates			■																									
Mission Planning CT software 1st quarter 2024 updates							■																					
Mission Planning CT software 1st quarter 2025 updates												■																
Mission Planning CT software 2nd quarter 2026 updates																■												
Mission Planning CT software 2nd quarter 2027 updates																												
Mission Planning CT software 3rd quarter 2028 updates																												
Mission Planning CT software 3rd quarter 2029 updates																												
UAI (Mission Planning) Common Component (CC)	[REDACTED]																											
CC software 4th quarter 2023 updates																												
CC software 3rd quarter 2024 updates																												
CC software 2nd quarter 2025 updates																												
CC software 2nd quarter 2026 updates																												
CC software 1st quarter 2027 updates																												
CC software 1st quarter 2028 updates																												
CC software 4th quarter 2028 updates																												
CC software 3rd quarter 2029 updates																												
Weapon Sustainment/Regression Efforts: JDAM, JASSM-ER, SDB I+II	[REDACTED]																											
A/C Sustainment/Regression Efforts: F-16 Blk 40/50, F-15E	[REDACTED]																											

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 655361 / <i>Stores-Aircraft Interface</i>
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Weapon Dev: SiAW, JSM, SPEAR3, LRASM, AARGM-ER, JAGM-F, hypersonics, advanced carriage systems, CFW, Grey Wolf																												
A/C Dev. F-16 Foreign Military Sales, F-35, B-21, B-1, A-10, F-22, F-18, MQ-9, F-15EX, MQ-IC, AC-130J, B-52																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 655361 / <i>Stores-Aircraft Interface</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Stores-Aircraft Interface</b>				
Governance (Super Joint Interface Control Working Group)	1	2023	4	2029
SJICWG Meeting - CY 2nd quarter 2023 Update	2	2023	2	2023
SJICWG Meeting - CY 1st quarter 2024 Update	1	2024	1	2024
SJICWG Meeting - CY 1st quarter 2025 Update	1	2025	1	2025
SJICWG Meeting - CY 2nd quarter 2026 Update	2	2026	2	2026
SJICWG Meeting - CY 2nd quarter 2027 Update	2	2027	2	2027
SJICWG Meeting - CY 4th quarter 2027 Update	4	2027	4	2027
SJICWG Meeting - CY 3rd quarter 2028 Update	3	2028	3	2028
SJICWG Meeting - CY 1st quarter 2029 Update	1	2029	1	2029
Platform-Store Interface Control Document (PS ICD) Change Notices 3rd quarter 2024	3	2024	3	2024
Platform-Store Interface Control Document (PS ICD) Change Notices 1st quarter 2025	1	2025	1	2025
Platform-Store Interface Control Document (PS ICD) Change Notices 4th quarter 2025	4	2025	4	2025
Platform-Store Interface Control Document (PS ICD) Change Notices 2nd quarter 2026	2	2026	2	2026
Platform-Store Interface Control Document (PS ICD) Change Notices 4th quarter 2027	4	2027	4	2027
Platform-Store Interface Control Document (PS ICD) Change Notices 3rd quarter 2028	3	2028	3	2028
Platform-Store Interface Control Document (PS ICD) Change Notices 1st quarter 2029	1	2029	1	2029
Platform-Store Interface Control Document (PS ICD) Change Notices 3rd quarter 2029	3	2029	3	2029
Platform-Store Interface Control Document (PS ICD) Change Notices - GeoZone Conops 2nd quarter 2023	2	2023	2	2023
Platform-Store Interface Control Document (PS ICD) Change Notices - GeoZone Conops 1st quarter 2024	1	2024	1	2024

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 655361 / <i>Stores-Aircraft Interface</i>
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<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Platform-Store Interface Control Document (PS ICD) Change Notices - GeoZone Conops 2nd quarter 2025	2	2025	2	2025
Platform-Store Interface Control Document (PS ICD) Change Notices - Advanced Carriage Systems	2	2023	2	2023
Platform-Store Interface Control Document (PS ICD) Change Notices - Network Enabled Weapons 2nd quarter 2025	2	2025	2	2025
Platform-Store Interface Control Document (PS ICD) Rev 06	2	2023	2	2023
Common Flexible Weapon (CFW) Interface Control Document (ICD) Incorporation	1	2024	2	2025
Common Flexible Weapon (CFW) Interface Control Document (ICD) Incorporation - 3rd quarter 2024	3	2024	3	2024
Common Flexible Weapon (CFW) Interface Control Document (ICD) Incorporation - 2nd quarter 2025	2	2025	2	2025
System Integration Lab (SIL) Certification Tool (CT) software	1	2023	4	2029
System Integration Lab (SIL) Certification Tool (CT) software 2nd quarter 2023 updates	2	2023	2	2023
System Integration Lab (SIL) Certification Tool (CT) software 4th quarter 2023 updates	4	2023	4	2023
System Integration Lab (SIL) Certification Tool (CT) software 2nd quarter 2024 updates	2	2024	2	2024
System Integration Lab (SIL) Certification Tool (CT) software 1st quarter 2025 updates	1	2025	1	2025
System Integration Lab (SIL) Certification Tool (CT) software 4th quarter 2025 updates	4	2025	4	2025
System Integration Lab (SIL) Certification Tool (CT) software 2nd quarter 2026 updates	2	2026	2	2026
System Integration Lab (SIL) Certification Tool (CT) software 1st quarter 2027 updates	1	2027	1	2027
System Integration Lab (SIL) Certification Tool (CT) software 4th quarter 2027 updates	4	2027	4	2027
System Integration Lab (SIL) Certification Tool (CT) software 3rd quarter 2028 updates	3	2028	3	2028
System Integration Lab (SIL) Certification Tool (CT) software 2nd quarter 2029 updates	2	2029	2	2029

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604602F / <i>Armament/Ordnance Development</i>	<b>Project (Number/Name)</b> 655361 / <i>Stores-Aircraft Interface</i>
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<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Mission Planning CT software 3rd quarter 2023 updates	3	2023	3	2023
Mission Planning CT software 1st quarter 2024 updates	1	2024	1	2024
Mission Planning CT software 1st quarter 2025 updates	1	2025	1	2025
Mission Planning CT software 2nd quarter 2026 updates	2	2026	2	2026
Mission Planning CT software 2nd quarter 2027 updates	2	2027	2	2027
Mission Planning CT software 3rd quarter 2028 updates	3	2028	3	2028
Mission Planning CT software 3rd quarter 2029 updates	3	2029	3	2029
UAI (Mission Planning) Common Component (CC)	1	2023	4	2029
CC software 4th quarter 2023 updates	4	2023	4	2023
CC software 3rd quarter 2024 updates	3	2024	3	2024
CC software 2nd quarter 2025 updates	2	2025	2	2025
CC software 2nd quarter 2026 updates	2	2026	2	2026
CC software 1st quarter 2027 updates	1	2027	1	2027
CC software 1st quarter 2028 updates	1	2028	1	2028
CC software 4th quarter 2028 updates	4	2028	4	2028
CC software 3rd quarter 2029 updates	3	2029	3	2029
Weapon Sustainment/Regression Efforts: JDAM, JASSM-ER, SDB I+II	1	2023	4	2029
A/C Sustainment/Regression Efforts: F-16 Blk 40/50, F-15E	1	2023	4	2029
Weapon Dev: SiAW, JSM, SPEAR3, LRASM, AARGM-ER, JAGM-F, hypersonics, advanced carriage systems, CFW, Grey Wolf	1	2023	4	2029
A/C Dev. F-16 Foreign Military Sales, F-35, B-21, B-1, A-10, F-22, F-18, MQ-9, F-15EX, MQ-IC, AC-130J, B-52	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604604F / <i>Submunitions</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	3.273	3.345	3.427	0.000	3.427	3.513	3.584	3.714	3.788	Continuing	Continuing
653166: <i>Joint Smart Munitions Test and Evaluation</i>	-	3.273	3.345	3.427	0.000	3.427	3.513	3.584	3.714	3.788	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Project Chicken Little (PCL) continues providing superior rapid reaction signature exploitation capabilities for use on both the traditional and the asymmetrical battlefield. PCL delivers vital one-of-a-kind research, development, test, and evaluation (RDT&E) expertise directly to the warfighter, capability developer, and allied/coalition forces.

From its inception in 1985, PCL constantly advances the state-of-the-art for developmental smart munitions, seekers/sensors, and their platforms. PCL also focuses its capability against today's networked weapons, emerging weapon concepts, and assists development of innovative targeting technologies to be employed against a wide variety of vehicle targets, theater air defense units, and an extensive array of associated equipment.

Combat systems and support equipment exhibit physical characteristics (i.e. signatures) and present certain vulnerabilities, which can be exploited by various targeting technologies leading to the elimination or incapacitation of the threat through the application of force (e.g. smart munitions or directed energy) or application of intelligence, surveillance, reconnaissance (ISR) methods. PCL collects physical, functional, and signature attributes of real foreign threat systems and related equipment; this data feeds high-fidelity models used to predict detection, classification, vulnerability, and effectiveness performance for ISR sensor and weapon system design. PCL collects high resolution signature data using a variety of ground, air, and space-based sensors against both new and existing (obtained, sustained, and maintained to be signature representative) foreign targets; with and without the presence of camouflage, concealment, and deception materials; and operated using enemy tactics/Concept of Operations (CONOPS). The resulting highly reliable, realistic data directly support munitions/targeting development programs and helps mitigate overall acquisition risk. PCL serves as a major focal point for joint signature exploitation, collection, and dissemination within the DoD. PCL is a prime contributor in the time critical process to rapidly exploit, assess, and determine US and allied weapon/targeting performance against high value targets. Customers include: the major Defense and Service Intelligence Centers, all Services, the Joint Technical Coordinating Group (JTTCG) who develop the Joint Munitions Effectiveness Manuals (JMEMs), Combatant Commands, AF Major Commands, US Air Force Weapons School curriculum support, and others. Current projects include, but are not limited to: target signature exploitation, target geometric modeling (for identifying vulnerabilities), improving air capabilities against protected structures (specifically hard and deeply buried targets), and the testing of multiple seekers, sensors, and targeting technologies in representative environments against Combatant Command/Major Command/Intelligence Community high value targets.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.00 was expended for civilian pay expenses in this program element, and in FY24 \$0.00 is forecasted for civilian pay expenses in this program element.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604604F / <i>Submunitions</i>
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This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	3.273	3.345	3.421	0.000	3.421
Current President's Budget	3.273	3.345	3.427	0.000	3.427
Total Adjustments	0.000	0.000	0.006	0.000	0.006
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.006	0.000	0.006

**Change Summary Explanation**

No Significant Changes

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<p><b>Title:</b> Project Chicken Little (PCL)</p> <p><b>Description:</b> Provide the DoD community accurate multi-spectral signatures obtained from high-value, signature representative modern threat systems using advanced collection technologies. Exploitations typically occur CONUS; however, PCL is postured to support OCONUS collections as dictated by mission requirements.</p> <p>A critical underpinning of the System Exploitation major thrust area, Sensor Week, occurs every two years and provides a unique air and ground demonstration/validation of candidate Seeker/Sensor/Intelligence, Surveillance, and Reconnaissance (ISR) technologies.</p> <p>Plan and conduct captive carry flight tests and signature collection for seeker/sensor technology evaluations.</p> <p>Develop, validate, and accredit improved models for target vulnerability and weapons effectiveness in support of Combatant Commands' (COCOMs) requirements.</p>	3.273	3.345	3.427	0.000	3.427

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604604F / <i>Submunitions</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<p><b><i>FY 2024 Plans:</i></b> Exploit high value threat systems (typically 4 per year). Provide signature data from multiple threat systems in various environments using advanced and developmental seeker/sensor technologies.</p> <p>Conduct Sensor Week (SW), providing a singularly unique forum for joint service demonstration of developmental and operational seekers/sensors/ISR assets against a wide array of US, coalition, and foreign national ground targets.</p> <p>Exploit the signatures of ISR targets; conduct rapid reaction performance analysis &amp; evaluations in support of COCOM/MAJCOM immediate/urgent warfighter needs; optimize current project methods to support ISR testing; capture and catalog multi-spectral signatures on asymmetric threat Unmanned Aerial Systems (UAS).</p> <p>Assist in obtaining relevant, high value, and emergent threat assets and/or decoys. Ensure the threat assets remain properly "signature representative" for systems development and testing. Develop, validate, and accredit improved computer models to determine target vulnerability and weapons effectiveness in support of warfighter requirements.</p> <p><b><i>FY 2025 Base Plans:</i></b> Continue to exploit high value threat systems through quarterly test events. Provide signature data from multiple threat systems in various environments using advanced and developmental seeker/sensor technologies.</p> <p>Conduct Acoustic Week, providing a distinct forum for joint service demonstration of developmental and operational acoustic sensors against a wide array of US, coalition, and foreign national ground targets. Sensor platforms will include highly proliferated and asymmetric threat Unmanned Aerial Systems (UAS).</p> <p>Exploit the signatures of ISR targets; conduct performance analysis &amp; evaluations through rapid reaction performance analysis in support of COCOM/MAJCOM immediate/urgent warfighter needs; optimize current project methods to support ISR testing; capture/catalog multi-spectral signatures on asymmetric threat UAS.</p> <p>Assist in obtaining relevant, high value, and emergent threat assets and/or decoys. Ensure the threat assets remain properly "signature representative" for systems development and testing. Develop, validate, and accredit</p>					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604604F / <i>Submunitions</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
improved computer models to determine target vulnerability and weapons effectiveness in support of warfighter requirements.  <b>FY 2025 OCO Plans:</b> N/A  <b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to inflation adjustment.					
<b>Accomplishments/Planned Programs Subtotals</b>	3.273	3.345	3.427	0.000	3.427

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

Funds are executed organically in support of test and evaluation activities including studies, analyses, flight & ground tests, model building and simulation. Work is performed organically by the 96th Test Wing.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2025 Air Force</b>											<b>Date: March 2024</b>				
<b>Appropriation/Budget Activity</b> 3600 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0604604F / <i>Submunitions</i>					<b>Project (Number/Name)</b> 653166 / <i>Joint Smart Munitions Test and Evaluation</i>				

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Maintain Test Asset Relevancy	PO	Various : Las Vegas, NV	-	0.800	Nov 2022	0.800	Nov 2023	0.800	Nov 2024	-		0.800	Continuing	Continuing	0.800
<b>Subtotal</b>			-	0.800		0.800		0.800		-		0.800	Continuing	Continuing	N/A

**Remarks**  
Fleet relevance addresses the acquisition of new and emerging threat vehicles, acquisition of high fidelity decoys, and sustainment of fleet signature quality.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Conduct Test and Analysis	MIPR	96th Test Wing : Eglin AFB, FL	-	2.411	Nov 2022	2.451	Nov 2023	2.527	Nov 2024	-		2.527	Continuing	Continuing	-
<b>Subtotal</b>			-	2.411		2.451		2.527		-		2.527	Continuing	Continuing	N/A

**Remarks**  
96th Test Wing (96 CTG, 46 TS) is the Program Office which conducts inhouse testing.

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management Services	MIPR	46TS/TGBB : Eglin, FL	-	0.062	Nov 2022	0.094	Nov 2023	0.100	Nov 2024	-		0.100	Continuing	Continuing	-
<b>Subtotal</b>			-	0.062		0.094		0.100		-		0.100	Continuing	Continuing	N/A

**Remarks**  
96th Test Wing (96 CTG, 46 TS) is the Program Office which conducts in house testing.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		-	3.273	3.345	3.427	-	3.427	Continuing	Continuing	N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2025 Air Force							<b>Date:</b> March 2024			
<b>Appropriation/Budget Activity</b> 3600 / 5			<b>R-1 Program Element (Number/Name)</b> PE 0604604F / <i>Submunitions</i>			<b>Project (Number/Name)</b> 653166 / <i>Joint Smart Munitions Test and Evaluation</i>				

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604F / <i>Submunitions</i>	<b>Project (Number/Name)</b> 653166 / <i>Joint Smart Munitions Test and Evaluation</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Project Chicken Little; JMT&amp;E</i></b>	
Target/warhead evaluation/analysis, signature test, captive carry flight tests.	
FY23 Acoustic Week	
FY24 Sensor Week	
FY25 Acoustic Week	
FY26 Sensor Week	
FY27 Acoustic Week	
FY28 Sensor Week	
FY29 Accoustic Week	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604604F / <i>Submunitions</i>	<b>Project (Number/Name)</b> 653166 / <i>Joint Smart Munitions Test and Evaluation</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Project Chicken Little; JMT&amp;E</i></b>				
Target/warhead evaluation/analysis, signature test, captive carry flight tests.	1	2023	4	2029
FY23 Acoustic Week	1	2023	3	2023
FY24 Sensor Week	1	2024	4	2024
FY25 Acoustic Week	1	2025	3	2025
FY26 Sensor Week	1	2026	4	2026
FY27 Acoustic Week	1	2027	3	2027
FY28 Sensor Week	1	2028	4	2028
FY29 Accoustic Week	1	2029	3	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / <i>Agile Combat Support</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	18.677	21.967	24.178	0.000	24.178	24.502	24.998	25.893	26.406	Continuing	Continuing
652895: <i>Civil Engineering Readiness</i>	-	18.677	21.967	22.124	0.000	22.124	22.398	22.850	23.667	24.135	Continuing	Continuing
654910: <i>Aeromedical Readiness</i>	-	0.000	0.000	2.054	0.000	2.054	2.104	2.148	2.226	2.271	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

This program provides lighter, leaner, rapidly-deployable and technologically-advanced material, and capabilities to the warfighter. Current projects in this program include Civil Engineering Readiness (Project 652895) and Aeromedical Readiness (Project 654910). Civil Engineering Readiness projects enable airfield protection, and airfield damage recovery for sustainment, and increased resiliency of airfield operations anywhere in the world. Aeromedical Readiness projects provide aerospace medical systems and treatment equipment to improve casualty care and meet worldwide warfighter medical operational requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY23 0.000 was expended for civilian pay expenses in this program element, and in FY24 0.000 is forecast for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	19.252	21.967	22.086	0.000	22.086
Current President's Budget	18.677	21.967	24.178	0.000	24.178
Total Adjustments	-0.575	0.000	2.092	0.000	2.092
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.575	0.000	2.092	0.000	2.092

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / <i>Agile Combat Support</i>
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**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 652895: *Civil Engineering Readiness*

Congressional Add: *Carbon Materials*

Congressional Add: *Airfield Sustainment & Damage Recovery Technologies*

Congressional Add: *Modern Timber Products for Expeditionary Construction*

Congressional Add Subtotals for Project: 652895

Congressional Add Totals for all Projects

	FY 2023	FY 2024
	0.000	-
	0.000	-
	5.000	-
Congressional Add Subtotals for Project: 652895	5.000	-
Congressional Add Totals for all Projects	5.000	-

**Change Summary Explanation**

FY24 changes includes a funding realignment of -\$2.001 from Airbase Technologies to Aeromedical Readiness (Project 654910), with Medical C-CBRN (Program 0208036F).

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / <i>Agile Combat Support</i>	<b>Project (Number/Name)</b> 652895 / <i>Civil Engineering Readiness</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
	652895: <i>Civil Engineering Readiness</i>	-	18.677	21.967	22.124	0.000	22.124	22.398	22.850	23.667	24.135	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This Civil Engineering (CE) Readiness project develops Airbase Technologies (ABT), Airfield Damage Repair (ADR), Airfield Protection (AP), Energy & Utilities (E&U), and CE Materials (CEM) solutions for in-garrison, expeditionary, and contingency installations and airbases. This includes: technologies for airfield assessment, pavement repair and unexploded ordnance identification and mitigation to enable rapid recovery and regeneration of airfield operations; infrastructure design criteria, construction methods, hardened shelters, evaluation tools, materials, aviation firefighting, force protection, expeditionary energy, waste water recycling/treatment, CE materials applications and systems for improved resiliency and rapid recovery of airbase and airfield operations following an attack.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY23 0.000 was expended for civilian pay expenses in this program element, and in FY24 0.000 is forecast for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b>Title:</b> Airbase Technologies	4.177	7.254	7.528
<b>Description:</b> Technical support providing RDT&E capabilities for cross-cutting CE applications and processes for all CE functional areas. Provides replacements and repair of critical RDT&E lab equipment, test systems and instruments. Specialized RDT&E systems and software required to conduct CE RDT&E.			
<b>FY 2024 Plans:</b> Continue development and testing of material technologies to maximize indigenous resourcing for expeditionary civil engineering applications, processes for production of cementitious materials in theatre with increased sustainment and reduced life cycle costs, development and testing of deployable large-scale platforms, and variable material formulations for additive manufacturing of buildings and equipment for CE applications, development of functionalized materials for hardened infrastructure and force protection applications, mitigation technologies for Aqueous Film Forming Form (AFFF) and transition to next generation fire-fighting and fire suppression agents and systems, evaluation of energy, utility, and infrastructure improvements, energy storage systems and incorporation of alternative and renewable energy systems with USAF assets. Replace/repair critical RDT&E lab equipment. Fund program management support, RDT&E IT systems and software required to conduct CE RDT&E.			
<b>FY 2025 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support	<b>Project (Number/Name)</b> 652895 / Civil Engineering Readiness

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Continue development and testing of material technologies for indigenous soil-based cements and minimal basing processes including bio-based cementation for expeditionary ADR, test and evaluation of low resource manufacturing technologies for reduced life cycle costs, development and testing of additive manufacturing approaches for CE applications, development of functionalized materials for hardened infrastructure and force protection applications, evaluation, treatment, and mitigation technologies for AFFF and development and testing of next generation fire-fighting and fire suppression agents, evaluation of expeditionary energy, utility, and infrastructure improvements, energy storage systems and incorporation of renewable energy systems with USAF assets. Replace/repair critical RDT&amp;E lab equipment. Fund program management support, RDT&amp;E IT systems and software required to conduct CE RDT&amp;E.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Planned increase for Civil Engineering Materials and Processes and Additive Manufacturing.</p>			
<p><b>Title:</b> Airfield Damage Repair</p> <p><b>Description:</b> This effort develops, tests, and certifies equipment, materials, and Tactics, Techniques, and Procedures (TTPs) for the rapid assessment and repair of airfield damage, which includes identification, mitigation or removal of unexploded ordnance and expedient repairs for fuel and utility systems. This effort will also accelerate the transition of proven technologies and sustained protection of critical infrastructure, including operating surfaces, shelters, fuel storage and distribution systems, and command and control (C2) systems. Further, this effort focuses on the resiliency of airbase infrastructure as well as the timely repair and regeneration of airfield operations within established time limits in order to gain and maintain air superiority.</p> <p><b>FY 2024 Plans:</b> Mature the rapid assessment, mitigation, and repair tool and material solutions for airfield damage recovery through research, development, testing, and evaluation. Rapid assessment includes spiral development and integration of small unmanned aircraft systems (SUAS), mobile towers, and handheld platforms to utilize various sensors, to provide data for automated damage detection software solutions to significantly decrease damage assessment time and improve automated detection of unexploded ordnance (UXO). Mitigation includes development, testing and evaluation of systems to remotely remove and neutralize UXO through a family of Rapid Explosive Hazard Mitigation (REHM) components. This family of systems will include manned and unmanned systems with improved blast resistance capability to fit on both new and existing systems. Repair of damage focuses on development, testing, and transition of materials and equipment sets for rapid recovery of enemy induced battle damaged runways. New materials will have minimal dependence on shipping and logistics, with new techniques and procedures to place locally sourced materials to provide equal or greater strength to current ADR equipment. New systems will be developed and tested to provide similar or greater repair speeds with smaller logistic requirement, and current equipment test and evaluation will focus heavily on testing and operation in extreme weather conditions. New procedures and equipment will be identified to fully replace/rejuvenate pavement runways using Full Depth Reclamation process.</p> <p><b>FY 2025 Plans:</b></p>	5.885	8.396	8.375

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support	<b>Project (Number/Name)</b> 652895 / Civil Engineering Readiness

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Continue to mature and transition the rapid assessment, mitigation, and repair tool and material solutions for airfield damage recovery through research, development, testing, and evaluation. Rapid assessment includes spiral development and integration of small unmanned aircraft systems (SUAS), mobile towers, and handheld platforms to utilize various sensors, to provide data for automated damage detection software solutions to significantly decrease damage assessment time and improve automated detection of unexploded ordnance (UXO). In order to meet improved sensor requirements for enhanced detection and classification of damage/debris, new platforms will be identified to meet current and future needs. Mitigation includes development, testing and evaluation of systems to remotely remove and neutralize UXO through a family of Rapid Explosive Hazard Mitigation (REHM) components. This family of systems will include manned and unmanned systems with improved blast resistance capability to fit on both new and existing heavy equipment, physical destruction of UXO through stand-off methods, and Subsurface Location, Access, and Mitigation (SLAM) of buried UXO. Repair of damage focuses on development, testing, and transition of materials and equipment sets for rapid recovery of enemy induced battle damaged runways. New materials will have minimal dependence on shipping and logistics through use of indigenous materials, with new techniques and procedures to place locally sourced materials to provide equal or greater strength to current ADR methodologies. New systems will be developed and tested to provide similar or greater repair speeds with smaller logistic requirement, and current equipment test and evaluation will focus heavily on testing and operation in extreme weather conditions, along with methods for repair that will support current Agile Combat Employment (ACE) operations and strategies.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Minor decrease to enable support for BEAR System for Load and Installation Management (BSLIM) under Basing &amp; Protection.</p>			
<p><b>Title:</b> Basing &amp; Protection</p> <p><b>Description:</b> Research, develop and transition technologies for airbase infrastructure. Includes hardening and protecting airfield infrastructure from munitions attack, unexploded ordnance and aircraft, equipment and infrastructure fires. Within this effort are structural solutions, expeditionary and expedient hardening and protection solutions, explosive ordnance disposal technologies, aviation firefighting technologies, and energy and utilities technologies. The technologies developed from this effort provide improved resiliency and rapid restoration of airbase and airfield operations following an attack as well as energy and utilities technologies that provide increased efficiency and decreased logistic costs for expeditionary and in-garrison applications.</p> <p><b>FY 2024 Plans:</b> Test and evaluate additively manufactured concrete structures for blast and ballistic performance and update design guidance accordingly. Modernize personnel bunker designs to reduce the likelihood of traumatic brain injuries (TBI) from emerging threats. Continue development of building wall and roof sections to reduce construction cost and increase survivability against guided munitions. Continue to design and develop Expedient Small Asset Protection (ESAP) equipment concepts and prototypes. Test and validate ESAP systems against design threat weapons and improve design as necessary. Provide technical assistance for initial fielding of ESAP systems. Improve equipment protection systems to better align with agile combat objectives. Evaluate Per- and Polyfluoroalkyl Substances (PFAS)-free foams, mitigation technologies for Aqueous film forming foam (AFFF), and</p>	3.615	6.317	6.221

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support	<b>Project (Number/Name)</b> 652895 / Civil Engineering Readiness
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
<p>new/emergent technologies for fire protection and training. Field tested and evaluated expeditionary energy storage and shelter technologies that incorporate energy resiliency and sustainability capabilities for USAF expeditionary assets. Conduct field demonstration of innovative expeditionary water and waste processing systems in an operational environment prior to fielding. Support test and evaluation of commercial technologies/systems that includes: expeditionary shelters, environmental conditioning systems, hybrid renewable energy systems, energy storage, power generation and management system, water and waste stream processing systems.</p> <p><b>FY 2025 Plans:</b> Upgrade/modernize existing personnel protective bunkers and Air Force infrastructure hardening standards to meet current threat(s). Continue RDT&amp;E of new concepts for protection materials for lighter, less expensive solutions for infrastructure hardening. Test and evaluate technologies against penetrating munitions including cruise missile hardening and improve expedient sheltering to address advanced threats. Continue to provide technical assistance for initial fielding of Expedient Small Asset Protection (ESAP) systems. Perform testing of selective hardening systems for infrastructure. Continue testing and evaluation of unconventional countermeasures technology for transition. Continue research and development of aviation firefighting technologies for treatment and replacement of the perfluorinated aqueous film forming foams (AFFF), clean firefighting agents - Halon replacement and aviation firefighting equipment. Continue RDT&amp;E of EOD technologies for neutralization UXO threats for transition into service. Continue bench and lab scale testing of new energy and utilities technologies prior to scaling up to full scale test and evaluation. Continue test and evaluation of expeditionary energy storage and shelter technologies that incorporate resiliency and sustainability capabilities for USAF expeditionary assets. Conduct field demonstration of innovative expeditionary water and waste disposal systems in an operational environment prior to fielding such as in Arctic environments, in order to support current Arctic strategy needs. Support test and evaluation of commercial technologies/systems that includes: expeditionary shelters, environmental conditioning systems, hybrid renewable energy systems, energy storage, power generation and management system, water and waste stream processing systems.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Minor decrease in requirement for BEAR System for Load and Installation Management (BSLIM).</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	13.677	21.967	22.124

	FY 2023	FY 2024
<b>Congressional Add:</b> Carbon Materials	0.000	-
<b>FY 2023 Accomplishments:</b> Continue to conduct research into Carbon Materials for Civil Engineer applications.		
<b>Congressional Add:</b> Airfield Sustainment & Damage Recovery Technologies	0.000	-

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support	<b>Project (Number/Name)</b> 652895 / Civil Engineering Readiness
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	FY 2023	FY 2024
<b>FY 2023 Accomplishments:</b> Continue to conduct research into Airfield Sustainment and Damage Recovery Technologies for Civil Engineer applications. Optimize technologies that will enable asphalt to set at cooler temperatures which will reduce energy consumption at forward base operations.		
<b>Congressional Add:</b> Modern Timber Products for Expeditionary Construction	5.000	-
<b>FY 2023 Accomplishments:</b> Continue and extend research into Modern Timber Products for Expeditionary Construction and Civil Engineer applications.		
<b>Congressional Adds Subtotals</b>	5.000	-

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2025</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Continuing</u>
• OPAF 04 Line Item 845100A: <i>Contingency Operations - Engineering and EOD Equipment</i>	68.739	173.669	167.773	-	167.773	171.299	-	-	-	Continuing	Continuing

**Remarks**

Procurement funding for Expedient Small Asset Protection (ESAP) systems, Rapid Airfield Damage Assessment System (RADAS) and Recovery of Airbases Denied by Ordnance (RADBO) in PE 0208028F.

**D. Acquisition Strategy**

This Civil Engineering (CE) Readiness project develops and evaluates technologies for in-garrison, expeditionary, and contingency installations & airbases. This encompasses a wide range of solutions and COTS equipment that are fielded to support the CE mission of the USAF. The acquisition strategy utilizes AFCEC RDT&E contracts as well as AFLCMC, GSA, other DoD and US Government laboratories/engineering centers, contracts and other transaction agreements whenever practical for the specific technology development effort.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support	<b>Project (Number/Name)</b> 652895 / Civil Engineering Readiness
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Airbase Technologies	Various	AFCEC : Tyndall AFB, FL	-	1.994	Oct 2022	4.405	Nov 2023	4.993	Nov 2024	-		4.993	Continuing	Continuing	-
Airfield Damage Repair (ADR) & Airfield Pavement Technologies	Various	AFCEC : Tyndall AFB, FL	-	2.210	Dec 2022	3.080	Nov 2023	2.925	Nov 2024	-		2.925	Continuing	Continuing	-
EOD & Robotics Technologies	C/CPFF	Torch Technologies : Huntsville, AL	-	2.086	Nov 2022	2.633	Nov 2023	2.675	Nov 2024	-		2.675	Continuing	Continuing	-
RADAS Integration	C/CPFF	Torch Technologies : Huntsville, AL	-	2.164	Nov 2022	2.683	Nov 2023	2.775	Nov 2024	-		2.775	Continuing	Continuing	-
Airfield Protection (AP) Infrastructure Hardening	C/CPFF	Battelle : Panama City, FL	-	2.023	Nov 2022	2.981	Nov 2023	2.825	Nov 2024	-		2.825	Continuing	Continuing	-
Aviation Firefighting Technologies	C/CPFF	Battelle : Panama City, FL	-	0.796	Oct 2022	1.292	Nov 2023	1.425	Nov 2024	-		1.425	Continuing	Continuing	-
Energy & Utilities	C/CPFF	Battelle : Panama City, FL	-	0.796	Oct 2022	1.292	Nov 2023	1.425	Nov 2024	-		1.425	Continuing	Continuing	-
BEAR System for Load and Installation Management (BSLIM)	C/CPFF	Battelle : Panama City, FL	-	-		0.752	Nov 2023	0.503	Nov 2024	-		0.503	Continuing	Continuing	-
Airfield sustainment and damage recovery technologies	Various	Kenai Defense : Homer, AK	-	-		-		-		-		-	Continuing	Continuing	-
Carbon materials	Various	Kenai Defense : Homer, AK	-	-		-		-		-		-	Continuing	Continuing	-
Modern timber products for expeditionary construction	Various	Auburn University : Auburn, AL	-	5.000		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	17.069		19.118		19.546		-		19.546	Continuing	Continuing	N/A

**Remarks**  
Airfield Pavements & Technologies was rolled into Airfield Damage Repair as these are a joint effort.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support	<b>Project (Number/Name)</b> 652895 / Civil Engineering Readiness
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	Various	AFCEC : Tyndall AFB, FL	-	0.422	Apr 2023	1.259	Apr 2024	0.928	Apr 2025	-		0.928	Continuing	Continuing	-
<b>Subtotal</b>			-	0.422		1.259		0.928		-		0.928	Continuing	Continuing	N/A

**Remarks**  
PMA includes travel and supplies to support CE Readiness RDT&E activities.

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A&AS Program Support RDT&E	C/FFP	Multiple : Tyndall AFB, FL	-	1.186	Oct 2022	1.590	Oct 2023	1.650	Oct 2024	-		1.650	Continuing	Continuing	-
<b>Subtotal</b>			-	1.186		1.590		1.650		-		1.650	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	18.677	21.967	22.124	-	22.124	Continuing	Continuing	N/A

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support	<b>Project (Number/Name)</b> 652895 / Civil Engineering Readiness
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>CE Readiness</b>																												
Airbase Technologies																												
ADR Robotic In-seat Appliques Phase 2																												
ADR In-situ Material Repair RDT&E																												
REHM Spiral 2 Rapid UXO Clearance																												
RADAS Development, Test & Evaluation																												
Airfield Mitigation and Recovery Robotics																												
AFFF Disposal and Mitigation Technologies																												
Directed Energy Application for UXO Neutralization																												
Civil Engineering Projects for Sustained Airbase Operations																												
Airfield Protection - Advanced Hardening RDT&E																												
AFFF Replacement Agent Test & Evaluation																												
Airfield Sustainment and Damage Recovery Technologies																												
Carbon Materials																												
Modern Timber Products for Expeditionary Construction																												
Design, Development, Fielding and Testing of ESAP 3 Shelter																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support	<b>Project (Number/Name)</b> 652895 / Civil Engineering Readiness
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>CE Readiness</b>				
Airbase Technologies	1	2023	4	2027
ADR Robotic In-seat Appliques Phase 2	1	2023	2	2026
ADR In-situ Material Repair RDT&E	1	2023	2	2025
REHM Spiral 2 Rapid UXO Clearance	1	2023	3	2024
RADAS Development, Test & Evaluation	1	2023	4	2026
Airfield Mitigation and Recovery Robotics	1	2023	3	2027
AFFF Disposal and Mitigation Technologies	1	2023	4	2024
Directed Energy Application for UXO Neutralization	1	2023	4	2024
Civil Engineering Projects for Sustained Airbase Operations	1	2023	1	2026
Airfield Protection - Advanced Hardening RDT&E	1	2023	4	2027
AFFF Replacement Agent Test & Evaluation	1	2023	4	2026
Airfield Sustainment and Damage Recovery Technologies	1	2023	4	2025
Carbon Materials	1	2023	4	2025
Modern Timber Products for Expeditionary Construction	1	2023	4	2025
Design, Development, Fielding and Testing of ESAP 3 Shelter	1	2023	4	2027

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support				<b>Project (Number/Name)</b> 654910 / Aeromedical Readiness			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
654910: Aeromedical Readiness	-	0.000	0.000	2.054	0.000	2.054	2.104	2.148	2.226	2.271	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Aeromedical Readiness provides key aeromedical devices, life-saving capabilities and quality of life technologies and equipment. This program enables the critical care of combat casualties by further developing and optimizing existing technologies for ground Expeditionary Medical Systems (EMEDS) and aeromedical evacuation systems. EMEDS and aeromedical evacuation systems provide the urgent care needed to treat deployed injured warfighters and return them to duty while in country, and to treat combat casualties that need to be safely transported to a stateside hospital for follow on treatment. The program also supports critical capabilities development in the multi-disciplinary areas for light-weight, durable, and rapidly deployable medical equipment to ensure the Air Force is poised to meet future medical readiness and operational requirements, to include but not limited to Spinal Immobilization Transport Device (SIT-D), Pathogen Detection Capability, Automated Vision Testing, Whole Blood Transport and other FDA approved medical treatment devices. This program supports projects ranging from research efforts to optimize human physiologic and cognitive performance for Air Combat Command, to development of patient isolation and transportation devices for Air Mobility Command that enable aeromedical evacuation of patients suffering with highly infectious diseases.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY23 0.000 was expended for civilian pay expenses in this program element, and in FY24 0.000 is forecast for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Aeromedical Equipment Testing/Studies/Minor Development	0.000	0.000	2.054
<p><b>Description:</b> Aeromedical supports Defense Health Program, Joint Services and MAJCOM medical modernization. The Air Force Medical Readiness Agency (AFMRA) Surgeon General Requirement Oversight Council (SGROC) Governance process manages medical capability gaps, research and development, funding prioritization and decisional boards. Aeromedical procures and qualifies commercial-off-the-shelf (COTS) or near COTS medical and aeromedical products and/or performs minor development, studies and management efforts, under Aeromedical Readiness. Also to preform anthropometric studies. Aeromedical Program efforts evaluate integrating technologies or prototype systems in a realistic operating environment, expedite technology transition from the laboratory to operational use, emphasis on proving maturity prior to integration and viable decision ready materiel solutions.</p> <p><b>FY 2024 Plans:</b> No FY24 activity</p> <p><b>FY 2025 Plans:</b></p>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / <i>Agile Combat Support</i>	<b>Project (Number/Name)</b> 654910 / <i>Aeromedical Readiness</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Funding supports aeromedical modernization efforts, evaluating identified commercial-off-the-shelf (COTS) or near COTS medical and aeromedical products for Air Force use, identifying integration challenges and solutions, and proving technical maturity.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased due to FY 23 funding being zero'd out and then receiving FY24 funds in PEC 0208036F with a standard escalation for inflation.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	2.054

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

Multi-Modal Threat Detection and Mitigation Congressional Add improperly aligned to BPAC 654910. Funding is being executed out of BPAC 652895.

**D. Acquisition Strategy**

Whenever practical, commercial items are tested and evaluated as candidates for providing solutions to user needs. This normally involves contractor characterization, verification, and qualification testing to ensure Food and Drug Administration (FDA) approved, commercial off-the-shelf equipment is properly evaluated to identify any capability gaps that may require minor modifications for military use. However, acquisition strategies may also be carried out for traditional Engineering and Manufacturing Development (EMD). Funds may be used to address associated emerging Aeromedical Readiness requirements and for program management activities.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / Agile Combat Support	<b>Project (Number/Name)</b> 654910 / Aeromedical Readiness
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aeromedical Equipment R&D (Production Representative Units, Testing, Manufacturing Maturation, Food and Drug Administration Clearance)	C/FFP	AFLCMC : Wright-Patterson AFB, OH	-	-		-		2.054	Mar 2025	-		2.054	0.000	2.054	-
<b>Subtotal</b>			-	-		-		2.054		-		2.054	0.000	2.054	N/A
<b>Project Cost Totals</b>			-	-		-		2.054		-		2.054	0.000	2.054	N/A

**Remarks**  
Multi-Modal Threat Detection and Mitigation Congressional Add improperly aligned to BPAC 654910. Funding is being executed out of BPAC 652895.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / <i>Agile Combat Support</i>	<b>Project (Number/Name)</b> 654910 / <i>Aeromedical Readiness</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Aeromedical Readiness RDTE Efforts</i></b>	
Aeromedical Equipment Testing/Studies/ Minor Development	
Spinal Transport Device testing concludes, mod contract award	
Digital Engineering Investment	
<b><i>Multi-Modal Threat Detection and Mitigation</i></b>	
Multi-Modal Threat Detection and Mitigation	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604617F / <i>Agile Combat Support</i>	<b>Project (Number/Name)</b> 654910 / <i>Aeromedical Readiness</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Aeromedical Readiness RDTE Efforts</i></b>				
Aeromedical Equipment Testing/Studies/Minor Development	1	2023	4	2027
Spinal Transport Device testing concludes, mod contract award	2	2024	2	2025
Digital Engineering Investment	4	2024	4	2025
<b><i>Multi-Modal Threat Detection and Mitigation</i></b>				
Multi-Modal Threat Detection and Mitigation	3	2023	4	2024

**Note**  
Multi-Modal Threat Detection and Mitigation Congressional Add improperly aligned to BPAC 654910. Funding is being executed out of BPAC 652895.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604706F / <i>Life Support Systems</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	32.820	39.301	25.502	0.000	25.502	26.387	30.080	31.169	31.785	Continuing	Continuing
65412A: <i>Life Support Systems</i>	-	32.820	39.301	25.502	0.000	25.502	26.387	30.080	31.169	31.785	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program develops aircrew flight equipment and other combat support equipment required for safe effective execution. Air Force acquisition teams lead the upgrade and fielding of new equipment and systems by assessing deficiencies in existing equipment, identifying and assessing existing products or developing new technology, and conducting required Safe-to-Fly tests, certifications, and studies. Program efforts include, but are not limited to, the following projects: directed energy protective equipment; flight helmets and visors; oxygen breathing systems for aircrew; radios and locator beacons; support equipment; nuclear flash blindness protection; night vision devices; noise reduction devices; all types of flight suits and ensembles to protect aircrew against environmental threats; anti-gravity (anti-G) suits; flame resistant, retardant and blast/ballistic protective gear; aircraft seating; impact protection equipment; flotation devices; parachutes; ejection systems; post-ejection survival systems; physiological monitoring devices and other aircrew, life support, and ground crew systems required by the warfighter.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 1.44M was expended for civilian pay expenses in this program element, and in FY24 1.6M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	50.042	39.301	25.457	0.000	25.457
Current President's Budget	32.820	39.301	25.502	0.000	25.502
Total Adjustments	-17.222	0.000	0.045	0.000	0.045
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-15.664	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-1.558	0.000	0.045	0.000	0.045

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604706F / <i>Life Support Systems</i>
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**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 65412A: *Life Support Systems*  
Congressional Add: *Physiological Monitoring*

Congressional Add Subtotals for Project: 65412A

Congressional Add Totals for all Projects

	FY 2023	FY 2024
	5.000	-
	5.000	-
	5.000	-

**Change Summary Explanation**

FY23 adjustments include -15.5664M on FY23-40PA; below threshold reprogrammings for AFMETCAL and JCREW and Small Business Innovative Research (SBIR) reduction of -1.558. FY25 adjustment for inflation rate increase.

**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b>Title:</b> Aircrew Performance Studies/Technology Projects and Minor Development Efforts	10.486	16.347	14.602
<b>Description:</b> Air Force Life Cycle Management Center's Aircrew Performance Branch is the single USAF focal point for Aircrew Flight Equipment (AFE) Safe-to-Fly (STF) testing certification, addressing Safety Investigation Board (SIB) recommendations, along with studies and analysis. Aircrew Laser Eye Protection - Technical Insertion (ALEP-TI), Next Generation Fixed Wing Helmet (NGFWH), BA-X Low Profile Parachute (LPP) and Nuclear Flash Blindness Goggles (NFBG) are currently the active programs within Life Support Systems (LSS). In addition, funding addresses real-time capability gaps identified by the warfighter which may be satisfied by testing and qualifying commercial-off-the-shelf (COTS) products and/or performing minor development efforts totaling less than \$10M per year. Previous successful efforts may evolve into enduring capabilities as other users and MAJCOMs seek to incorporate these STF assets into their inventory. Funds may be used to address associated emerging aircrew, ground crew, and egress requirements, and for program management activities.			
<b>FY 2024 Plans:</b> Continue to perform STF testing and certification of COTS products. Address SIB recommendations. Continue the development/test efforts of aircrew laser eye protection - technical insertion (ALEP-TI) radio upgrades, next generation fixed wing helmet, next generation nuclear flash blindness technology, and improvement of parachute/flotation devices.			
<b>FY 2025 Plans:</b> Continue to perform STF testing and certification of COTS products. Address SIB recommendations. Continue the development/test efforts of aircrew laser eye protection - technical insertion (ALEP-TI) radio upgrades, next generation fixed wing helmet, next generation nuclear flash blindness technology, and improvement of parachute/flotation devices.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604706F / <i>Life Support Systems</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Funding decrease in RDT&E due to some programs moving towards production under Aircrew Performance Portfolio such as NGFWH.				
<p><b>Title:</b> Next Generation Ejection Seat</p> <p><b>Description:</b> This effort includes the qualification, procurement, fielding and sustainment of an upgraded ejection seat escape system for ACES II-equipped aircraft. The new ejection seat escape system safely accommodates greater variation in aircrew minimum and maximum weights at minimum aircrew sitting height of 31 inches, including 59% of the female pilot population, and the use of Helmet Mounted Displays. It reduces the risk of injuries to the arms and legs (especially due to limb flail), neck, and spinal column throughout all ejection phases.</p> <p><b>FY 2024 Plans:</b> Complete initial platform (F-15) delta qualification sled testing. Award F-16 production readiness delivery order.</p> <p><b>FY 2025 Plans:</b> Complete F-16 qualification testing. Award F-22 production readiness delivery order.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decrease in RDT&amp;E due to NGES moving towards production</p>		12.754	22.100	10.000
<p><b>Title:</b> Female Airmen Equipment</p> <p><b>Description:</b> Female Airman Fitment efforts develop and sustain Organizational Clothing and Individual Equipment (OCIE) &amp; Personal Protective Equipment (PPE) for female Airmen to enhance mission performance while improving safety and survival. Outreach with other AF organizations and sister services ensures that requirements are collected to vector current and future programs. Anthropometric data collection ensures that these programs produce the OCIE and PPE that will allow women to perform their best in the missions they are assigned. OCIE and PPE for female aircrew includes, but is not limited to, the development and refinement of flight suits, bladder relief systems, helmets, ejection seats, G-suits, aircrew body armor, oxygen masks, and feedback mechanisms.</p> <p><b>FY 2024 Plans:</b> Continue testing and development of female flight equipment: This includes, the AF GearFit App, aircrew harness, and anthropometric studies. Begin testing on in-flight bladder relief systems.</p> <p><b>FY 2025 Plans:</b> Continue testing and development of female flight equipment.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>		4.580	0.854	0.900

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604706F / <i>Life Support Systems</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Increase in FY25 RDT&E to complete anthropometric testing of female flight equipment.			
<b>Accomplishments/Planned Programs Subtotals</b>	27.820	39.301	25.502

	<b>FY 2023</b>	<b>FY 2024</b>
<b>Congressional Add:</b> Physiological Monitoring	5.000	-
<b>FY 2023 Accomplishments:</b> Aircrew Physiological Incident Monitoring and Alerting (APIMA) Congressional Add was used to assist with requirements maturation and Concept of Operations development for the real time monitoring and alerting of pilot cardiorespiratory performance, and quality of breathing gas to assist in physiological incident prevention.		
<b>Congressional Adds Subtotals</b>	5.000	-

**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 04 Line Item 842990: <i>Items Less Than \$5 Million</i> <i>(Safety and Rescue Equipment)</i>	105.776	60.473	106.236	-	106.236	94.711	98.131	99.151	-	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

The majority of efforts funded in this project employ a streamlined acquisition approach. Whenever practical, Government-Off-The-Shelf/Commercial-Off-The-Shelf (GOTS/COTS) items are tested and evaluated as candidates for solutions to user needs. This normally involves characterization, verification, and qualification testing to ensure GOTS/COTS equipment is properly certified and adapted for military purposes. However, acquisition strategies may be carried out at the project level for traditional Engineering and Manufacturing Development (EMD).

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604706F / <i>Life Support Systems</i>	<b>Project (Number/Name)</b> 65412A / <i>Life Support Systems</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Congressional Add for Physiological Monitoring	MIPR	DIU : Picatinny Arsenal, NJ	-	5.000		-		-		-		-	Continuing	Continuing	-
Aircrew Performance Studies/Technology Projects/Minor Development Efforts	Various	Multiple Contractors : TBD	-	4.746		12.436		9.602		-		9.602	Continuing	Continuing	-
Next Generation Ejection Seat (NGES)	SS/CPFF	Collins Aerospace : Colorado Springs, CO	-	11.374		20.482		8.400		-		8.400	Continuing	Continuing	-
Female Flight Equipment	Various	Multiple Contractors : TBD	-	4.580		0.704		0.900		-		0.900	Continuing	Continuing	-
<b>Subtotal</b>			-	25.700		33.622		18.902		-		18.902	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority	TBD	AFLCMC : Wright-Patterson AFB, OH	-	1.380		1.618		1.600		-		1.600	Continuing	Continuing	-
<b>Subtotal</b>			-	1.380		1.618		1.600		-		1.600	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Tests (NGES, ACES, NGFWH, etc.)	Various	Various : Various, NV	-	4.750		2.308		3.000		-		3.000	Continuing	Continuing	-
<b>Subtotal</b>			-	4.750		2.308		3.000		-		3.000	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604706F / <i>Life Support Systems</i>	<b>Project (Number/Name)</b> 65412A / <i>Life Support Systems</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	TBD	AFLCMC : Wright-Patterson AFB, OH	-	0.990		1.753		2.000		-		2.000	Continuing	Continuing	-
<b>Subtotal</b>			-	0.990		1.753		2.000		-		2.000	Continuing	Continuing	N/A

**Remarks**  
PMA Description: Program Management Support and Travel.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	32.820	39.301	25.502	-	25.502	Continuing	Continuing	N/A

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604706F / <i>Life Support Systems</i>	<b>Project (Number/Name)</b> 65412A / <i>Life Support Systems</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Life Support Systems RDTE Efforts</i></b>																												
Aircrew Performance Aircrew Laser Eye Protection - Technical Insertion (ALEP-TI)																												
Aircrew Performance/Female Equipment																												
Next Generation Fixed Wing Helmet																												
Next Generation Ejection Seat																												
Female Bladder Relief																												
Physiological Monitoring																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604706F / <i>Life Support Systems</i>	<b>Project (Number/Name)</b> 65412A / <i>Life Support Systems</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Life Support Systems RDTE Efforts</i></b>				
Aircrew Performance Aircrew Laser Eye Protection - Technical Insertion (ALEP-TI)	1	2023	3	2028
Aircrew Performance/Female Equipment	1	2023	4	2025
Next Generation Fixed Wing Helmet	1	2023	4	2024
Next Generation Ejection Seat	1	2023	4	2027
Female Bladder Relief	1	2023	4	2028
Physiological Monitoring	1	2023	4	2023

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	100.322	152.569	224.783	0.000	224.783	51.625	56.215	58.146	65.168	0.000	708.828
652286: <i>Combat Training Range Equipment</i>	-	100.322	152.569	224.783	0.000	224.783	51.625	56.215	58.146	65.168	0.000	708.828
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

Advanced Radar Threat System Tech Development, changed from ARTS V4.

**A. Mission Description and Budget Item Justification**

COMBAT TRAINING RANGES (CTR): Portfolio provides electronic warfare equipment and support to Air Force combat training ranges for training, testing, and evaluation of aircrews. Development and integration efforts include: aircraft pods, radar emitters, advanced radar emitters, communication jammers, command and control and debrief capability, and instrumentation equipment. All development efforts support USAF aircraft for Joint, Coalition, and Live Virtual Constructive (LVC) training events.

This program leverages digital acquisition tenets of open, agile, and digital. This program will develop Common component in collaboration with other weapon systems, to reduce redundant costs between systems with similar subsystems requirements. It will also invest in analytical, information management, data management, digital environments, networks, facilities, and security infrastructure upgrades directly supporting development and sustainment of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions.

ADVANCED RADAR THREAT SYSTEM (ARTS): The ARTS program will design, develop, and test threat systems based on replicating advanced foreign fielded Surface-to-Air Missile (SAM) radar and Electronic Warfare (EW) threat systems. The ARTS variants will be used at Department of Defense (DoD) test and training ranges for 4th and 5th generation aircrew training and tactics development. ARTS variants are also developed for LVC integration and full simulation training. Efforts include but are not limited to: research, studies, technology development, engineering, and manufacturing advanced radar emitters.

MODERNIZATION RANGE THREATS SYSTEMS (RTS): The RTS program supports upgrading and modifying legacy range threat systems to provide combat training relevancy and enhanced systems capabilities. Legacy systems include Multiple Threat Emitter System (MUTES), Miniature Multiple Threat Emitter System (Mini-MUTES), Modular Threat Emitter (MTE) system, Tactical Radar Threat Generator (TRTG) system, Band Simulator, Unmanned Modular Threat Emitter (UMTE) system, and Joint Threat Emitter (JTE) system.

LIVE MISSION OPERATIONS CAPABILITY (LMOC): LMOC is an effort to modernize range control centers with common hardware and software that can support live-synthetic training missions. LMOC will provide a node-based enterprise that integrates all range system capabilities, including pre/post mission coordination, in a multi-level secure environment to enable blended live-synthetic training for 4th/5th generation aircraft and aircrew.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>
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P6 COMBAT TRAINING SYSTEM (P6CTS): P6CTS replaced the existing P5 Combat Training System (P5CTS). P6CTS will resolve existing critical training capability gaps and will enable comprehensive, realistic air combat training. Key upgrades include a trusted operating system, Multiple Level Security (MLS) architecture, Type 1 encryption of over-air data, and increased processing capability. P6CTS investment will support a robust Air-to-Air and Air-to-Ground combat training environment and provide a growth path to Blended Training capability.

The FY2025 funding request was reduced by \$10 million to account for the availability of prior year execution balances

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023 1.739M was expended for civilian pay expenses in this program element, and in FY2024 4.237M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	103.784	152.569	235.960	0.000	235.960
Current President's Budget	100.322	152.569	224.783	0.000	224.783
Total Adjustments	-3.462	0.000	-11.177	0.000	-11.177
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-3.462	0.000			
• Other Adjustments	0.000	0.000	-11.177	0.000	-11.177

**Change Summary Explanation**

FY 23 reduced -\$3.462M for Small Business Innovative Research (SBIR).

The FY2025 funding request was reduced by \$10 million to account for the availability of prior year execution balances and some minor adjustments

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Advanced Radar Threat System-Variant 1 (ARTS-V1)	0.100	0.000	0.000

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<p><b>Description:</b> ARTS-V1 program to design, develop, build, and test radar threat systems based on advanced strategic, long-range, re-locatable foreign fielded SAM radar threat systems is now in production. ARTS-V1 leverages an existing DoD test resource development program to reduce non-recurring development cost, minimize schedule risk, and promote range interoperability between test and training. The focus of the program is to develop realistic radar threat systems meant to test 5th Generation aircraft capabilities.</p> <p><b>FY 2024 Plans:</b> N/A</p> <p><b>FY 2025 Plans:</b> N/A</p>			
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<p><b>Title:</b> Advanced Radar Threat System-Variant 3 (ARTS-V3)</p> <p><b>Description:</b> ARTS-V3 program will design, develop, build, and test advanced Surface-to-Air Missile (SAM) radar threat systems. ARTS-V3 will replicate strategic/tactical threats at the fidelity necessary for 5th generation multi-domain platform engagements. The ARTS-V3 requirement is to develop a modular radar threat system that has a growth path to replicate multiple advanced SAM threats and support Live Virtual Constructive (LVC) training. Efforts include but are not limited to: development of Production Representative Articles (PRA), development of command and control software, digital engineering, and efforts focused on integrating ARTS-V3 into test and training ranges plus LVC architectures.</p> <p><b>FY 2024 Plans:</b> Development of ARTS-V3 Production Representative Articles (PRA) in X and C frequency bands for developmental and operational testing. Efforts include but are not limited to: PRA development, engineering, manufacturing, software development, developmental tests. Work includes development, test and delivery of small versions of the PRA radar technology to support F-35 and B-21 developmental test needs.</p> <p><b>FY 2025 Plans:</b> Completion of sub-system testing activities, manufacturing development, final assembly, full-system level developmental testing, software development, software integration, training range integration, high fidelity digital model integration, additional software threat development, and begin operational testing and site acceptance testing of the X band and C band PRA.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>	83.152	123.858	184.544
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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Funding increased to support ramp-up in EMD-phase contract activity associated with final PRA hardware assembly and checkout, full-scale system testing and integration, deficiency report resolution, and Engineering Changes necessary to establish production baseline.				
<p><b>Title:</b> Advanced Radar Threat System Tech Development</p> <p><b>Description:</b> The ARTS Tech Development (formerly ARTS V4) for follow on variants will design, develop, and test threat systems based on replicating advanced foreign fielded Surface-to-Air Missile (SAM) radar and Electronic Warfare (EW) threat systems. The ARTS variants will be used at Department of Defense (DoD) test and training ranges for 4th generation, 5th generation, and 5th generation plus aircrew training and tactics development. ARTS variants are also developed for LVC integration and full simulation training. Efforts include but are not limited to: research, studies, technology development, engineering, and manufacturing advanced radar emitters.</p> <p><b>FY 2024 Plans:</b> N/A</p> <p><b>FY 2025 Plans:</b> This is not a new start. Work previously covered and formerly labeled as ARTS V4 for the purpose of supporting ARTS family of range threat systems with tech development and prototyping for advanced threats not addressed by current ARTS variants (V1,V3). Planned work will expand spectrums beyond X and C frequency bands to address existing and future threats.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to tech development and prototyping to defend against upcoming and existing threats not addressed by current ARTS variants.</p>		0.000	0.000	8.077
<p><b>Title:</b> Live Mission Operations Capability (LMOC)</p> <p><b>Description:</b> LMOC is an effort to modernize training range control centers with common hardware and software that can support live-synthetic training missions. LMOC provides a node-based software enterprise that integrates all range system capabilities, including pre/post mission coordination, in a multi-level secure environment to enable blended live-synthetic training for 4th/5th generation aircraft and aircrew.</p> <p><b>FY 2024 Plans:</b> Development and testing of additional capabilities for War Room such as Mission Planning, Live Execution, Debrief, Performance-based Training and Mission Support applications. Continue development and testing of a multi-level secure platform to provide the capability to guise, filter, or block data as required.</p> <p><b>FY 2025 Plans:</b></p>		4.864	6.970	10.176

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Development and testing of additional capabilities for WarRoom such as Mission Planning, Simulation and Display (SIMDIS) software, Joint Anti-Air Modeling (JAAM) and Pre/Post Mission applications. Continue development of multi-level security to provide the capability to guise, filter or block data as required.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased to allow the program to continue to develop and deliver minimum viable capability releases to the field. Increased funding will also support, but not limited to test and integration activities for LMOC WarRoom to include PRISM development and testing.</p>			
<p><b>Title:</b> P6 Combat Training System (P6CTS)</p> <p><b>Description:</b> P6CTS will replace the existing P5CTS and the Misawa/Osan/Kunsan/Kadena Instrumentation Training System (MOKKITS). P6CTS will resolve existing critical training capability gaps and will enable comprehensive, realistic air combat training. Key upgrades include a trusted operating system, Multiple Level Security (MLS) architecture, Type 1 encryption of over-air data, and increased processing capability. P6CTS investment will support a robust Air-to-Air and Air-to-Ground combat training environment and provide a growth path to Blended Training capability.</p> <p><b>FY 2024 Plans:</b> Product development, test, and continued aircraft integration on the F-15, F-16, F-35, T-38, and B-52. Rehost P6CTS ground subsystem on Live Mission Operation Capability Center (LMOC) platform infrastructure. Application toward cost-shared Class I Engineering Change Proposals (ECPs) to address Diminishing Manufacturing Sources and Material Shortages (DMSMS).</p> <p><b>FY 2025 Plans:</b> Development, test, and continued aircraft integration based on ACC prioritization. Rehost P6CTS ground subsystem on Live Mission Operation Capability Center (LMOCC) platform infrastructure. Funds will also be applied toward Class I Engineering Change Proposals (ECPs) to address Diminishing Manufacturing Sources and Material Shortages (DMSMS).</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> P6CTS funds increase due to test and integration activities for Air Force unique requirements to include F-16 specific forward umbilical, Portable Support Equipment Subsystem (PSES) optimization, Diminishing Manufacturing Sources and Material Shortages (DMSMS) resolution, and investigation of platform agnostic internal mount solutions.</p>	12.206	21.741	21.986
<b>Accomplishments/Planned Programs Subtotals</b>	100.322	152.569	224.783

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 03 Line Item 834190: <i>Combat Training Ranges</i>	139.213	103.977	290.791	-	290.791	352.838	224.091	224.329	222.912	0.000	1,558.151
• OPAF 05 Line Item 861900: <i>Spares and Repair Parts</i>	8.094	0.744	0.760	-	0.760	0.776	0.806	0.823	0.839	0.000	12.842
• APAF 07 Line Item 000075: <i>Other Production Charges</i>	21.973	57.086	81.864	-	81.864	69.462	23.008	51.482	52.503	0.000	357.378

**Remarks**

**E. Acquisition Strategy**

The acquisition strategy varies by effort. Overall strategy is competition focused, with the use of but not limited to other transaction authority, cost plus and fixed price contracts.

Live Mission Operation Center (LMOC) - Overall acquisition strategy employs an Army sponsored Indefinite Deliver Indefinite Quantity (IDIQ) Cost Plus Fixed Fee commercial contract vehicle and various Government organizational partners to employ industry best practices and agile software methodology to deliver Minimum Viable Products (MVP) in an iterative process in order to enhanced Air Force live training range infrastructure.

P6CTS overall acquisition strategy is to leverage existing Navy contracts to accomplish system integration onto Air Force platforms and Air Force Ranges, system optimization/perfection, and DMSMS management activities.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>	<b>Project (Number/Name)</b> 652286 / <i>Combat Training Range Equipment</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Radar Threat System-Variant 1 (ARTS-V1) Development	Various	Georgia Tech Research : Pax River, MD	-	0.100	Nov 2022	-		-		-		-	0.000	0.100	-
Advanced Radar Threat System-Variant 2 (ARTS-V2) Development	C/FPIF	Lockheed Martin : Grand Prairie, TX	-	-		-		-		-		-	0.000	0.000	-
Advanced Radar Threat System-Variant 3 (ARTS-V3) Development	C/FFP	SAAB, LM, NG, DYNETICS : Various	-	61.386	May 2023	117.275	Apr 2024	179.854	Nov 2024	-		179.854	0.000	358.515	-
Advanced Radar Threat System Tech Development	Various	Various : Various	-	-		-		8.077	Nov 2024	-		8.077	Continuing	Continuing	-
Not specified.	Various	Various : TBD	-	-		-		-		-		-	0.000	0.000	-
P6 Combat Training System	Various	Various : Various	-	2.000	Apr 2023	15.541	Dec 2023	17.694	Dec 2024	-		17.694	0.000	35.235	-
Modernization Systems	Various	Various : Hill AFB, UT	-	-		-		-		-		-	0.000	0.000	-
Live Mission Operation Capability (LMOC)	Various	Georgia Tech Research : Various	-	4.700	Jan 2023	4.567	Mar 2024	4.699	Dec 2024	-		4.699	0.000	13.966	-
<b>Subtotal</b>			-	68.186		137.383		210.324		-		210.324	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Radar Threat Systems-Variant 3 (Direct Msn Spt)	Various	Various : Various	-	2.000	Dec 2022	1.500	Oct 2023	0.760	Dec 2024	-		0.760	0.000	4.260	-
Advanced Radar Threat Systems-Variant 3 (Direct Cite Authority Civ Pay)	Various	Various : Various	-	1.000	Feb 2023	1.650	Oct 2023	1.740	Oct 2024	-		1.740	0.000	4.390	-
LMOC (Direct Cite Authority Civ Pay)	Various	Various : Various	-	-		0.823	Oct 2023	2.350	Oct 2024	-		2.350	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>	<b>Project (Number/Name)</b> 652286 / <i>Combat Training Range Equipment</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LMOC (Intergovernmental Support Agreement)	Various	Not specified. : TBD	-	-		0.450	Oct 2023	0.450	Oct 2024	-		0.450	Continuing	Continuing	-
P6CTS (Direct Cite Authority Civ Pay)	Various	Various; Various : TBD	-	-		2.000	Feb 2024	2.000	Oct 2024	-		2.000	0.000	4.000	-
<b>Subtotal</b>			-	3.000		6.423		7.300		-		7.300	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Radar Threat Systems-Variant 3	C/Various	Not specified. : TBD	-	3.500	Dec 2022	2.643	Mar 2024	1.590	Feb 2025	-		1.590	0.000	7.733	-
P6 Combat Training System	C/Various	Not specified. : TBD	-	21.886	Apr 2023	1.200	Nov 2023	2.192	Nov 2024	-		2.192	0.000	25.278	-
LMOC	PO	Not specified. : TBD	-	-		0.165	Dec 2023	0.959	Dec 2024	-		0.959	Continuing	Continuing	-
<b>Subtotal</b>			-	25.386		4.008		4.741		-		4.741	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Radar Threat Systems-Variant 3 (Program Support Cost - Contractor Services)	Various	Various : Hill AFB, UT	-	3.000	Dec 2022	0.790	Feb 2024	0.470	Feb 2025	-		0.470	0.000	4.260	-
Advanced Radar Threat Systems-Variant 3 (Program Support Cost - Other Govt. Costs)	Various	Various : Hill AFB, UT	-	-		-		0.130	Oct 2024	-		0.130	Continuing	Continuing	-
LMOC (Program Support Cost - Contractor Services)	Various	Various : Hill AFB, UT	-	0.300	Nov 2022	0.915	Feb 2024	1.483	Jun 2025	-		1.483	0.000	2.698	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>	<b>Project (Number/Name)</b> 652286 / <i>Combat Training Range Equipment</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LMOC (Program Support Cost - Other Govt. Costs)	Various	Various : Hill AFB, UT	-	-		0.050	May 2024	0.235	Dec 2024	-		0.235	Continuing	Continuing	-
P6 Combat Training System (Program Support Cost - Contractor Support costs)	Various	Various : Hill AFB, UT	-	0.450	Apr 2023	2.000	Feb 2024	-		-		-	0.000	2.450	-
P6 Combat Training System (Program Support Cost - Other Govt. Costs)	Various	Various : Hill AFB, UT	-	-		1.000	May 2024	0.100	Oct 2024	-		0.100	0.000	1.100	-
Modernization Systems (Program Support Cost - Contractor Support)	Various	AFLCMC/XA : Hill AFB, UT	-	-		-		-		-		-	0.000	0.000	-
Modernization Systems (Program Support Cost - Other Govt. Costs)	Various	Not specified. : Hill AFB, UT	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	3.750		4.755		2.418		-		2.418	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	100.322	152.569	224.783	-	224.783	Continuing	Continuing	N/A

**Remarks**  
 ARTS V2 program terminated for the convenience of the government.

Combat Training Ranges Support Costs. Program Support Costs are defined as direct, unique program costs (other than payroll costs for government personnel) required for the operation of a program office in its management and oversight role. The financing of program support costs must be consistent with: a) the type of work being performed; b) where the program resides within the acquisition phase (lifecycle); and c) existing regulatory and statutory doctrine, including coverage governing the purpose of an appropriation. (T-1).

Combat Training Ranges MAJCOM FM, FOA or DRU Offices will budget program support costs on an annual basis and reflect in the FY the requirement is projected to execute; requirements will be budgeted and executed in the weapon system or PEC within the procurement, RDT&E, or O&M appropriations. (T-1). For multi-year appropriations, execution of program support costs may occur in any year of funds currently available.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>	<b>Project (Number/Name)</b> 652286 / <i>Combat Training Range Equipment</i>

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Combat Training Range Equipment</b>																												
P6 CTS - Integration on USAF Aircraft																												
-- P6 CTS - F-15/16 Aircraft Test & Integration																												
Advanced Radar Threat System-Variant 1(ARTS-V1) EMD Phase																												
-- ARTS-V1 PRA Contract																												
-- ARTS-V1 DT-E and OT-E																												
-- ARTS-V1 Milestone C																												
Advanced Radar Threat System-Variant 3 (ARTS-V3) System Spec Definition																												
-- ARTS-V3 Intelligence Assessment																												
-- ARTS-V3 Intelligence Model Development																												
Advance Radar Threat System (ARTS-V3) Development																												
-- Digital Modeling and Subscale Prototype Efforts																												
-- ARTS-V3 Request For Proposal (RFP) for Production Representative Article (PRA)																												
-- ARTS-V3 PRA Contract Award																												
-- ARTS-V3 PRA Development																												
Variable Aperture Digital Radar Command and Control (VADR C2) Application Development																												
Modernization Systems																												
-- Mini-MUTES Upgrade																												

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>							<b>Date: March 2024</b>						
<b>Appropriation/Budget Activity</b> 3600 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>				<b>Project (Number/Name)</b> 652286 / <i>Combat Training Range Equipment</i>					

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Live Mission Operations Capability (LMOC)																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604735F / <i>Combat Training Ranges</i>	<b>Project (Number/Name)</b> 652286 / <i>Combat Training Range Equipment</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Combat Training Range Equipment</b>				
P6 CTS - Integration on USAF Aircraft	1	2024	4	2026
-- P6 CTS - F-15/16 Aircraft Test & Integration	1	2024	4	2026
Advanced Radar Threat System-Variant 1(ARTS-V1) EMD Phase	1	2023	2	2023
-- ARTS-V1 PRA Contract	1	2023	3	2023
-- ARTS-V1 DT-E and OT-E	3	2023	2	2024
-- ARTS-V1 Milestone C	2	2023	4	2023
Advanced Radar Threat System-Variant 3 (ARTS-V3) System Spec Definition	1	2023	3	2024
-- ARTS-V3 Intelligence Assessment	1	2023	4	2023
-- ARTS-V3 Intelligence Model Development	1	2023	3	2023
Advance Radar Threat System (ARTS-V3) Development	1	2023	1	2026
-- Digital Modeling and Subscale Prototype Efforts	1	2023	3	2023
-- ARTS-V3 Request For Proposal (RFP) for Production Representative Article (PRA)	1	2023	3	2023
-- ARTS-V3 PRA Contract Award	3	2023	3	2023
-- ARTS-V3 PRA Development	3	2023	1	2026
Variable Aperture Digital Radar Command and Control (VADR C2) Application Development	1	2024	1	2026
Modernization Systems	1	2023	4	2024
-- Mini-MUTES Upgrade	1	2023	4	2023
Live Mission Operations Capability (LMOC)	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604932F / <i>Long Range Standoff Weapon</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	2,852.150	921.891	911.406	623.491	0.000	623.491	601.584	288.272	76.487	77.997	0.000	6,353.278
657011: <i>LONG RANGE STAND-OFF</i>	2,852.150	921.891	911.406	623.491	0.000	623.491	601.584	288.272	76.487	77.997	0.000	6,353.278
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Program MDAP/MAIS Code:** 489

**A. Mission Description and Budget Item Justification**

The Long Range Stand-Off (LRSO) Cruise Missile is a long-range survivable stand-off weapon capable of delivering lethal nuclear effects on strategic targets. LRSO will replace the currently fielded Air Launched Cruise Missile (ALCM) and will be integrated on both legacy and future bomber aircraft. The LRSO weapon system will be capable of penetrating and surviving advanced Integrated Air Defense Systems (IADS) from significant stand-off range to prosecute strategic targets in support of the Air Force's global attack capability and strategic deterrence core function.

Funds may be used to address emerging or short-notice Diminishing Manufacturing Sources and Material Shortage (DMSMS) and supply chain issues.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.00M was expended for civilian pay expenses in this program element, and in FY24 \$0.00M is forecasted for civilian pay expenses in this program element.

The program is conducting Engineering and Manufacturing Development (EMD) tasks to validate requirements to support Development and Operational Testing, and Production Readiness.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604932F / <i>Long Range Standoff Weapon</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	928.850	911.406	704.911	0.000	704.911
Current President's Budget	921.891	911.406	623.491	0.000	623.491
Total Adjustments	-6.959	0.000	-81.420	0.000	-81.420
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	20.442	0.000			
• SBIR/STTR Transfer	-27.390	0.000			
• Other Adjustments	-0.011	0.000	-81.420	0.000	-81.420

**Change Summary Explanation**

FY 2023 adjustments are 20.442 million on FY23-28IR; Small Business Innovative Research (SBIR) totaling -27.390 million and minor administrative adjustments

FY 2025 adjustments account for a realignment of 81.4 million within the LRSO program

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> Long Range Stand-Off (LRSO) Weapon Development	740.718	653.245	412.091
<b>Description:</b> Long Range Stand-off weapon development includes the Cruise Missile, payload and aircraft integration, logistics support systems, mission planning, and component and subsystem test and evaluation.			
<b>FY 2024 Plans:</b>			
The program will continue to design, develop, integrate and test the LRSO weapon system through the Engineering and Manufacturing Development contract.			
During FY24, The program plans to conduct B-52 flight envelope testing and begin Development Test and Evaluation program execution.			
Related FY24 Activities include, but are not limited to, the following:			
- continue reliability growth, manufacturability, and maintainability maturation activities in preparation for formal Development Test and Evaluation activities.			
- continue systems engineering activities focusing on design for reliability and design for manufacturing.			
- continue test activities, such as, but not limited to, continued envelope testing and weapon system flight tests.			
- continue planning for Production Readiness Reviews prior to the build of the Initial Operational Test & Evaluation (IOT&E) units.			
- continue qualification and nuclear hardness testing to verify the system operates in intended environments.			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604932F / <i>Long Range Standoff Weapon</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- continue planning and development of the logistics support systems.</li> <li>- develop and build associated carriage and launcher equipment, trainers, test equipment and support equipment.</li> <li>- continue to plan, develop, and mature support systems to include Common Support Equipment/Peculiar Support Equipment and transportation equipment.</li> <li>- continue planning for the use of Model Based System Engineering tools during Operations and Sustainment phase in order to transform supply chain management.</li> <li>- continue to mature the weapon system by conducting trade studies, system engineering, test activities, and system modeling and simulation.</li> <li>- continue to further develop analytical, information technology, and data management capabilities.</li> <li>- continue to implement information systems and information technology design to support program execution.</li> <li>- continue to expand and mature the analytical, information technology, test, and data management capabilities to ensure access to weapon system design information is properly controlled and securely transmitted between government and contractors.</li> <li>- continue to modify, modernize, and expand the analytic environment and labs to support EMD activities to enable full execution of the program's capability to own the technical baseline throughout the program life cycle. This involves establishing a digital engineering system including a supporting environment/infrastructure to perform digital activities, collaborate with and communicate across stakeholders.</li> <li>- continue to plan and execute critical software risk reduction activities.</li> <li>- continue to plan and execute payload and aircraft integration efforts.</li> <li>- continue to, through best program practices, ensure the following are met: requirements flow down, requirement allocation to hardware and software, and the requirements compliance matrix.</li> </ul> <p><b>FY 2025 Plans:</b>                      The program will continue to design, develop, integrate and test the LRSO weapon system through the Engineering and Manufacturing Development (EMD) contract.                      During FY25, The program plans to continue Development Test and Evaluation program execution on B-52.                      Related FY25 Activities include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>- continue reliability growth, manufacturability, and maintainability maturation activities in preparation for formal Development Test and Evaluation activities.</li> <li>- continue systems engineering activities focusing on design for reliability and design for manufacturing.</li> <li>- continue test activities, such as, but not limited to, continued envelope testing and weapon system flight tests.</li> <li>- continue planning for Production Readiness Reviews prior to the build of the Initial Operational Test &amp; Evaluation (IOT&amp;E) units.</li> <li>- continue qualification and nuclear hardness testing to verify the system operates in intended environments.</li> <li>- continue planning and development of the logistics support systems.</li> <li>- develop and build associated carriage and launcher equipment, trainers, test equipment and support equipment.</li> </ul>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604932F / <i>Long Range Standoff Weapon</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- continue to plan, develop, and mature support systems to include Common Support Equipment/Peculiar Support Equipment and transportation equipment.</li> <li>- continue planning for the use of Model Based System Engineering tools during Operations and Sustainment phase in order to transform supply chain management.</li> <li>- continue to mature the weapon system by conducting trade studies, system engineering, test activities, and system modeling and simulation.</li> <li>- continue to further develop analytical, information technology, and data management capabilities.</li> <li>- continue to implement information systems and information technology design to support EMD execution.</li> <li>- continue to expand and mature the analytical, information technology, test, and data management capabilities to ensure access to weapon system design information is properly controlled and securely transmitted between the Government and contractors.</li> <li>- continue to modify, modernize, and expand the analytic environment and labs to support EMD activities to enable full execution of the program's capability to own the technical baseline throughout the program life cycle. This involves establishing a digital engineering system including a supporting environment/infrastructure to perform digital activities, collaborate with and communicate across stakeholders.</li> <li>- continue to plan and execute critical software risk reduction activities.</li> <li>- continue to plan and execute payload and aircraft integration efforts.</li> <li>- continue to, through best program practices, ensure the following are met: requirements flow down, requirement allocation to hardware and software, and the requirements compliance matrix.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to design efforts ramping down post System Critical Design Review (CDR).</p>				
<p><b>Title:</b> All-Up-Round</p> <p><b>Description:</b> All-Up-Round activities include payload integration and platform integration. Further, these efforts include activities and assets related to weapon design compatibility and qualification, and other nuclear certification activities with both threshold and objective aircraft.</p> <p><b>FY 2024 Plans:</b> During FY24, The program plans to continue joint LRSO and warhead testing and begin Development Test and Evaluation program execution. Related FY24 Activities include, but are not limited to, the following: - continue through program practices to ensure the following are met: requirements flow down, requirement allocation to hardware and software, requirements compliance matrix, system performance, reliability, maintainability, product assurance, testability, producibility and supportability.</p>		125.186	176.791	137.670

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0604932F / <i>Long Range Standoff Weapon</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- continue facility and security infrastructure upgrades to enable secure connectivity and communication between Department of Defense (DoD), Department of Energy (DOE), and industry.</li> <li>- continue efforts to conduct parallel development, design, and test activities with the Department of Energy (DOE) to ensure the LRSO adequately integrates the DOE designed warhead into the system.</li> <li>- conduct safety studies and nuclear certification activities.</li> <li>- continue to perform aircraft integration efforts including activities associated with integration on threshold aircraft and aircraft mission planning system upgrades to accommodate the new weapon.</li> <li>- conduct joint DoD and DOE ground and flight activities to verify the missile to warhead interface and demonstrate the system meets performance specifications.</li> <li>- continue to collaborate with the National Nuclear Security Administration (NNSA) to ensure seamless integration of DOE warhead assets into the cruise missile.</li> <li>- continue to execute and improve the unified certification strategy which meets nuclear surety, cyber security, and nuclear safety requirements.</li> <li>- continue other activities necessary for All-Up-Round integration. These efforts include: developing mission planning upgrade needs, Operational Flight Program (OFP) development and integration to deliver the OFP test tapes, planning activities necessary to integrate the LRSO with aircraft, and ensuring the logical, electrical, and physical interfaces of the LRSO as defined in the Interface Control Document (ICD).</li> </ul> <p><b>FY 2025 Plans:</b> During FY25, The program plans to continue Development Test and Evaluation program execution on B-52. Related FY25 Activities include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>- continue through program practices to ensure the following are met: requirements flow down, requirement allocation to hardware and software, requirements compliance matrix, system performance, reliability, maintainability, product assurance, testability, producibility and supportability.</li> <li>- continue facility and security infrastructure upgrades to enable secure connectivity and communication between Department of Defense (DoD), Department of Energy (DOE), and industry.</li> <li>- continue efforts to conduct parallel development, design, and test activities with the DOE to ensure the LRSO adequately integrates the DOE designed warhead into the system.</li> <li>- conduct safety studies and nuclear certification activities.</li> <li>- continue to perform aircraft integration efforts including activities associated with integration on threshold aircraft and aircraft mission planning system upgrades to accommodate the new weapon.</li> <li>- conduct joint DoD and DOE ground and flight activities to verify the missile to warhead interface and demonstrate the system meets performance specifications.</li> <li>- continue to collaborate with the NNSA to ensure seamless integration of DOE warhead assets into the cruise missile.</li> </ul>				

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604932F / <i>Long Range Standoff Weapon</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>- continue to execute and improve the unified certification strategy which meets nuclear surety, cyber security, and nuclear safety requirements.</p> <p>- continue other activities necessary for All-Up-Round integration. These efforts include: developing mission planning upgrade needs, Operational Flight Program (OFP) development and integration to deliver the OFP test tapes, planning activities necessary to integrate LRSO with aircraft, and ensuring the logical, electrical, and physical interfaces of the LRSO as defined in the Interface Control Document (ICD).</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to B-52 integration design activities ramping down post CDR.</p>			
<p><b>Title:</b> Test Support</p> <p><b>Description:</b> Conduct Test Support activities to support weapon development</p> <p><b>FY 2024 Plans:</b> The Government formally arranges and funds the use of Government flight test support for ground and flight test activities. During FY24, the program plans to conduct B-52 flight envelope testing and begin Development Test and Evaluation program execution. Related FY24 Activities include, but are not limited to, the following: - continue to perform design validation, verification, test, nuclear certification activities (to include design and operational certification) and system qualification activities. - continue test planning and execution activities to support the LRSO weapon development, All-Up-Round technical integration, warhead integration and aircraft integration. - continue coordination with external test agencies in preparation for operational and post-production flight testing.</p> <p><b>FY 2025 Plans:</b> The Government formally arranges and funds the use of Government flight test support for ground and flight test activities. During FY25, the program plans to continue Development Test and Evaluation program execution on B-52. Related FY25 Activities include, but are not limited to, the following: - continue to perform design validation, verification, test, nuclear certification activities (to include design and operational certification) and system qualification activities. - continue test planning and execution activities to support the LRSO weapon development, All-Up-Round technical integration, warhead integration and aircraft integration. - continue coordination with external test agencies in preparation for operational and post-production flight testing.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>	55.987	81.370	73.730

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604932F / <i>Long Range Standoff Weapon</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Funding decrease due to testing progress in FY24, resulting in fewer test activities in FY25.			
<b>Accomplishments/Planned Programs Subtotals</b>	921.891	911.406	623.491

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2025</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To</b>	<b>Total Cost</b>
	<b>Base</b>		<b>OCO</b>	<b>Total</b>						<b>Complete</b>	
• MPAF 02 MLRSO1: <i>Long Range Stand-Off Weapon</i>	31.454	66.816	210.335	-	210.335	295.523	1,074.934	1,685.006	2,210.506	4,051.604	9,626.178

**Remarks**

**E. Acquisition Strategy**  
 The acquisition strategy focuses on the development of the All-Up-Round Weapon System, integration with the nuclear warhead, executing aircraft integration activities, and conducting test and evaluation with a continued robust reliability and manufacturing approach. The program obtained a successful Milestone (MS) A decision in July 2016 and subsequently released a Request for Proposals. The program competitively selected two prime contractors in August 2017 to execute the Technology Maturation and Risk Reduction (TMRR) phase. The selected prime contractors executed the Cost-Plus-Fixed-Fee (CPFF) contracts during TMRR with activities focused on developing and maturing subsystem and system designs. In FY20, LRSO pivoted to a sole source TMRR contractor, enabling Development RFP (dRFP) release and MS B. MS B was approved via an Acquisition Decision Memorandum in June 2021 and a contract for Engineering and Manufacturing Development was awarded in July 2021.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 5				PE 0604932F / Long Range Standoff Weapon				657011 / LONG RANGE STAND-OFF								
<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Long Range Standoff Weapon Development	SS/CPFF	Various : TBD	2,275.348	710.351	Oct 2022	606.231	Oct 2023	362.763	Oct 2024	-		362.763	706.439	4,661.132	-	
<b>Subtotal</b>			2,275.348	710.351		606.231		362.763		-		362.763	706.439	4,661.132	N/A	
<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Aircraft Integration Planning	Various	Various : TBD	126.561	48.898	Oct 2022	60.670	Oct 2023	42.453	Oct 2024	-		42.453	0.000	278.582	-	
All-Up-Round Activities	Various	Various : TBD	70.755	76.288	Oct 2022	116.120	Oct 2023	95.217	Oct 2024	-		95.217	158.077	516.457	-	
<b>Subtotal</b>			197.316	125.186		176.790		137.670		-		137.670	158.077	795.039	N/A	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Test Support	Various	Various : TBD	180.276	55.987	Jan 2023	81.371	Jan 2024	73.730	Jan 2025	-		73.730	128.505	519.869	-	
<b>Subtotal</b>			180.276	55.987		81.371		73.730		-		73.730	128.505	519.869	N/A	
<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Program Management Administration	Various	Various : TBD	199.210	30.367	Oct 2022	47.014	Oct 2023	49.328	Oct 2024	-		49.328	73.472	399.391	-	
<b>Subtotal</b>			199.210	30.367		47.014		49.328		-		49.328	73.472	399.391	N/A	

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2025 Air Force</b>							<b>Date: March 2024</b>				
<b>Appropriation/Budget Activity</b> 3600 / 5				<b>R-1 Program Element (Number/Name)</b> PE 0604932F / Long Range Standoff Weapon			<b>Project (Number/Name)</b> 657011 / LONG RANGE STAND-OFF				
	<b>Prior Years</b>	<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	2,852.150	921.891		911.406		623.491	-	623.491	1,066.493	6,375.431	N/A

**Remarks**



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604932F / <i>Long Range Standoff Weapon</i>	<b>Project (Number/Name)</b> 657011 / <i>LONG RANGE STAND-OFF</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Long Range StandOff Weapon</i></b>				
Engineering and Manufacturing Development Phase	1	2023	2	2027
Critical Design Review	2	2023	2	2023
Milestone C Decision	3	2027	3	2027

**Note**

Engineering and Manufacturing Development Phase contract awarded July 2021.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604933F / ICBM Fuze Modernization
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	1,248.544	97.499	71.732	10.408	0.000	10.408	0.000	0.000	0.000	0.000	0.000	1,428.183
655082: <i>ICBM FUZE SUPPORT</i>	1,248.544	97.499	71.732	10.408	0.000	10.408	0.000	0.000	0.000	0.000	0.000	1,428.183
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Program MDAP/MAIS Code:** 0498

**A. Mission Description and Budget Item Justification**

The Intercontinental Ballistic Missile (ICBM) Fuze Modernization Program is designing and producing a functionally equivalent replacement for the current Mk21 fuze that will provide a 20-year threshold, 30-year objective design life. Currently available Mk21/W87-0 fuze quantities do not meet United States Strategic Command (USSTRATCOM) requirements and the current fuze is three times beyond its original ten year design life. The program will provide needed MMIII weapon system modifications, system testing, support/test equipment, data and training required to accommodate, field, and support the new Mk21 replacement fuze along with the W87-0 warhead as defined in the Air Force Global Strike Command (AFGSC) Requirements Traceability Memo dated 2 December 2013. In addition, the Joint Requirements Oversight Council (JROC) signed the program's JROC Memorandum validating the operational requirement for the program on 6 December 2016. A replacement Mk21/W87-0 fuze is urgently required to meet warfighter requirements and to ensure operational capability. The Mk21 reentry vehicle and fuze is designed to be deployed on the current Minuteman III (MMIII) and LGM-35A Sentinel weapon systems.

The US Air Force (USAF) will develop the modernized Mk21 fuze using the Department of Energy National Nuclear Security Administration (DOE/NNSA) complex and a weapons system integration contractor. The DOE/NNSA complex consists of Sandia National Labs-California (SNL-CA), Sandia National Labs-New Mexico (SNL-NM) and Kansas City National Security Campus (KCNSC). The ICBM Fuze Modernization program will leverage technologies, parts, components, and development/production capabilities resulting from extensive fuze work performed by the US Navy (USN) and DOE/NNSA on the Mk5/W88 Alt 370 Fuze program. The Radar Module remains entirely common with Mk5/W88 Alt 370, while the Pathlength Module and Thermal Battery Assembly designs and qualification activities remain highly leveraged and only contain minor differences from USN counterparts. Significant design aspects of the Missile Interface Controller Module, Launch Safety Device, and the Terminal Protection Device are also similar to USN counterparts. The Firing Set Interface Module shares common technology with the Mk5/W88 Alt 370 Firing Set.

The ICBM Fuze Modernization Program replacement fuze is designed to integrate into the MMIII and the LGM-35A Sentinel weapon systems, to include support/test equipment, data, flight test hardware, and training materials. The program will also conduct required system testing (including ground and flight tests). The program is coordinating Mk21 fuze replacement development efforts with the DOE/NNSA to synchronize USAF arming and fuze development activities with DOE/NNSA warhead requirements. When prudent, the program will conduct trade studies and initiate conceptual designs to address operational system issues and meet future requirements.

The Fiscal Year 2025 budget request continues cooperative efforts with the USN to leverage common components; conduct qualification tests; and continue development of lab, ground, and flight test assets. This program also includes any needed nuclear surety and certification and system vulnerability assessments.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604933F / <i>ICBM Fuze Modernization</i>
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As a cooperative USAF, USN and DOE/NNSA acquisition, the USAF is executing the program using Department of Defense (DoD) Manual 5030.55 Joint Nuclear Weapons Life Cycle Activities (Phase 6.X process) while using the DOD 5000-series instructions to meet Major Defense Acquisition Program (MDAP) statutory and regulatory requirements. The DOE/NNSA phase 6.X process is an iterative process that drives overlap and concurrency between activities and events that occur during the Engineering and Manufacturing Development (EMD) and Production and Deployment phases of the DoD 5000 Series Instruction.

This program entered Phase 6.4 Production Engineering of the Phase 6.X process in Jan 2019. The program received Milestone C approval in October 2021. The program will conduct production engineering tasks required to progress to the DOE/NNSA Phase 6.5 and DoD Full Rate Production Decision Review (FRPDR) in May 2024.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY2023 0.000M was expended for civilian pay expenses in this program element, and in FY2024 0.000M is forecasted for civilian pay expenses in this program element.

FY24 RDT&E funding for PE 64933F, ICBM Fuze Modernization, is in compliance with budgeted end items per the approved test strategy and FY23 Omnibus, Sec. 8059.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	98.376	71.732	10.390	0.000	10.390
Current President's Budget	97.499	71.732	10.408	0.000	10.408
Total Adjustments	-0.877	0.000	0.018	0.000	0.018
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.877	0.000			
• Other Adjustments	0.000	0.000	0.018	0.000	0.018

**Change Summary Explanation**

No significant changes

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604933F / <i>ICBM Fuze Modernization</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<p><b>Title:</b> Fuze Design and Development</p> <p><b>Description:</b> Design and develop the replacement Mk21 fuze required to support the ICBM W87-0 warhead. Coordinate design and development efforts with the ICBM weapon system integrator and support flight testing.</p> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>• Conduct Flight Test Unit 4 (FTU-4) Operational Test</li> <li>• Conduct AFA Qualification Evaluation Review</li> <li>• Analyze FTU-4 data and author FTU-4 Test Report</li> <li>• Complete DoD Independent Peer Review</li> <li>• Conduct Full Rate Production Decision Review</li> <li>• Conduct Fuze Mod Digital Model Development</li> <li>• Conduct entrance criteria and garner approval to enter DOE/NNSA Phase 6.5 Low Scale Production Phase</li> <li>• Conduct required qualification activities and garner First Production Unit approval</li> <li>• Further develop analytical, information technology, and data management capabilities</li> </ul> <p><b>FY 2025 Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to transition from development to production efforts in FY24</p>	78.199	59.782	0.000
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<p><b>Title:</b> Weapon System Integration/Systems Engineering</p> <p><b>Description:</b> Integrate the replacement Mk21 fuze into the Mk21 W87-0 Reentry Vehicle. Validate designs through ground tests on an Integrated Test Bed (ITB). Plan and conduct necessary ground and flight testing. Coordinate design, development and test efforts.</p> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>• Complete Nuclear Certification efforts including Basic Nuclear Safety Assessment Report and Nuclear Surety Evaluation Report</li> <li>• Complete ICBM Compatibility Certification Report</li> <li>• Support FTU-4 data analysis and reporting</li> <li>• Perform Phase IV of comparative analysis between current Fuze and Modernized Fuze</li> <li>• Conduct Fuze Mod Digital Model Development</li> <li>• Conduct various task team support</li> <li>• Complete Survivability Task Team (STT) efforts</li> <li>• Conduct Red Team Performance Assessment of SNL Radar</li> </ul>	19.300	11.950	10.408
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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0604933F / ICBM Fuze Modernization
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>• Develop SDR tester capability</li> </ul> <p><b><i>FY 2025 Plans:</i></b></p> <ul style="list-style-type: none"> <li>• Finalize comparative analysis</li> <li>• Continue Fuze Mod Digital Model Development</li> <li>• Complete USSTRATCOM Survivability Certification</li> <li>• Continue Red Team Performance Assessment of SNL Radar</li> </ul> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b>                      Funding decreased due to transition from development to production efforts</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	97.499	71.732	10.408

**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MPAF 03 Line Item M30FLH: <i>ICBM Fuze Mod</i>	137.364	158.789	144.375	-	144.375	123.564	110.274	100.274	0.728	1.673	777.041

**Remarks**

**E. Acquisition Strategy**

The ICBM Fuze Modernization program is executing a full cost reimbursable Strategic Partnership Project (SPP) with the DOE/NNSA complex using SNL-CA as the design agent and KCNSC as the production agent. The program is a collaborative effort with the USN reducing total program cost and development time by leveraging commonality between the ICBM and Submarine Launched Ballistic Missile fuze components. The USN Mk5/W88 Alt 370 fuze is being developed first, with the USAF Mk21 replacement fuze effort following. Both services participate in all design and development efforts to ensure maximum use of common components, subassemblies and technologies. Both services are using DOE/NNSA SNL-CA to perform fuze design and development. The USAF, as lead systems integrator for the Mk21 replacement fuze, competed a separate weapon system integration contract for integration support to assist the government with MMIII unique modifications and fuze integration efforts. Both services are using KCNSC to produce fuzes.

The program completed a Milestone C decision in October 2021 and is forecasted to complete a Full Rate Production Decision in 3QFY2024.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604933F / ICBM Fuze Modernization	<b>Project (Number/Name)</b> 655082 / ICBM FUZE SUPPORT
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fuze Preliminary Design Development	MIPR	Sandia National Labs : Albuquerque, NM	700.080	40.300	Nov 2022	13.200	Nov 2023	0.000	Nov 2024	-		0.000	0.000	753.580	753.580
Fuze EMD	Various	Various : Various	16.934	0.500	Nov 2022	2.770	Nov 2023	2.300	Nov 2024	-		2.300	0.000	22.504	22.504
Fuze Engineering Change Orders	Various	Various : Various	14.544	0.880	Nov 2022	1.562	Nov 2023	7.708	Nov 2024	-		7.708	0.000	24.694	24.673
Fuze National Security Campus (formerly Kansas City Plant)	MIPR	National Security Campus : Kansas City, MO	284.054	27.634	Nov 2022	37.410	Nov 2023	0.000	Nov 2024	-		0.000	0.000	349.098	349.098
Fuze Weapon System Integration - ICBM Prime	C/CPAF	Northrop Grumman : Clearfield, UT	25.937	-		-		-		-		-	0.000	25.937	25.937
Fuze Weapon System Integration - RS/RV Sub-System Contract (SSC)	C/CPAF	Lockheed Martin : Valley Forge, UT	84.691	-		-		-		-		-	0.000	84.691	84.691
Fuze Weapon System Integration Contract (WSIC)	C/CPFF	Lockheed Martin : Valley Forge, PA	44.228	17.344	Jan 2023	11.950	Jan 2024	-		-		-	0.000	73.522	76.151
<b>Subtotal</b>			1,170.468	86.658		66.892		10.008		-		10.008	0.000	1,334.026	N/A

**Remarks**  
FY22 prior years amount includes a 15.8M decrease due to an Above Threshold Reprogramming (ATR) to the Mk21A Reentry Vehicle Program (PE 0101328F).

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fuze Engineering Support - BAH	C/FP	Booz Allen Hamilton : Clearfield, UT	2.757	-		-		-		-		-	0.000	2.757	2.757
Fuze Engineering Support - ISC Support 1.0	C/FFP	BAE : Clearfield, UT	20.006	4.374	Nov 2022	1.620	Nov 2023	-		-		-	0.000	26.000	26.000
Fuze Engineering Support - ISC Support 2.0	C/TBD	TBD : TBD	0.000	-		0.000	Nov 2023	-		-		-	0.000	0.000	0.000
<b>Subtotal</b>			22.763	4.374		1.620		-		-		-	0.000	28.757	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604933F / ICBM Fuze Modernization	<b>Project (Number/Name)</b> 655082 / ICBM FUZE SUPPORT
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fuze Lead Project Office Support	MIPR	AFNWC : Albuquerque, NM	10.480	-		-		-		-		-	0.000	10.480	10.480
Fuze Finite Element Model Validation	C/CPFF	LMTF : Little Mountain, UT	1.843	-		-		-		-		-	0.000	1.843	1.843
Fuze Flight Test Support and Evaluation	Various	Various : Various	10.669	-		-		-		-		-	0.000	10.669	10.669
<b>Subtotal</b>			22.992	-		-		-		-		-	0.000	22.992	N/A

**Remarks**  
The design agent, Sandia National Laboratories (listed as Fuze Preliminary Design Development in the R-3 Development section), is executing the test and evaluation efforts within the main design effort. There are no discretely funded test and evaluation efforts outside of the design agent's activities.

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fuze Cost and Financial Management	C/FFP	Tecolote : Salt Lake City, UT	5.157	-		-		-		-		-	0.000	5.157	5.157
Fuze FFRDC Support	MIPR	Aerospace : Los Angeles, CA	8.828	-		0.780	Nov 2023	-		-		-	0.000	9.608	9.608
Fuze Program Support	C/FFP	BAE : Clearfield, UT	1.285	-		-		-		-		-	0.000	1.285	1.285
Fuze Program Support Costs	Various	Various : Various	17.051	6.467	Nov 2022	2.440	Nov 2023	0.400	Nov 2024	-		0.400	0.000	26.358	26.358
<b>Subtotal</b>			32.321	6.467		3.220		0.400		-		0.400	0.000	42.408	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		1,248.544	97.499	71.732	10.408	-	10.408	0.000	1,428.183	N/A

**Remarks**  
Prior year RDT&E includes \$10.037M in PE 0604222F FY11 and \$39.536M in PE 0604851F FY12

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604933F / ICBM Fuze Modernization	<b>Project (Number/Name)</b> 655082 / ICBM FUZE SUPPORT
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>AF ICBM Fuze Modernization Program</b>																																				
Engineering and Manufacturing Development																																				
Production and Deployment																																				
Production Readiness Review (Oct 2022)																																				
Fuze Mod Digital Model Development																																				
Flight Test 4 (Feb 2024)																																				
Full Rate Production Decision (May 2024)																																				
DOE/NNSA Phase 6.5 Entry (May 2024)																																				
First Production Unit (May 2024)																																				
Required Assets Available (RAA) (Feb 2025)																																				
DOE/NNSA Phase 6.6 Entry (May 2025)																																				

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0604933F / ICBM Fuze Modernization	<b>Project (Number/Name)</b> 655082 / ICBM FUZE SUPPORT

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>AF ICBM Fuze Modernization Program</b>				
Engineering and Manufacturing Development	1	2023	3	2025
Production and Deployment	1	2023	4	2028
Production Readiness Review (Oct 2022)	1	2023	1	2023
Fuze Mod Digital Model Development	1	2023	3	2027
Flight Test 4 (Feb 2024)	2	2024	2	2024
Full Rate Production Decision (May 2024)	3	2024	3	2024
DOE/NNSA Phase 6.5 Entry (May 2024)	3	2024	3	2024
First Production Unit (May 2024)	3	2024	3	2024
Required Assets Available (RAA) (Feb 2025)	2	2025	2	2025
DOE/NNSA Phase 6.6 Entry (May 2025)	3	2025	3	2025

**Note**

The ICBM Fuze Mod Program discovered the need to de-couple Milestone C and Full Rate Production (FRP) Decision from Phase 6.5 and Phase 6.6 entries respectively. At the time of the initial baseline in 2014, Phase 6.5 and Phase 6.6 were selected as the surrogates for the DoD milestones. Since that time differences between the DOE Phase 6.x process and the DoDI 5000 Series Instruction, as it relates to funding of Title 10 programs, drove a de-coupling of these milestones into the Acquisition Program Baseline. This program is still being managed according to the Phase 6.x process but Milestone C and FRP decisions have been added as milestones that will be accomplished to satisfy statutory requirements of a Major Defense acquisition program. Required Assets Available (RAA) has been identified as an adequate substitute for Initial Operating Capability (IOC).

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605030F <i>I Joint Tactical Network Center (JTNC)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	2.222	2.256	0.000	0.000	0.000	1.471	1.496	1.666	1.689	Continuing	Continuing
655068: <i>Joint Tactical Radio System (JTRS)</i>	-	2.222	2.256	0.000	0.000	0.000	1.471	1.496	1.666	1.689	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
 Joint Tactical Networking Center (JTNC) was funded using a Joint budget strategy. Each Military Department (MILDEP) would budget for approximately one-third of the total program RDT&E requirements for joint efforts. Beginning in FY25 and beyond, funding is to be aligned directly to Army PE 0605030A.

**A. Mission Description and Budget Item Justification**

No FY 2025 funding requested in the Program Element.

The Joint Tactical Networking Center (JTNC) is chartered to enable the Department of Defense (DoD)'s rapid identification, characterization, procurement, fielding, and sustainment of modular, innovative tactical communications products that ensure secure, interoperable, and resilient Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities. The JTNC provides technical expertise to facilitate tactical communications management, innovation, and standardization. The JTNC: (1) maintains a cyber-hardened DoD Information Repository (IR), (2) provides Technical Analyses/Capability Characterizations on tactical communications products, (3) provides Open Systems Architecture Standards, (4) provides exportability analysis and licensing reviews, and (5) serves as Technical Advisor to the Communications, Command, and Control Leadership Board (C3LB) and Tactical Communications Senior Steering Group (TCSSG).

JTNC mission is executed in coordination with key government stakeholders to include: C3LB, TCSSG, Communications Technologies and Waveforms Working Group (CTWWG), Resiliency Sub-Working Group (RSWG), the Department of Defense (DoD) Chief Information Officer (CIO), Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)), Joint Staff J6 (JS J6), The Under Secretary of Defense for Research and Engineering, abbreviated USD(R&E), and the Services. Particular attention is paid to ensuring that interagency work is collaborative and eliminates duplicative capability. The JTNC enables a common software baseline that is hardware agnostic leading to increased competition for Software Defined Radios (SDR).

Current JTNC directed requirements, outlined by the C3LB, consist of the CTWWG, Joint All-Domain Command and Control (JADC2) support, development/maturation of the DoD IR framework & Cloud migration, and development of the Joint Communications Marketplace (JCM) to meet DoD and Industry requirements in conjunction with DoD Instruction 4630.09. Through collaboration with USD R&E (INSS) and industry partners, JTNC is in the process of capturing information on resilient waveform technologies and portfolio products. The ultimate goal is to expedite market research activities by collecting, analyzing, and making data available in support of emerging Government waveform acquisitions. The JTNC and Joint Interoperability Test Command (JITC) co-chair the High-Frequency Interoperability and Architecture Sub-Working Group (HF I&A SWG) to resolve HF 3G and 4G interoperability issues, thus facilitating next-generation HF systems. The JTNC HF team is also pathfinding for a new tactical MIL-STD to provide more resilient communications. Additionally, the JTNC is engaged in the analysis of software artifacts involving high assurance devices,

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605030F / <i>Joint Tactical Network Center (JTNC)</i>
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such as software defined radios ported with specific waveforms to support National Security Agency (NSA) efforts. The JTNC participates in Standards-related activities such as the Interface Control Working Group (ICWG) and has been collaborating with the Army on the development of C4ISR/Electronic Warfare Modular Open Suite of Standards (CMOSS) specifications. Finally, the JTNC continues evolving its Waveform Assessment and Milestone Review (WASMR) and Capability Characterization processes.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	2.222	2.256	8.732	0.000	8.732
Current President's Budget	2.222	2.256	0.000	0.000	0.000
Total Adjustments	0.000	0.000	-8.732	0.000	-8.732
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Program Adjustment	0.000	0.000	-8.732	0.000	-8.732

**Change Summary Explanation**

Balance in FY23 through FY24 is attributed to a realignment from Air Force (PE 0605030F) to Army (0605030A) as per the Joint Budget Strategy outlined in the JTNC Tri-Military Department Resource Plan. FY25 and beyond is to be realigned to Army PE 0605030A.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Joint Tactical Networking Center (JTNC)	2.222	2.256	0.000
<b>Description:</b> Joint Tactical Networking Center (JTNC) aligns with the Communications, Command, and Control Leadership Board (C3LB), DoD Chief Information Officer (CIO), Joint Staff, the Services, and other key stakeholders for those JTNC chartered processes that ensure secure, interoperable, and resilient tactical communications. The JTNC provides technical expertise to facilitate tactical communications management, innovation, and standardization. The JTNC: (1) maintains a cyber-hardened DoD Information Repository (IR), (2) provides Technical Analyses/Capability Characterizations on tactical communications products, (3) provides Open Systems Architecture Standards, (4) provides exportability analysis and licensing reviews, and (5) serves as Technical Advisor to the Communications, Command, and Control Leadership Board (C3LB) and Tactical Communications Senior Steering Group (TCSSG).			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605030F / <i>Joint Tactical Network Center (JTNC)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>FY 2024 Plans:</b>                      JTNC serves as Chair of the Communications Waveforms and Technologies Working Group (CTWWG), supporting both TCSSG and C3LB efforts towards managing Joint warfighter challenges and fielding tactical communications solutions. JTNC performs technical analysis efforts for C3LB approved waveforms, in accordance with Service priorities and the FY 2024 JTNC Management Plan. The JTNC supports both the Services and Principal Staff Assistant (DoD CIO) in oversight of Lead Service activities as Technical Advisor, assisting in the identification and resolution of cross-service networking disconnects. The JTNC will remain engaged in Joint All Domain Command and Control (JADC2) Operational Planning Teams/ systems engineering support across the Services. The JTNC, through the efforts of the CTWWG's Resiliency Sub-Working Group, will coordinate and socialize resiliency terminology, processes, and support resources to design, test, compare, and field tactical radio products most capable of mitigating adversary detection, interception, geolocation, and jamming threats. The JTNC manages and maintains the DoD Information Repository (IR), providing controlled access for proprietary and nonproprietary waveforms and associated tactical communications products. The JTNC enhances DoD IR capabilities by evolving framework compliance and Cloud migration.</p> <p>The JTNC performs Joint Communications Marketplace (JCM) development to meet DoD and Industry requirements in conjunction with DoD Instruction 4630.09. The JTNC manages evolution of the JCM to provide value-added collaborative environment tools, enabling Government and Industry to share information on innovative technologies and DoD capability gaps leading to rapid acquisition efforts to meet warfighter needs. JCM capabilities/communities will support PEO C3T and Network Cross-Functional Team (N-CFT) requirements for Industry engagement, Technical Exchange Meetings (TEMs), whitepaper submission and evaluation, and contract efforts. The JTNC performs development of tactical communications vendor product capability characterizations for commercial off-the-shelf (COTS) and non-developmental item (NDI) tactical communication products. The JTNC will evolve DoD Waveform Standards to facilitate common development, interoperability and re-use, reducing product development time and facilitating faster delivery of capabilities to warfighters. Focused efforts will leverage emerging Spectrum activities and facilitate deployment of the Modular Radio Architecture (MRA). Finally, the JTNC will support export requests and analyses of products for exportability.</p> <p><b>FY 2025 Plans:</b>                      JTNC will continue to serve as Chair of the Communications Waveforms and Technologies Working Group (CTWWG), supporting both TCSSG and C3LB efforts towards managing Joint warfighter challenges and fielding tactical communications solutions. JTNC will continue technical analysis efforts for C3LB approved waveforms, in accordance with Service priorities and the FY 2024 JTNC Management Plan. The JTNC will continue to support both the Services and Principal Staff Assistant (DoD CIO) in oversight of Lead Service activities as Technical Advisor, assisting in the identification and resolution of cross-service networking disconnects. The JTNC will remain engaged in Joint All Domain Command and Control (JADC2) Operational Planning Teams/ systems engineering support across the Services. The JTNC, through the efforts of the CTWWG's Resiliency Sub-Working Group, will coordinate and socialize resiliency terminology, processes, and support resources to design, test, compare, and field tactical radio</p>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605030F / <i>Joint Tactical Network Center (JTNC)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>products most capable of mitigating adversary detection, interception, geolocation, and jamming threats. The JTNC will continue managing and maintaining the DoD Information Repository (IR), providing controlled access for proprietary and nonproprietary waveforms and associated tactical communications products. The JTNC will enhance DoD IR capabilities by evolving framework compliance and Cloud migration.</p> <p>The JTNC will continue Joint Communications Marketplace (JCM) development to meet DoD and Industry requirements in conjunction with DoD Instruction 4630.09. The JTNC will manage evolution of the JCM to provide value-added collaborative environment tools, enabling Government and Industry to share information on innovative technologies and DoD capability gaps leading to rapid acquisition efforts to meet warfighter needs. JCM capabilities/communities will continue to support PEO C3T and Network Cross-Functional Team (N-CFT) requirements for Industry engagement, Technical Exchange Meetings (TEMs), whitepaper submission and evaluation, and contract efforts. The JTNC will continue development of tactical communications vendor product capability characterizations for commercial off-the-shelf (COTS) and non-developmental item (NDI) tactical communication products. The JTNC will continue to evolve DoD Waveform Standards to facilitate common development, interoperability and re-use, reducing product development time and facilitating faster delivery of capabilities to warfighters. Focused efforts will leverage emerging Spectrum activities and facilitate deployment of the Modular Radio Architecture (MRA). Finally, the JTNC will continue to support export requests and analyses of products for exportability.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY25 funding decreased as per the Joint Budget Strategy to realign funding to Army PE 0605030A during the execution year.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	2.222	2.256	0.000

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**  
Joint Tactical Networking Center (JTNC) was funded using a Joint budget strategy through FY24. Each Military Department (MILDEP) would budget for approximately one-third of the total program RDT&E requirements for joint efforts. As of FY25 and beyond, funding is to be realigned directly to Army PE 0605030A.

**E. Acquisition Strategy**  
The Joint Tactical Networking Center (JTNC) is a Joint support program to the Services, the DoD Chief Information Officer (CIO), the Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)), and USD Research and Engineering (USD(R&E)). JTNC core functions as defined in the JTNC Acquisition Decision Memorandum and Charter signed on 20 January 2014 and revalidated on 13 September 2019 include execution in the following areas: Information Repository, Technical Analysis, Open Systems Architecture Standards, Exportability Analysis and Licensing Review, and Technical Advisor to the C3LB. The services derived from these core functions reinforce an acquisition environment which ensures that interoperable, secure, and resilient joint tactical waveforms and wireless communications applications can operate in a variety of hardware transport solutions.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605030F <i>I Joint Tactical Network Center (JTNC)</i>	

The FY 2025 Budget supports continued development/maturation of the DoD IR, analysis of directed software and artifacts, support of the National Security Agency (NSA) Commercial Communications Security (COMSEC) Evaluation Program (CCEP), JTNC Standards Interface Control Working Group (ICWG), the Capabilities Characterization and Joint Communications Marketplace (CC & JCM). The FY 2025 budget supports the Lead Service Initiative where JTNC will serve as a technical advisor and source of engineering and analytic resources in the conduct of Joint enterprise-level systems engineering and analysis and support DoD CIO. The FY 2025 budget supports the continued management of Joint warfighter challenges and solutions as assigned by the TCSSG. The FY 2025 budget supports Modular Radio Architecture (MRA) work, where JTNC will lead development and promulgation of a framework containing a collection of DoD standards and a description or architecture of how to use these to compose or control a communications system. The MRA defines how to implement a communications system or radio on select platforms.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605030F / Joint Tactical Network Center (JTNC)	<b>Project (Number/Name)</b> 655068 / Joint Tactical Radio System (JTRS)
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Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JTNC Engineering/ Technical Support, Test and Evaluation, Product Development Support and Program Management	C/Various	G2SS, NIWC PAC/ LANT, APG : CA	-	2.222	Oct 2022	2.256	Oct 2023	0.000	Nov 2024	-		0.000	Continuing	Continuing	-
<b>Subtotal</b>			-	2.222		2.256		0.000		-		0.000	Continuing	Continuing	N/A

**Remarks**  
Not a new start program. FY22 through FY24 funding programmed to Army PE 0605030A via PDM as per the Joint Budget Strategy outlined in the JTNC Tri-Military Department Resource Plan.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	2.222	2.256	0.000	-	0.000	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605030F / Joint Tactical Network Center (JTNC)	<b>Project (Number/Name)</b> 655068 / Joint Tactical Radio System (JTRS)

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Open Systems Architecture</b>	
Standards Conformance Evaluations	
<b>JTNC - Information Repository</b>	
DoD Waveform Information Repository	
<b>JTNC - Standards</b>	
Evolve Waveform Standards and SCA	
<b>JTNC - Analysis</b>	
Analyze Waveforms and Associated Artifacts	
<b>Joint Communications Marketplace (JCM) and Capabilities Characterization (CC)</b>	
JCM, CC Development	
<b>TCSSG, CTWWG</b>	
Support to TCSSG and CTWWG activities	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605030F / <i>Joint Tactical Network Center (JTNC)</i>	<b>Project (Number/Name)</b> 655068 / <i>Joint Tactical Radio System (JTRS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Open Systems Architecture</b>				
Standards Conformance Evaluations	1	2023	4	2029
<b>JTNC - Information Repository</b>				
DoD Waveform Information Repository	1	2023	4	2029
<b>JTNC - Standards</b>				
Evolve Waveform Standards and SCA	1	2023	4	2029
<b>JTNC - Analysis</b>				
Analyze Waveforms and Associated Artifacts	1	2023	4	2029
<b>Joint Communications Marketplace (JCM) and Capabilities Characterization (CC)</b>				
JCM, CC Development	1	2023	4	2029
<b>TCSSG, CTWWG</b>				
Support to TCSSG and CTWWG activities	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605031F / <i>Joint Tactical Network (JTN)</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.452	0.000	0.000	0.000	3.690	3.767	3.903	3.980	0.000	15.792
655068: <i>Joint Tactical Radio System (JTRS)</i>	-	0.000	0.452	0.000	0.000	0.000	3.690	3.767	3.903	3.980	0.000	15.792
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**  
 All continuing JTN efforts are funded in Army Program Element (PE) 0605031A (JTN), Navy PE 0605031N (shared), Air Force PE 0605031F (shared) and United States Marine Corps (USMC) Marine Corps Communications Systems MCPC 112107. As part of the Joint Enterprise Network Manager (JENM) Joint Program budget strategy, the Air Force and Army budget for approximately one-third each of the total Program funds for JENM efforts. The Navy and USMC combined funding equals the other one-third of the JENM Program funding. Prior to the year of execution, Navy and Air Force funding is consolidated in the Army PE (0605031A) and software sustainment funds are realigned between Research, Development, Test and Evaluation (RDT&E) (EF5) and Other Procurement Army (OPA) (B99318) to support the Joint Program acquisition strategy. USMC funding will be provided on an annual basis via Military Interdepartmental Purchase Request (MIPR).

**A. Mission Description and Budget Item Justification**

The Joint Enterprise Network Manager JENM software provides a single, converged network management tool allowing the Warfighter to plan, configure, load, and manage the Joint Services' Tactical Radios and their networks in the field - a capability not available in legacy planning systems. JENM funding supports several types of tactical radios, such as the Manpack and Rifleman, enabling them to utilize Mobile Ad Hoc Networking MANET and other waveforms to include: Mobile User Objective System MUOS waveform, Demand Assigned Multiple Access DAMA Satellite Communications SATCOM, Integrated Waveform IW, and Single Channel Ground and Airborne Radio System SINCGARS waveform. Using its Over-the-Air-Management OTAM functionality, JENM provides the Commander the ability to quickly reconfigure critical networks. JENM enhances the S6's ability to conduct Course of Action COA Analysis and the Military Decision Making Process MDMP, providing commanders critical information regarding their ability to communicate.

FY 2025 funding will continue radio planner development efforts to design, engineer, integrate, and test planning and management capabilities for the Tactical Radio network in support of the Advanced Networking Waveform ANWf. Continued development provides further integration of the Integrated Tactical Network ITN and Network Management of its emerging systems to enable Soldiers the ability to effectively manage the ITN. Radio planner development efforts will also support MUOS Waveform Planning Continuing System Improvements and rapid provisioning of MUOS end-user terminals.

Planning applications are deployed on, and critically tied to, the Ruggedized Application Platform - Tactical Radios RAP-TR hardware from the Division to Company level.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605031F <i>I Joint Tactical Network (JTN)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	0.452	3.595	0.000	3.595
Current President's Budget	0.000	0.452	0.000	0.000	0.000
Total Adjustments	0.000	0.000	-3.595	0.000	-3.595
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-3.595	0.000	-3.595

**Change Summary Explanation**

FY2025 funds have been realigned to the Army (PE 0605031A), per the Joint Service Agreement.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> Joint Tactical Networks JTN - Product Development	0.000	0.452	0.000
<b>Description:</b> Product Development Efforts			
<b>FY 2024 Plans:</b> The funding will support to JENM design, engineering, integration, and test of planning and management application for the Tactical Radio network. Support to align with Army Network Modernization to provide further integration of the lower and mid-tier Network Management for Integrated Tactical Network ITN to enable Soldiers the ability to manage the entire consolidated tactical network in conjunction with network elements managed by Sailors, Marines, and Airmen. Development funding will also support completion of MUOS waveform planning simplification and rapid provisioning of MUOS end-user terminals for joint service requirements.			
JENM planning applications are deployed on, and critically tied to the RAP-TR hardware from Division to the Company level.			
FY2024 funds have been realigned to the Army (PE 0605031A), per the Joint Service Agreement, any remaining funding in this line will also be realigned according to the Joint Service Agreement.			
<b>FY 2025 Plans:</b> The funding will continue support to JENM design, engineering, integration, and test of planning and management application for the Tactical Radio network. Support to align with Army Network Modernization to provide further integration of the lower and mid-			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605031F / <i>Joint Tactical Network (JTN)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
<p>tier Network Management for Integrated Tactical Network ITN to enable Soldiers the ability to manage the entire consolidated tactical network in conjunction with network elements managed by Sailors, Marines, and Airmen. Development funding will also support completion of MUOS waveform planning simplification and rapid provisioning of MUOS end-user terminals for joint service requirements.</p> <p>JENM planning applications are deployed on, and critically tied to the RAP-TR hardware from Division to the Company level.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY24 to FY25 decrease reflects full Air Force service contribution moved to 0605031A per the Joint Service Agreement.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.452	0.000

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**  
PE 0605031A contains only the JTN Product Manager (PdM) Waveforms and PdM Tactical Cyber Network Operations (TCNO) JENM RDT&E funding.

JENM is funded using a Joint budget strategy. Each Military Department (MILDEP) budgets for approximately one-third of the total program RDT&E requirements for joint efforts. Out-year funding is programmed in PE 0605031A by the Army, PE 0605031N by the Navy, and PE 0605031F by the Air Force. USMC funding will be provided on an annual basis via Military Interdepartmental Purchase Request (MIPR). Prior to submission of the President's Budget, the funding from Navy (PE 0605031N) and Air Force (PE 0605031F) is consolidated with Army (PE 0605031A) for execution per the Office of the Secretary of Defense (OSD) direction. Funds are realigned from Navy (PE 0605031N) and Air Force (PE 0605031F) to Army (PE 0605031A) as per the JTN (JENM) Acquisition Program Baseline (APB) and Tri-Service Funding agreement.

JENM and baseline planning applications are deployed on the RAP-TR hardware from the Division to Company level. JENM Logistics & Training capabilities are captured under the Joint Network Management System OPA-2 line (JNMS B99318). JENM will continue system improvements for JENM v3.5.X development, which includes upgrades of MUOS, upgrades to JENM Public Key Infrastructure (PKI) certificate management, and cyber enhancements.

**E. Acquisition Strategy**  
The Joint Program Executive Office JPEO Joint Tactical Radio System JTRS Acquisition Decision Memorandum ADM of 11 Jul 2012 authorized the JPEO JTRS to transition to the Joint Tactical Network JTN program, which transferred JTRS MDAP programs of record to the Services, and renamed the JTRS Network Enterprise Domain NED program to the JTN program, which transitioned to the Army. The Joint Tactical Networking Center JTNC ADM of 20 Jan 2014 officially chartered the JTNC, assigned responsibility for the development and sustainment of JENM to the Program Manager PM JTN under PdM JENM, and transitioned waveform development and sustainment to the Services. The Army Program Executive Office PEO Command Control Communications Tactical C3T Memos of 25 Jun 2015 transferred all program, development, and configuration control of JENM from Product Manager PdM JENM under PM JTN to PdM WIN-T INC 3 which became PdM

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

**Appropriation/Budget Activity**  
3600: *Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)*

**R-1 Program Element (Number/Name)**  
PE 0605031F *Joint Tactical Network (JTN)*

Tactical Cyber Network Operations TCNO under PM Tactical Network formally PM WIN-T. PdM TCNO now falls under PM Integration, Interoperability & Services I2S , within PEO C3T.

Product Manager for TCNO manages a Government Owned, Government Operated (GOGO) Software Development and Integration Facility which employs competitive contracting strategies for software development and sustainment of the network manager components to ensure warfighter access to the best technology and innovative capabilities while addressing emerging threats and future requirements via an affordable, operationally effective, and timely framework.

The Army will continue a radio planner effort that will plan, manage, and provision capabilities for simplified workflow based on planning solutions to rapidly meet emerging capability requirements stemming from Network Cross Functional Team (CFT) initiatives and directed requirements.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605031F / <i>Joint Tactical Network (JTN)</i>	<b>Project (Number/Name)</b> 655068 / <i>Joint Tactical Radio System (JTRS)</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Joint Tactical Network</i></b>	
Acquisition Program Baseline (APB) Duration	
JENM v3.5 Logistics & Training Support	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605031F / <i>Joint Tactical Network (JTN)</i>	<b>Project (Number/Name)</b> 655068 / <i>Joint Tactical Radio System (JTRS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Joint Tactical Network</i></b>				
Acquisition Program Baseline (APB) Duration	4	2026	4	2029
JENM v3.5 Logistics & Training Support	1	2023	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	37.262	36.582	41.223	0.000	41.223	45.079	46.002	47.666	48.607	Continuing	Continuing
656060: <i>Standards Management</i>	-	37.262	36.582	41.223	0.000	41.223	45.079	46.002	47.666	48.607	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Open Architecture Management Office (OAMO) at the Air Force Life Cycle Management Center is responsible for developing, evolving, and managing open standards. Open standards permit Department of Defense programs to reduce acquisition and life-cycle costs as well as the risks associated with development, sustainment, technology refresh, and capability upgrades of mission systems on weapon systems. The OAMO continues to manage the Open Mission Systems (OMS) and the Universal Command and Control Interface (UCI) Standards. The OAMO will continue executing efforts to mature various open standards and government reference architectures (GRAs) to ensure compatibility and interoperability to meet program needs. Finally, OAMO will continue to enable application of open standards in weapon system designs, and to enable open standards and GRAs to transition to OAMO management.

OAMO provides funding to multiple entities, including but not limited to the Air Force Research Laboratory (AFRL), the 76th Software Engineering Group (76 SWEG), defense contractors, Federally Funded Research and Development Centers, and University Affiliated Research Centers in support of standards management activities. AFRL is responsible for executing science and technology initiatives to further develop the OMS/UCI Standards. The 76 SWEG is responsible for key activities and deliverables for the OMS and UCI standards Starter Kit, updating the Government critical abstraction layer, maintaining the Reference Implementation, integrating, and testing the Mission Package, completing Change Package Development and Sponsorship, supporting the Open Mission Systems (OMS) and Universal Command and Control Interfaces (UCI) management activities, providing support to adopting programs, and providing training and associated documentation. These entities will also be funded to support activities for other open standards and GRA initiatives Managing a collaborative tools environment, updating tools in the OMS/UCI Defense contractors have been on contract for over 5 years working as one government led consortium (the Open Architecture Collaborative Working Group (OACWG)) to produce the OMS/UCI standards, and new to 2023 was an included subset of the OACWG, The Normalization Subgroup (NS) which researches, determines, and evolves the set of normalized UCI messages, behaviors, and use cases as well as support the inclusion of the additions into the OMS/UCI Standards. The NS is responsible for delivering an updated digital model (ECD 2025) and providing principles and methodology to the annual OMS/UCI standards.

The OAMO will continue to develop the Government Avionics Reference Architecture (GARA) which provides a reference architecture and digital engineering model (e.g., Model Based Systems Engineering (MBSE)) for legacy platforms to adopt an open architecture approach as defined in the NDAA and to follow senior leader direction. GARA is a key initiative to ensure alignment and interoperability of legacy programs, break "vendor-lock" to increase competition while lowering capability upgrade cost and enable legacy platforms to upgrade at a pace relevant to today's threat.

The OAMO will execute P3I initiatives as required and include activities such as specifically targeted improvements to open standards and open architecture initiatives (e.g., Sensor Open Systems Architecture), coordination with other standardization efforts, enhancements (including cybersecurity, as required), and widening the relevancy and applicability of the standards the OAMO is involved with.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>
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This program element may include necessary civilian pay expenses required to manage, execute, and deliver open standards capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F.

This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver Open Architecture Management for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0056.”

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	38.201	36.582	44.028	0.000	44.028
Current President's Budget	37.262	36.582	41.223	0.000	41.223
Total Adjustments	-0.939	0.000	-2.805	0.000	-2.805
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.939	0.000			
• Other Adjustments	0.000	0.000	-2.805	0.000	-2.805

**Change Summary Explanation**

The FY 2025 funding request was reduced by \$2.877 million to account for the availability of prior year execution balances.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Open Architecture Management Office	37.262	36.582	41.223
<b>Description:</b> Accomplish all industry activities that result in the annual release of the OMS and UCI standards along with the associated documentation, including training materials. Manage government activities to support the OMS and UCI Standards. GARA will complete an initial reference architecture (RA) Fall 23 comprised of OMS/UCI, Big Iron, and SOSA aligned hardware and will continue maturing the RA and model in support of adopting programs and incorporating other open architectures into the			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>RA. Conduct activities to add capability and evolve standards and open architecture initiatives managed and supported by the OAMO to existing open standards and/or initiate new open standards to meet acquisition needs.</p> <p><b>FY 2024 Plans:</b> Continue to modify and update the existing OMS and UCI Standards to include normalized behaviors to increase and widen the pool of OMS/UCI applicability, account for emerging technologies, adjust for program specific needs, and conduct targeted training. In coordination with industry partners and government agencies, complete all activities (including quarterly common governance boards) to develop annual releases of the OMS/UCI Standards. Provide government expertise to support open standards and open architecture development efforts. Continue the development and maturation of GARA which includes integration of additional open standards into the GARA while supporting adopting programs. Execute activities to enhance the applicability of open standards and GRAs, and to enable open standards and GRAs to transition to OAMO management.</p> <p><b>FY 2025 Plans:</b> Continue to modify and update the existing OMS and UCI Standards to increase and widen the pool of OMS/UCI applicability, account for emerging technologies, adjust for program specific needs, and conduct targeted training. In coordination with industry partners and government agencies, complete all activities (including monthly common governance boards) to advance quarterly engineering releases and annual releases of the OMS/UCI Standards. Provide government expertise to support open standards and open architecture development efforts. Continue development and maturation of GARA to a state that is ready for transfer to a collaborative industry consortium similar to OMS/UCI's OACWG. Execute activities to enhance the applicability of open standards and GRAs, and to enable open standards and GRAs to transition to OAMO management.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY25 funding increased by \$4.641 million compared to FY24 due to continued support for OMS and UCI, development of GARA, and other open standard and open architecture efforts.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	37.262	36.582	41.223

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
The Air Force Life Cycle Management Center's OAMO awarded a follow-on contract to continue the standards management activities conducted under a previously classified Air Force RDT&E Program Element. The contract is a cost-plus fixed fee (CPFF) indefinite delivery/indefinite quantity (ID/IQ) that was awarded in December 2018. The first delivery order has a period of performance of 3 years beginning 1 January 2019. A second delivery order with a one-year period of performance was awarded in first quarter of FY2021 to cover the period 1 January 2022 through 31 December 2022. A period of performance extension will be exercised for January

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>	
2023 through 31 December 2023. Follow-on contract through the Air Force Life Cycle Management Center's XA directorate under the XA IDIQ will have a period of performance of 2 years, 1 January 24 through 31 December 2025.		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>	<b>Project (Number/Name)</b> 656060 / <i>Standards Management</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Open Architecture Collaborative Working Group - BAE Systems	C/CPFF	BAE Systems : Nashua, NH	-	1.250	Dec 2022	0.000	Dec 2023	0.000	Dec 2024	-		0.000	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Boeing	C/CPFF	Boeing Company : St. Louis, MO	-	2.966	Dec 2022	3.495	Dec 2023	3.495	Dec 2024	-		3.495	Continuing	Continuing	-
Open Architecture Collaborative Working Group - General Atomics ASI	C/CPFF	Anduril Industries Inc : Washington, DC	-	0.515	Dec 2022	3.215	Dec 2023	2.276	Dec 2024	-		2.276	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Collins Aerospace	C/CPFF	Collins Aerospace : Cedar Rapids, IA	-	0.643	Dec 2022	0.855	Dec 2023	0.855	Dec 2024	-		0.855	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Lockheed Martin	C/CPFF	Lockheed Martin : Fort Worth, TX	-	5.935	Dec 2022	5.133	Dec 2023	5.133	Dec 2024	-		5.133	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Northrop Grumman	C/CPFF	Northrop Grumman : Melbourne, FL	-	8.454	Dec 2022	8.151	Dec 2023	8.151	Dec 2024	-		8.151	Continuing	Continuing	-
Open Architecture Collaborative Working Group - Raytheon	C/CPFF	Raytheon Company : El Segundo, CA	-	2.804	Dec 2022	2.204	Dec 2023	2.204	Dec 2024	-		2.204	Continuing	Continuing	-
Open Architecture Collaborative Working Group - General Dynamics	C/CPFF	General Dynamics : Fairfax, VA	-	1.917	Dec 2022	1.705	Dec 2023	1.705	Dec 2024	-		1.705	Continuing	Continuing	-
76th Software Maintenance Group (76 SMXG) Development	PO	76 SWEG : Tinker AFB, OK	-	4.600	Dec 2022	4.514	Dec 2023	5.672	Dec 2024	-		5.672	Continuing	Continuing	-
Air Force Research Laboratory (AFRL) Science and Technology Initiatives	MIPR	AFRL : Various	-	2.100	Dec 2022	1.968	Dec 2023	2.366	Dec 2024	-		2.366	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>	<b>Project (Number/Name)</b> 656060 / <i>Standards Management</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Studies (1)	PO	MITRE: : Bedford, MA	-	1.200	Dec 2022	0.000	Dec 2023	0.000	Dec 2024	-		0.000	Continuing	Continuing	-
Engineering Studies (2)	PO	MIT-LL : Lexington, MA	-	0.241	Dec 2022	0.540	Dec 2023	0.540	Dec 2024	-		0.540	Continuing	Continuing	-
SOSA Initiatives	Various	Existing IDIQ: : Various	-	1.321	Dec 2022	1.026	Dec 2023	3.139	Dec 2024	-		3.139	Continuing	Continuing	-
Government Avionics Reference Architecture (GARA)	SS/CPFF	GTRI UARC : Atlanta, GA	-	1.566	Dec 2022	2.482	Dec 2023	4.125	Dec 2024	-		4.125	Continuing	Continuing	-
<b>Subtotal</b>			-	35.512		35.288		39.661		-		39.661	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration	Various	OAM Program Office : Wright-Patterson AFB, OH	-	1.750	Jan 2023	1.294	Jan 2024	1.562	Jan 2025	-		1.562	Continuing	Continuing	-
<b>Subtotal</b>			-	1.750		1.294		1.562		-		1.562	Continuing	Continuing	N/A

			Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	37.262	36.582	41.223	-	41.223	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>	<b>Project (Number/Name)</b> 656060 / <i>Standards Management</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Develop and Evolve Standards</i></b>	
Quarterly Governance Boards	[REDACTED]
FY 2023 Annual Release of OMS/UCI Standards	[REDACTED]
FY 2024 Annual Release of OMS/UCI Standards	[REDACTED]
FY 2025 Annual Release of OMS/UCI Standards	[REDACTED]
FY 2026 Annual Release of OMS/UCI Standards	[REDACTED]
FY 2027 Annual Release of OMS/UCI Standards	[REDACTED]
FY 2028 Annual Release of OMS/UCI Standards	[REDACTED]
FY 2029 Annual Release of OMS/UCI Standards	[REDACTED]
FY 2023 Annual Integration Event	[REDACTED]
FY 2024 Annual Integration Event	[REDACTED]
FY 2025 Annual Integration Event	[REDACTED]
FY 2026 Annual Integration Event	[REDACTED]
FY 2027 Annual Integration Event	[REDACTED]
FY 2028 Annual Integration Event	[REDACTED]
FY 2029 Annual Integration Event	[REDACTED]
FY 2023 GARA Quarterly Model Update	[REDACTED]
FY 2024 GARA Quarterly Model Update	[REDACTED]
FY 2025 GARA Quarterly Model Update	[REDACTED]

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>	<b>Project (Number/Name)</b> 656060 / <i>Standards Management</i>
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
FY 2026 GARA Quarterly Model Update																													
FY 2027 GARA Quarterly Model Update																													
FY 2028 GARA Quarterly Model Update																													
FY 2029 GARA Quarterly Model Update																													
FY 2023 GARA Quarterly Configuration Management Plan Updates																													
FY 2024 GARA Quarterly Configuration Management Plan Updates																													
FY 2025 GARA Quarterly Configuration Management Plan Updates																													
FY 2026 GARA Quarterly Configuration Management Plan Updates																													
FY 2027 GARA Quarterly Configuration Management Plan Updates																													
FY 2028 GARA Quarterly Configuration Management Plan Updates																													
FY 2029 GARA Quarterly Configuration Management Plan Updates																													
FY 2023 GARA Quarterly Conformance Plan Updates																													
FY 2024 GARA Quarterly Conformance Plan Updates																													
FY 2025 GARA Quarterly Conformance Plan Updates																													
FY 2026 GARA Quarterly Conformance Plan Updates																													
FY 2027 GARA Quarterly Conformance Plan Updates																													

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>	<b>Project (Number/Name)</b> 656060 / <i>Standards Management</i>
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
FY 2028 GARA Quarterly Conformance Plan Updates																																
FY 2029 GARA Quarterly Conformance Plan Updates																																

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>	<b>Project (Number/Name)</b> 656060 / <i>Standards Management</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Develop and Evolve Standards</i></b>				
Quarterly Governance Boards	1	2023	4	2029
FY 2023 Annual Release of OMS/UCI Standards	1	2023	1	2023
FY 2024 Annual Release of OMS/UCI Standards	1	2024	1	2024
FY 2025 Annual Release of OMS/UCI Standards	1	2025	1	2025
FY 2026 Annual Release of OMS/UCI Standards	1	2026	1	2026
FY 2027 Annual Release of OMS/UCI Standards	1	2027	1	2027
FY 2028 Annual Release of OMS/UCI Standards	1	2028	1	2028
FY 2029 Annual Release of OMS/UCI Standards	1	2029	1	2029
FY 2023 Annual Integration Event	4	2023	4	2023
FY 2024 Annual Integration Event	4	2024	4	2024
FY 2025 Annual Integration Event	4	2025	4	2025
FY 2026 Annual Integration Event	4	2026	4	2026
FY 2027 Annual Integration Event	4	2027	4	2027
FY 2028 Annual Integration Event	4	2028	4	2028
FY 2029 Annual Integration Event	4	2029	4	2029
FY 2023 GARA Quarterly Model Update	1	2023	4	2023
FY 2024 GARA Quarterly Model Update	1	2024	4	2024
FY 2025 GARA Quarterly Model Update	1	2025	4	2025
FY 2026 GARA Quarterly Model Update	1	2026	4	2026
FY 2027 GARA Quarterly Model Update	1	2027	4	2027
FY 2028 GARA Quarterly Model Update	1	2028	4	2028

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605056F / <i>Open Architecture Management</i>	<b>Project (Number/Name)</b> 656060 / <i>Standards Management</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
FY 2029 GARA Quarterly Model Update	1	2029	4	2029
FY 2023 GARA Quarterly Configuration Management Plan Updates	1	2023	4	2023
FY 2024 GARA Quarterly Configuration Management Plan Updates	1	2024	4	2024
FY 2025 GARA Quarterly Configuration Management Plan Updates	1	2025	4	2025
FY 2026 GARA Quarterly Configuration Management Plan Updates	1	2026	4	2026
FY 2027 GARA Quarterly Configuration Management Plan Updates	1	2027	4	2027
FY 2028 GARA Quarterly Configuration Management Plan Updates	1	2028	4	2028
FY 2029 GARA Quarterly Configuration Management Plan Updates	1	2029	4	2029
FY 2023 GARA Quarterly Conformance Plan Updates	1	2023	4	2023
FY 2024 GARA Quarterly Conformance Plan Updates	1	2024	4	2024
FY 2025 GARA Quarterly Conformance Plan Updates	1	2025	4	2025
FY 2026 GARA Quarterly Conformance Plan Updates	1	2026	4	2026
FY 2027 GARA Quarterly Conformance Plan Updates	1	2027	4	2027
FY 2028 GARA Quarterly Conformance Plan Updates	1	2028	4	2028
FY 2029 GARA Quarterly Conformance Plan Updates	1	2029	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605057F / <i>Next Generation Air-refueling System</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	7.928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
652430: <i>Next Generation Tanker Development</i>	-	0.000	7.928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Program MDAP/MAIS Code:** 387

**Note**

Upon passage of FY 2024 appropriations, PE 0605057F, Next Generation Air-Refueling System (NGAS), Project 652430, Next Generation Tanker Development, Budget Activity 5, future tanker support funding will be transferred to PE 0605057F, Next Generation Air-Refueling System (NGAS), Project 640010, Next Generation Air-refueling System (NGAS), Budget Activity 4. This is a transfer of funding from Budget Activity 5 to Budget Activity 4, in order to provide transparency to the pre-MDAP NGAS program.

**A. Mission Description and Budget Item Justification**

NGAS is an accelerated, advanced air refueling system that meets the future needs of the joint force. NGAS will deliver adaptive and agile platform(s) and mission systems as part of a tanker Family of Systems by the mid-2030s. Air Mobility Command is currently leading an Analysis of Alternatives (AoA) effort that shapes requirements, refines the program's acquisition strategy, and determines the technology development timeline.

The Air Force's assessment includes clean sheet design(s) and purpose-built aircraft to address projected threats and needed capabilities and leverages benefits of full and open competition. The mission systems will include platform agnostic communications, threat agnostic defensive systems, and agile mission execution. The Department of the Air Force (DAF) will also identify opportunities to integrate the mission systems on KC-46A and Tanker Recapitalization aircraft.

Acquisition Agility Act (AAA) Prototyping separate from a Program of Record (POR).

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F and 0606398F. In FY 2023 \$0.000 million was expended for civilian pay expenses in this program element, and in FY 2024 \$0.000 million is forecast for civilian pay expenses in this program element.

This program has not passed Milestone B approval. Funding and efforts have been transferred to Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605057F / <i>Next Generation Air-refueling System</i>
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This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	7.928	0.000	0.000	0.000
Current President's Budget	0.000	7.928	0.000	0.000	0.000
Total Adjustments	0.000	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Support	0.000	7.928	-
<b>Description:</b> NGAS Mission Support/Program Standup - Studies and analyses to support NGAS planning activities for future initiatives, future tanker replacement planning, and other Program Office support to include but not limited to an Analysis of Alternatives (AoA), market research, acquisition planning, pre-milestone activities, RFP development, test planning, and various studies and analyses.			
<b>FY 2024 Plans:</b> Continuation of AoA activities to include but not limited to market research, acquisition planning, pre-milestone activities, RFP development, test planning, and various studies and analyses for new NGAS tanker development.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decrease due to a transfer from Budget Activity 5 to Budget Activity 4, PE 0605057F, NGAS, Project 640010, Next Generation Air-refueling System.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	7.928	-

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605057F / <i>Next Generation Air-refueling System</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 04 0605057F: <i>Next Generation Air-refueling System</i>	-	-	7.014	-	7.014	-	-	-	-	0.000	7.014

**Remarks**

**E. Acquisition Strategy**

The NGAS platform(s) will be clean sheet design(s) and purpose-built aircraft to address projected threats and needed capabilities and leverages benefits of full and open competition. The yet-to-be determined NGAS acquisition strategy will be based on a future approved CDD requirements and FAR/DFARS compliance. However, the notional acquisition approach is to award Technology Maturation Risk Reduction contracts that mature and develop key future technologies with multiple vendors. In addition, Science and Technology efforts will be funded to develop critical path technologies needed to meet attributes defined in the Advanced Air Refueling ICD to a Technology Readiness Level greater than 5.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force			<b>Date:</b> March 2024				
<b>Appropriation/Budget Activity</b> 3600 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0605057F / Next Generation Air-refueling System			<b>Project (Number/Name)</b> 652430 / Next Generation Tanker Development		

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>NGAS</b>	
Analysis of Alternatives	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605057F / <i>Next Generation Air-refueling System</i>	<b>Project (Number/Name)</b> 652430 / <i>Next Generation Tanker Development</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>NGAS</b>				
Analysis of Alternatives	1	2024	4	2024

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605223F / <i>Advanced Pilot Training</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	1,041.192	32.513	77.252	83.985	0.000	83.985	30.826	5.255	5.366	5.471	18.311	1,300.171
655340: <i>Advanced Trainer Replacement T-7A</i>	1,041.192	32.513	77.252	83.985	0.000	83.985	30.826	5.255	5.366	5.471	18.311	1,300.171
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Program MDAP/MAIS Code:** 436

**A. Mission Description and Budget Item Justification**

The Advanced Pilot Training (APT)/T-7A Red Hawk program will replace the Air Education Training Command's (AETC) aging T-38C fleet with new aircraft, Ground Based Training System (simulators, training devices, computer based training systems, academics, etc.), Maintenance Training System, and support infrastructure currently used in the fighter/bomber advanced Specialized Undergraduate Pilot Training track as well as in the Introduction to Fighter Fundamentals program. The APT/T-7A Red Hawk program acquisition strategy was approved by OSD (AT&L) in early FY 2017 (December 2016). At the same time, the APT/T-7A Red Hawk Team completed their Development Request for Proposal (RFP) Release Defense Acquisition Board and subsequently released the RFP to industry on 30 December 2016. The Program completed source selection evaluations and Milestone B in September 2018, and awarded a Fixed Price Incentive Firm (FPIF) Indefinite Delivery/Indefinite Quantity contract to The Boeing Company on 27 September 2018.

The Maintenance Training System (MTS) effort will be a Delivery Order under the TSA IV ID/IQ Contract and is planned to be awarded through a competitive process that will be awarded in 2024. The T-7A MTS will provide maintainers with the foundational skills and core competencies required to maintain the T-7A aircraft and its associated subsystems. The MTS will be a blended training solution to include a.) a suite of Maintenance Training Devices (MTDs) with associated support equipment; b.) Interactive Multimedia Instruction (IMI)/courseware and training material; c.) smart classrooms to facilitate instructor-led training; and d.) support environments to manage training schedules, student data, and updates to all training capabilities. The T-7A MTS program will encompass the design, development, integration, and test of the most efficient and effective combination of training capabilities, as well as Contractor Logistics Support (CLS) performance. Funding contained in this platform's documentation directly aids AETC flying training enterprise to continue its overall Future Years Defense Program pilot production increase starting in FY 2020, thus reducing the USAF Pilot Shortage. This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY 2023 \$1.785 million was expended for civilian pay expenses in this program element, and in FY 2024 \$2.654 million is forecast for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605223F / <i>Advanced Pilot Training</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	33.621	77.252	81.778	0.000	81.778
Current President's Budget	32.513	77.252	83.985	0.000	83.985
Total Adjustments	-1.108	0.000	2.207	0.000	2.207
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.108	0.000			
• Other Adjustments	0.000	0.000	2.207	0.000	2.207

**Change Summary Explanation**

FY 2023 funding was reduced by \$1.018 million for Small Business Innovation Research (SBIR).

FY 2025 funding was increased by \$2.207 million for ramp up and development of the Maintenance Training System (MTS).

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> Advanced Pilot Training (APT) Program	32.513	77.252	83.985
<b>Description:</b> The Advanced Pilot Training (APT) / T-7A Red Hawk program has an approved acquisition strategy, completed Milestone B, and has progressed into the Engineering and Manufacturing Development (EMD) phase. In FY 2020, the APT/T-7A Red Hawk program concluded the Critical Design Review for the Aircraft and Ground Based Training System. This effort includes studies, analysis, acquisition documentation, market research activities, and engineering changes to reduce risk and support the acquisition strategy and engineering and manufacturing development. It also includes Program Support Costs (PSC) such as travel, Other Government Costs (OGC), and Advisory and Assistance Services (A&AS).			
<b>FY 2024 Plans:</b> Program accepted three engineering manufacturing test aircraft and anticipate accepting delivery of two remaining engineering manufacturing test aircraft and multiple ground training devices. Start government flight test and continue Developmental Test & Evaluation.			
<b>FY 2025 Plans:</b>			

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605223F / <i>Advanced Pilot Training</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Continue Developmental Test & Evaluation, prepare for Initial Operation Test and Evaluation, and conduct Maintenance Training System (MTS) development, and execute engineering changes to include but not limited to supplemental aircraft boarding system/egress ladder.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased due to ramp up of Maintenance Training System (MTS) development.			
<b>Accomplishments/Planned Programs Subtotals</b>	32.513	77.252	83.985

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF 03 APT000: <i>Advanced Pilot Training T-7A</i>	10.507	0.000	235.207	-	235.207	548.486	524.987	835.700	852.307	3,818.303	6,825.497
• APAF 06 APT000: <i>Advanced Trainer Replacement T-7A</i>	0.000	0.000	19.638	-	19.638	43.161	37.545	54.982	56.076	292.808	504.210
• APAF 07 Line Item 000075: <i>Other Production Charges</i>	4.589	44.409	22.979	-	22.979	51.702	154.454	7.654	7.806	20.622	314.215
• OPAF 02 822990: <i>Cargo and Utility Vehicles</i>	0.000	1.104	0.000	-	0.000	0.000	0.000	1.116	1.137	0.000	3.357
• OPAF 02 825990: <i>Materials Handling Vehicles</i>	0.000	0.401	0.304	-	0.304	0.000	0.116	0.000	0.000	0.000	0.821
• OPAF 03 Line Item 837300: <i>Base Comm Infrastructure</i>	0.700	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.700
• OPAF 04 845010: <i>Base Procured Equipment</i>	0.000	11.444	22.850	-	22.850	19.722	14.791	11.208	11.429	0.000	91.444
• MILCON PE 0804701F: <i>T-7A (Advanced Pilot Trainer) Procurement</i>	4.938	39.543	138.100	-	138.100	241.650	182.223	0.000	0.000	0.000	606.454

**Remarks**  
Total MILCON funding is \$680.044 million which did not include FY 2020 \$31.600 million, FY 2021 \$23.400 million, and FY 2022 \$18.590 million of MILCON funds.

**E. Acquisition Strategy**  
The APT/T-7A Red Hawk Program will develop, test, acquire, and sustain an affordable, agile, and integrated APT System consisting of 351 aircraft, Ground Based Training System, Maintenance Training System, support, infrastructure, and personnel to meet Air Education and Training Command's (AETC) need date of FY 2027.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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**Appropriation/Budget Activity**  
3600: *Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)*

**R-1 Program Element (Number/Name)**  
PE 0605223F / *Advanced Pilot Training*

The APT/T-7A Red Hawk program's acquisition strategy leveraged market conditions by competing and awarding development, production, and initial sustainment in a single contract award. The Program completed source selection evaluations and Milestone B in September 2018, and awarded a Fixed Price Incentive Fee (FPIF) Indefinite Delivery, Indefinite Quantity (IDIQ) contract to The Boeing Company on 27 September 2018 to provide for development, integration, and testing needed to meet existing APT requirements.

Additional contract options are available for Low Rate Initial Production, Full Rate Production and initial sustainment transition. The Maintenance Training System will be procured under a separate contractual vehicle.

The Maintenance Training System (MTS) acquisition strategy is to acquire Maintenance Training Devices (MTDs), and associated support structure, for an AETC Centralized Training Facility (CTF) and four Unit Training Maintenance Facilities (UMTFs). The MTS delivery order will be conducted via TSA IV ID/IQ contract per FAR Part 16. The MTS EMD phase will develop and operationalize the CTF with MTD courseware, Training System Support Center (TSSC), the technical data package, and support equipment to ensure system availability and concurrency with the aircraft. The MTS Production phase will develop and operationalize a subset of MTDs for each of the four UMTFs. The Contractor Logistics Support (CLS) will encompass sustainment support of the MTDs at the CTF and UMTFs until two years post-production completion.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force												Date: March 2024			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 5				PE 0605223F / Advanced Pilot Training				655340 / Advanced Trainer Replacement T-7A							
Product Development (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Pilot Training Contracts	Various	Various : TBD	882.736	0.343	Jun 2023	21.324	Feb 2024	38.483	Apr 2025	-		38.483	17.184	960.070	1,057.316
<b>Subtotal</b>			882.736	0.343		21.324		38.483		-		38.483	17.184	960.070	N/A
Support (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Pilot Training Mission Support	Various	Various : Various	29.129	5.484	Dec 2022	8.457	Jan 2024	7.640	Dec 2024	-		7.640	4.496	55.206	-
Advanced Pilot Training Direct Cite Authority Civilian Pay	Various	AFLCMC : Dayton, OH	3.841	1.785	Oct 2022	2.654	Oct 2023	2.704	Oct 2024	-		2.704	14.808	25.792	-
<b>Subtotal</b>			32.970	7.269		11.111		10.344		-		10.344	19.304	80.998	N/A
Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Pilot Training Test Support	Various	Edwards AFB : Edwards AFB, CA	41.203	16.738	May 2023	31.276	Jan 2024	25.062	Jan 2025	-		25.062	23.882	138.161	-
<b>Subtotal</b>			41.203	16.738		31.276		25.062		-		25.062	23.882	138.161	N/A
Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advanced Pilot Training A&AS	Various	AFLCMC : Dayton, OH	46.735	5.127	Apr 2023	9.171	Feb 2024	6.837	Feb 2025	-		6.837	4.287	72.157	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605223F / <i>Advanced Pilot Training</i>	<b>Project (Number/Name)</b> 655340 / <i>Advanced Trainer Replacement T-7A</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Pilot Training PSC, Other Government Costs	Various	AFLCMC : Dayton, OH	37.548	3.036	Nov 2022	4.370	Jan 2024	3.259	Nov 2024	-		3.259	0.674	48.887	-
<b>Subtotal</b>			84.283	8.163		13.541		10.096		-		10.096	4.961	121.044	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		1,041.192	32.513	77.252	83.985	-	83.985	65.331	1,300.273	N/A

**Remarks**  
 Prior Years funding total of \$4.994 million was executed in PE 0604233F.

Prior years amounts and categories under Program 0604233F, Specialized Undergraduate Flight Training include Advanced Pilot Training Studies and Analysis, \$0.935 million; Advanced Pilot Training PMA Government Costs, \$1.383 million; and, Advanced Pilot Training A&AS, \$2.676 million.

FINANCIAL PERFORMANCE: Advanced Pilot Training (APT) T-7A Red Hawk is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, however, the Advanced Pilot Training (APT) T-7A Red Hawk EMD contract is a Fixed Price Incentive Fee (FPIF) contract with progress payments. Ten (10%) percent of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605223F / <i>Advanced Pilot Training</i>	<b>Project (Number/Name)</b> 655340 / <i>Advanced Trainer Replacement T-7A</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Advanced Pilot Training</i></b>				
Engineering and Manufacturing Development (EMD) Phase	1	2023	3	2025
Development, Test and Evaluation	1	2023	3	2025
Milestone C	3	2025	3	2025
Operational Test Readiness Review (OTRR)	1	2026	1	2026
Initial Operational Test & Evaluation (IOT&E)	2	2026	4	2026
Maintenance Training System Development	1	2025	4	2029
Full Rate Production Decision (FRPD)	2	2027	2	2027
Initial Operational Capability (IOC)	2	2028	2	2028
Aircraft / Ground Based Training System (GBTS) Production	3	2025	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605229F / HH-60W
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	1,968.319	27.722	48.268	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,044.309
654364: <i>Combat Rescue Helicopter</i>	1,968.319	27.722	48.268	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2,044.309
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Program MDAP/MAIS Code:** 479

**Note**

In FY 2025, PE 0605229F, HH-60W, Project 654364, Combat Rescue Helicopter, Budget Activity 5, System Development & Demonstration (SDD) efforts will transfer to PE 0605229F, HH-60W, Project 670001, HH-60W Modernization Development, Budget Activity 7, Operational Systems Development to transition the HH-60W program from production to post-production capability upgrades and sustainment.

**A. Mission Description and Budget Item Justification**

The Combat Rescue Helicopter (CRH) program will replace the aging HH-60G. The HH-60G currently supports the Air Force's core function of Personnel Recovery. The primary mission of the HH-60G is to conduct day / night / marginal weather Combat Search and Rescue (CSAR) in order to recover downed aircrew or other isolated personnel in hostile or non-permissive environments.

The CRH will be capable of employment day or night, in adverse weather, and across the full spectrum of threats to include chemical, biological, radiological, and nuclear. On-board defensive capabilities will permit the CRH system to operate with less risk than legacy systems in an increased threat environment. An in-flight air refueling capability will provide an airborne alert capability and extend its combat mission range. The CRH system is capable of conducting combat search and rescue airborne mission commander duties. The aircraft will be self-supporting to the maximum extent practical. The CRH system may also conduct other collateral missions inherent in their capabilities to conduct Personnel Recovery, such as non-conventional assisted recovery, non-conventional evacuation operations, defense support to civil authorities, civil search and rescue, international aid, emergency aeromedical evacuation, disaster/humanitarian relief, counter-drug activities, support for National Aeronautics and Space Administration flight operations, and insertion/extraction of combat forces.

The CRH development program procured a total of 11 aircraft as follows: 4 Engineering, Manufacturing, and Development (EMD) aircraft, 5 System Demonstration Test Article (SDTA) aircraft, and 2 modernization flight test aircraft. The CRH program office will procure necessary ground and flight assets required for both Development Test (DT) and Initial Operational Test & Evaluation (IOT&E). The CRH EMD program includes development of the complete CRH training system to include CRH Weapon System Trainer (WST), Operational Flight Trainer (OFT), Airframe Systems Trainer (AST), Avionics Desktop Trainer (AVDTT), other training devices, with associated spares and support equipment, as well as courseware required to perform flight, aircrew and maintenance training. Other development efforts include a systems integration laboratory, an avionics integration support facility, procurement of data rights and licenses, spares, aircraft, Government test, product support and program support costs (PSC). The CRH program will also pursue modernization efforts to develop and integrate enhancements in mission/defensive systems

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

**Appropriation/Budget Activity**  
3600: *Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)*

**R-1 Program Element (Number/Name)**  
PE 0605229F / *HH-60W*

and additional system upgrades to address critical capability gaps. The program office will utilize the additional flight test aircraft in support of modernization efforts to address emerging threats and evolving mission needs.

The Delta Training Device (DTD) effort will procure additional training assets, including but not limited to, maintenance and aircrew Crew Chief Part Task Trainers (CCPTT), aircrew Hoist Procedural Trainers (HPT), Virtual Reality (VR)/Mixed Reality (MR) maintenance aircrew trainers, associated spares and support equipment, as well as Type 1 training.

Capability upgrades and modernization development efforts for the CRH may include, but are not limited to, the following priorities: Situational Awareness Data Link/Automatic Direction Finder (SADL/ADF) Removal, Directional Infrared Countermeasures (DIRCM), Electro Optical/Infrared (EO/IR) Tactical Overlay, Global Positioning System Anti-Jam/Anti-Spoof (GPS-AJ), Degraded Visual Environment (DVE) system, Integrated Vehicle Health Monitoring System Control (IVHMS), Video Data Link (VDL), Radio Frequency Jammer (RF-Jammer), Mobile User Objective System (MUOS), Electronic Flight Bags, and Automated Dependent Surveillance Broadcast - In Device. Capability upgrades and modernization also supports inclusion for mandates, system enhancements, hardware and software changes for diminishing manufacturing sources and material shortages as well as Deficiency Report Resolutions. In addition, studies, development, prototyping, testing and integration of emerging technology and support equipment opportunities to increase the effectiveness of the platform are considered in capability upgrades and modernization initiatives.

The CRH program funding also supports innovation activities to include studies, analyses, requirements definition, and quick-reaction capability prototypes/demonstrations to accelerate planning for technology transition, technology insertion and future acquisition programs.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY 2023, \$4.540 million was expended for civilian pay expenses in this program element, and in FY 2024, \$5.879 million is forecast for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605229F / HH-60W
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	58.974	48.268	42.220	0.000	42.220
Current President's Budget	27.722	48.268	0.000	0.000	0.000
Total Adjustments	-31.252	0.000	-42.220	0.000	-42.220
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-29.500	0.000			
• SBIR/STTR Transfer	-1.752	0.000			
• Other Adjustments	0.000	0.000	-42.220	0.000	-42.220

**Change Summary Explanation**

FY 2023 funding request was reduced by a total of \$31.252 million which includes \$1.752 million for Small Business Innovation Research (SBIR) and \$29.5 million to account for the availability of prior year execution balances and Capabilities Upgrades schedule change.

FY 2025 funding request was reduced by \$42.220 million due to transfer of effort to Budget Activity 7, Operational System Development, PE 0605229F, HH-60W, Project 670001, HH-60W Modernization Development to transition the HH-60W program from production to post-production capability upgrades and sustainment.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> HH-60W Development	10.146	15.841	0.000
<b>Description:</b> Develop a new helicopter, associated training system and support elements that leverage fielded, non-developmental technologies to recapitalize the HH-60G fleet.			
<b>FY 2024 Plans:</b> Continue development efforts to include but not limited to include Tactical Cross-Domain Solution (TACDS), Failure Modes Effects Testing (FMET), and Baseline Master Plan (BLIMP).			
<b>FY 2025 Plans:</b> N/A			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to transfer of effort to Budget Activity 7, Operational System Development, PE 0605229F, HH-60W, Project 670001, HH-60W Modernization Development.			
<b>Title:</b> HH-60W Government Test and Evaluation	2.925	3.117	0.000

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605229F / HH-60W
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
<p><b>Description:</b> Conduct test and evaluation on the HH-60W and associated training systems to support DT&amp;E, IOT&amp;E, Live Fire Test and Evaluation (LFT&amp;E), and other test planning and organizational support.</p> <p><b>FY 2024 Plans:</b> Government testing to include operations testing, live-fire testing and evaluation tasks. Continue developmental and operational test for Capability Upgrades program.</p> <p><b>FY 2025 Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to transfer of effort to Budget Activity 7, Operational System Development, PE 0605229F, HH-60W, Project 670001, HH-60W Modernization Development.</p>			
<p><b>Title:</b> Capability Upgrades &amp; Modernization</p> <p><b>Description:</b> Modernize the HH-60W fleet by studying, prototyping, testing and integrating developmental and non-developmental technologies into the platform, including electro-optical infrared technology imaging system.</p> <p><b>FY 2024 Plans:</b> Continue modernization efforts to include prioritized capabilities, software release process, mandates, diminishing manufacturing sources and material shortages, Deficiency Report Resolutions, Operational Flight Programs, studies, prototyping testing and integration of emerging technologies, carry-on equipment, IDIQ Delivery Order 1 (DO1) and support equipment opportunities.</p> <p><b>FY 2025 Plans:</b> N/A</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to transfer of effort to Budget Activity 7, Operational System Development, PE 0605229F, HH-60W, Project 670001, HH-60W Modernization Development.</p>	14.651	29.310	0.000
<b>Accomplishments/Planned Programs Subtotals</b>	27.722	48.268	0.000

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• RDTE 07 0605229F: HH-60W	0.000	0.000	52.314	-	52.314	33.278	99.504	86.096	87.795	0.000	358.987

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605229F / HH-60W
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**D. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
• MILCON Line Item 0207229F: <i>Combat Rescue Helicopter</i>	24.395	0.000	0.000	-	0.000	0.000	0.000	0.000	-	0.000	24.395
• APAF 04 Line Item H060WH: <i>Combat Rescue Helicopter</i>	1,205.995	282.533	162.685	-	162.685	54.671	0.000	0.000	-	0.000	1,705.884
• APAF 06 Line Item H060WH: <i>Combat Rescue Helicopter</i>	119.768	0.000	1.859	-	1.859	2.338	2.397	2.434	2.483	0.000	131.279
• APAF 05 Line Item H060WM: <i>HH60W Modifications</i>	3.083	0.000	28.911	-	28.911	68.453	74.007	76.805	78.667	0.000	329.926

**Remarks**

**E. Acquisition Strategy**

Procure a new helicopter and associated training systems, and support elements that leverage fielded non-developmental technologies to re-capitalize the HH-60G fleet.

Under the development effort, the CRH program procured a total of ten aircraft as follows: four Engineering, Manufacturing, and Development (EMD) aircraft, five System Demonstration Test Article (SDTA) aircraft, and one modernization flight test aircraft. The FY 2020 PB added the modernization flight test aircraft. The CRH program office will procure necessary ground and flight assets required for both Development Test (DT) and Initial Operational Test & Evaluation (IOT&E).

The main CRH program includes development of the complete CRH system to include delivery of ten aircraft, associated training systems to include WST, OFT, AVDTT, AST, other Part Task Trainers, associated spares and support elements/equipment, as well as Type 1 training and courseware required to perform flight, aircrew and maintenance training. An additional prime contract was awarded to develop and acquire additional training devices. Other efforts include, but are not limited to development of a systems integration laboratory and an avionics integration support facility, as well as procurement of data rights and licenses, spares, product support and program support costs for the EMD effort. The CRH modernization effort will maximize, where possible, opportunities for production line cut-in to minimize the amount of future post-production modifications needed.

The current contract types for this effort are predominantly Fixed Price. As originally planned following source selection, a formal CRH Training System Requirements Analysis (TSRA) was completed in Sep 2015. This analysis identified additional training requirements not accounted for in the original contract. A subsequent TSRA review incorporating the latest annual Ready Aircrew Program (RAP) Tasking Memorandum (RTM) clarified the additional training requirements to increase the research and development of training devices and courseware. These additional training devices, associated spares, support equipment, Type 1 Training and initial contractor support were competitively awarded in Aug 2018.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605229F / HH-60W	<b>Project (Number/Name)</b> 654364 / Combat Rescue Helicopter
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HH-60W aircraft development, integration, test articles, trainers, support and contractor test	C/FPIF	Sikorsky Aircraft Corporation : Stratford, CT	1,699.834	0.946	Dec 2023	8.195	Jul 2024	-		-		-	0.000	1,708.975	-
Acquisition of additional HH-60W training devices including MACE	C/FFP	Various : TBD	35.356	4.206	Sep 2023	-		-		-		-	0.000	39.562	-
HH-60W Capability Upgrades and Modernization- New IDIQ Contract and EOIR	C/FPIF	Sikorsky Aircraft Corp : Stratford, CT	83.407	14.651	Sep 2023	29.310	Mar 2024	-		-		-	0.000	127.368	-
<b>Subtotal</b>			1,818.597	19.803		37.505		-		-		-	0.000	1,875.905	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HH-60W product support related to aircraft development, integration, test articles, trainers and contractor test	Various	Various : TBD	57.186	0.454	Dec 2023	1.767	Jan 2024	-		-		-	0.000	59.407	-
Direct Cite Civ Pay	Various	AFLCMC : TBD	2.867	4.540	Sep 2023	5.879	Sep 2024	-		-		-	0.000	13.286	-
<b>Subtotal</b>			60.053	4.994		7.646		-		-		-	0.000	72.693	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HH-60W planning and testing to support developmental and operational test, live fire	PO	413th Test Squadron : Eglin AFB, FL	50.743	2.925	Mar 2023	3.117	Mar 2024	-		-		-	0.000	56.785	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605229F / HH-60W	<b>Project (Number/Name)</b> 654364 / Combat Rescue Helicopter
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Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
test and other weapon system testing and support															
<b>Subtotal</b>			50.743	2.925		3.117		-		-		-	0.000	56.785	N/A

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HH-60W A&AS Support	C/CPFF	EPASS : Dayton, OH	28.761	-		-		-		-		-	0.000	28.761	-
HH-60W Other Program Support Costs	Various	Various : Various	10.165	-		-		-		-		-	0.000	10.165	-
<b>Subtotal</b>			38.926	-		-		-		-		-	0.000	38.926	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		1,968.319	27.722	48.268	-	-	-	0.000	2,044.309	N/A

**Remarks**  
 FINANCIAL PERFORMANCE: HH-60W is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, however, the HH-60W EMD contract is a Fixed Price Incentive Fee (FPIF) contract with progress payments. Ten (10%) percent of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.

FY20+: Transitioned Management Services to APAF.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605229F / HH-60W	<b>Project (Number/Name)</b> 654364 / Combat Rescue Helicopter
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>HH-60W</b>	
HH-60W EMD Development	
HH-60W CRH Training System EMD Development	
HH-60W Test and Evaluation	
Developmental Test and Evaluation	
Capability Upgrades and Modernization	

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605229F / HH-60W	<b>Project (Number/Name)</b> 654364 / Combat Rescue Helicopter
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>HH-60W</b>				
HH-60W EMD Development	1	2023	1	2025
HH-60W CRH Training System EMD Development	1	2023	4	2023
HH-60W Test and Evaluation	1	2023	1	2025
Developmental Test and Evaluation	1	2023	4	2024
Capability Upgrades and Modernization	1	2023	4	2024

**Note**

Capability Upgrades and Modernization events moved to PE 0605229F, HH-60W, Project 670001, HH-60W Modernization Development, Budget Activity 7, Operational Systems Development to transition the HH-60W program from production to post-production capability upgrades and sustainment.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	3,434.623	3,746.935	3,721.024	0.000	3,721.024	3,791.551	3,568.798	2,890.117	2,011.934	7,557.367	30,722.349
655238: <i>GROUND BASED STRATEGIC DETERRENT (GBSD)</i>	0.000	3,434.623	3,746.935	3,721.024	0.000	3,721.024	3,791.551	3,568.798	2,890.117	2,011.934	7,557.367	30,722.349
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Program MDAP/MAIS Code:** 493

**Note**

On January 18, 2024, the USECAF notified Congress that the Sentinel program experienced a critical Program Acquisition Unit Cost (PAUC) breach. The cost and schedule estimates are from the December 2023 Program Office Estimate, which served as the basis for the Nunn-McCurdy breach.

In FY 2023, Program 0605230F, Ground Based Strategic Deterrent, Project 641025, Ground Based Strategic Deterrent, efforts were transferred to Program 0605238F, Ground Based Strategic Deterrent EMD, Project 655238, Ground Based Strategic Deterrent, in order to account for program transition to System Development and demonstration. (Budget Activity 5).

**A. Mission Description and Budget Item Justification**

To differentiate between Sentinel Systems Directorate and the Ground Based Strategic Deterrent (GBSD) now known as the Sentinel program, the GBSD program has been designated as the LGM-35A Sentinel. The LGM-35A Sentinel incorporates the Sentinel weapon system which is called out in related Sentinel System Directorate portfolio programs that includes Intercontinental Ballistic Missile (ICBM) Reentry Vehicles and ICBM Fuze Modernization.

The LGM-35A Sentinel program will design, develop, produce, and deploy a replacement for the current Minuteman III (MM III) ICBM weapon system in order to maintain a safe, secure, reliable, and effective nuclear deterrent. The LGM-35A Sentinel program will deliver a fully integrated weapon system that will lower lifecycle costs and close key capability gaps and vulnerabilities identified in the LGM-35A Sentinel Capabilities Based Assessment, LGM-35A Sentinel Capabilities Development Document, and the LGM-35A Sentinel Analysis of Alternatives. LGM-35A Sentinel will also mitigate ground-based deterrent degradation due to MM III component age-out and attrition.

The LGM-35A Sentinel program will include prime contractor development of applicable support equipment, data, flight test hardware and infrastructure, and training systems while examining and mitigating risk during the MM III to LGM-35A Sentinel transition. The LGM-35A Sentinel program office has partnered with MM III program office to facilitate communication and integration of the weapon system recapitalization during the transition. This program includes any needed nuclear surety and certification and system vulnerability assessments.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>	
<p>During the Engineering and Manufacturing Development (EMD) phase, the LGM-35A Sentinel program will execute 1) government system engineering, analytics, and test capability development; 2) air vehicle equipment development; 3) command &amp; launch systems development; 4) infrastructure and deployment development; 5) support systems development; and 6) weapon system integration.</p> <p>Government systems engineering investments include development in model-based systems engineering (MBSE), integration, test software, product life-cycle management framework, and modernization of existing system engineering/integration labs and infrastructure. Air vehicle equipment is an integrated missile stack including the propulsion, post-boost, guidance, and re-entry systems sub-components. Command &amp; launch encompasses all command and control mission equipment and interfaces; Integrated Command Center; cryptologic and cryptographic systems, software and associated interfaces; communications systems hardware, software, and associated interfaces; associated air and ground hardware; air and ground control equipment; and associated software directly related to the survivability, monitoring, and launch of the replacement flight system. Launch systems include launch centers, launch facilities, associated structures, ground mechanical systems, and security systems. Support systems include operator and maintainer training systems hardware and software, security system architecture, transport support equipment, program office and weapon system facilities, and support equipment. Weapon system integration risk reduction includes non-proprietary open systems architecture with well-defined interfaces and a modular design at the weapon system level to allow future modification and technology insertion. As LGM-35A Sentinel progresses toward Critical Design Review (CDR), the LGM-35A Sentinel weapon system design will dictate the parameters for the MILCON real property requirements and their integration with the weapon system component requirements as these are inextricably linked.</p> <p>The funding required for Fiscal Year 2025 will be used to continue the execution of the EMD contract to advance LGM-35A Sentinel program major activities to include systems engineering, information technology, data management, analytical capabilities and to deliver a flexible, integrated weapon system critical design. The program will modify, modernize, and expand the analytic environment and labs to support EMD activities to enable full execution of the program's capability to own the technical baseline throughout the program life cycle. This involves establishing a digital engineering system including a supporting environment / infrastructure to perform digital activities, to collaborate with, and to communicate across stakeholders. The LGM-35A Sentinel program will continue to examine and mature air vehicle equipment, command and launch, cybersecurity, operator and maintenance training systems hardware and software, security system architecture, transport sub-systems, Support Equipment and associated ground technologies. The program will also continue to mature and refine weapon system and non-operational software, software integration and development, modular system architecture requirements, and product life-cycle management. This will continue to require execution and improvement to the unified certification strategy facilitating system validation and verification for nuclear surety, cyber security, and nuclear safety requirements. The program will also expand and mature the analytical, information technology, test, and data management capabilities to ensure access to weapon system design information is properly controlled and securely transmitted between government and contractors. The program will continue to develop Vandenberg Space Force Base (VSFB) test capabilities and provision Western Range Test capabilities for the Flight Test Program. Additionally, the LGM-35A Sentinel program funds all required developmental and operational test and evaluation activities to meet initial and full operational capability milestones including, but not limited to, developing, improving, and modernizing test capabilities essential to reaching those milestones when existing test capabilities are inadequate or non-existent. The program will also continue development of capabilities to meet the requirement for dual-capable, air based, secondary launch platform. Finally, the program will establish a government-owned and government-operated DevSecOps / software stack within a cloud environment.</p> <p>In compliance: FY24 RDT&amp;E funding for PE 0605230F, Program LGM-35A Sentinel is in compliance with budgeted end items per the approved test strategy and FY23 Omnibus, Sec. 8059.</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY 2023 \$31.786M was expended for civilian pay expenses in this program element, and in FY 2024 \$49.200M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	3,614.290	3,746.935	3,401.679	0.000	3,401.679
Current President's Budget	3,434.623	3,746.935	3,721.024	0.000	3,721.024
Total Adjustments	-179.667	0.000	319.345	0.000	319.345
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-52.000	0.000			
• SBIR/STTR Transfer	-127.667	0.000			
• Other Adjustments	0.000	0.000	319.345	0.000	319.345

**Change Summary Explanation**

FY 2023 Program Summary changes include -\$45.0M utilized on FY23-44IR that moved funding from the RDT&E appropriation to the Other Procurement appropriation for the LGM-35A Sentinel Mission Integration Facility Electronic Security System and temporary, relocatable facilities for the LGM-35A Sentinel Program Integration Office / Program Management Office at F.E. Warren AFB and Malmstrom AFB and \$7M RDT&E on FY23-09PA dated May 2023 that was realigned to Other Procurement, Air Force, to complete the Electronic Security System (ESS) for the Sentinel Mission Integration Facility at Hill Air Force Base. Additionally, \$127.7M was utilized for the AF SBIR.

FY 2025 increase due to the LGM-35A Sentinel program funds phasing for its EMD development work as the program continues identifying and reducing program transition risks. The program continues to advance its test series for Development Test & Evaluation (DT&E) and Operational Test & Evaluation (OT&E) for the air vehicle, launch facility, launch center, and all other test support assets.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Engineering & Manufacturing Development (EMD) Product Development	2,873.384	3,042.691	2,881.170

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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**Description:** The EMD Product Development major thrust captures the planned events and activities of the EMD prime contractor in the design, development, and test activities of the LGM-35A Sentinel weapon system. The primary objectives on contract are to develop, manufacture, test, and deliver an affordable, integrated WS that meets the WSS requirements; incorporate modularity in the WS design to ensure LGM-35A Sentinel can adapt to meet the challenges of a dynamic threat environment, technological changes, and budget uncertainty, and reduce technical, engineering, integration, test, and lifecycle cost risk. The EMD Product Development includes the completion of detailed design for all hardware and software, the build and test of prototypes and first articles to verify compliance with capability requirements, and preparations for production and deployment. It also includes the execution of engineering design reviews, development test & evaluation, audits, and readiness reviews at the system and subsystem levels. These reviews include subsystem and system Critical Design Reviews (CDR), Full Functional Test, System Qualification and Verification Review, Functional Configuration Audits, Physical Configuration Audits, and Test Readiness Reviews. The EMD Product Development major thrust activities are linked with the corresponding EMD Government Support major thrust activities to ensure the government owns the technical baseline for the system acquisition. The objectives are: 1) advance LGM-35A Sentinel major activities, systems engineering activities, information technology, data management, analytical capabilities and deliver a flexible, integrated weapon system critical design, 2) prototype and test mature technologies related to the major activities and demonstrate performance of sub-system and system capabilities through prototyping and testing and 3) engage in rapid prototyping events to mature future design increments.

**FY 2024 Plans:**

- Conduct remaining sub-system Critical Design Reviews (CDR) in the lead-up to Weapon System (WS) CDR.
- Execute the EMD Contract to advance LGM-35A Sentinel major activities to include first development flight test milestone, systems engineering activities, test activities, information technology, data management, analytical capabilities and deliver a flexible, integrated weapon system critical design. Establish an initial product baseline at CDR for the weapon system.
- Examine and mature air vehicle equipment, command and launch, cybersecurity, operator and maintenance training systems hardware and software, security system architecture, transport sub-systems, and associated ground technologies.
- Build and refine Mission Modeling Framework (MMF) by incorporating higher-fidelity weapon system designs and updates to threat landscape to facilitate ongoing assessment of weapon system performance against the authoritative threat.
- Mature the assessment of the current MM III infrastructure to determine, through onsite assessments and analysis, the extent of degradation and evaluate for future upgrade, replacement, preparation, and modernization of operational and test facilities.
- Mature the weapon system by conducting trade studies, system engineering, test activities, and system modeling and simulation.
- Assess fielding requirements for air vehicle equipment, command & launch, and infrastructure and appropriate timelines to transition from MM III to LGM-35A Sentinel solution.
- Conduct planning for the use of MBSE tools during Operations and Sustainment phase in order to transform ICBM sustainment and supply chain management.

<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>• Mature and refine weapon system and non-operational software, software integration and development, modular system architecture requirements, and product life-cycle management.</li> <li>• Develop analytical, information technology, and data management capabilities.</li> <li>• Procure, design, expand, and prepare information technology equipment and network access for new Sentinel facilities to support program personnel.</li> <li>• Implement information systems and information technology design to support EMD execution; onboard program personnel into all Sentinel cloud networks, and provide applications needed in the cloud to execute the program.</li> <li>• Plan and execute critical software risk reduction activities.</li> <li>• Expand and mature the analytical, information technology, test, and data management capabilities to ensure access to weapon system design information is properly controlled and securely transmitted between government and contractors.</li> <li>• Expand large data ingest capabilities to support consumption of flight test and Model Based Architecture and Software Engineering data.</li> <li>• Execute and improve the unified certification strategy facilitating system validation and verification for nuclear surety, cyber security, and nuclear safety requirements.</li> <li>• Plan, develop, mature capability integration with the Nuclear Command, Control, and Communications (NC3) Center for future command, control, and communication requirements.</li> <li>• Collaborate with the National Nuclear Security Administration to ensure seamless integration of National Security Agency certified cryptologic, cryptographic, and Department of Energy assets into the LGM-35A Sentinel weapon system.</li> <li>• Integrate the Mk21A Reentry Vehicle (Program 0101328F) and LGM-35A Sentinel test programs.</li> <li>• Develop the capabilities to meet the requirement for dual-capable, air-based, secondary launch.</li> <li>• Develop and test reentry vehicles to meet joint Department of Energy and Department of Defense specific requirements.</li> <li>• Plan, develop, and mature support systems to include Support Equipment and all transportation equipment.</li> <li>• Conduct studies and initiatives to build schedule margin, reduce risk in the MM III to LGM-35A Sentinel transition, and reduce life cycle costs as the program progresses through the EMD phase to the Production phase.</li> <li>• Conduct facility and infrastructure conversions and fit-out at Vandenberg SFB, Hill AFB, and F.E. Warren AFB to support First Flight developmental test operations and facility prototypes to support LGM-35A Sentinel Operations and Deployment.</li> <li>• Perform supportability analysis and mature Logistics Product Data to establish the product support package to prepare for production, operations, and sustainment.</li> <li>• RDT&amp;E quantities are built and delivered by the prime contractor to utilize in prototyping and design testing as the prime contractor progresses toward the final design solution and hardware needed for First Flight.</li> </ul> <p><b><i>FY 2025 Plans:</i></b></p>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<ul style="list-style-type: none"> <li>• Continue to execute the EMD Contract to advance LGM-35A Sentinel major activities to include first development flight test milestone, systems engineering activities, test activities, information technology, data management, analytical capabilities and deliver a flexible, integrated weapon system critical design. Establish an initial product baseline at CDR for the weapon system.</li> <li>• Continue to examine and mature air vehicle equipment, command and launch, cybersecurity, operator and maintenance training systems hardware and software, security system architecture, transport sub-systems, and associated ground technologies.</li> <li>• Continue to build and refine Mission Modeling Framework (MMF) by incorporating higher-fidelity weapon system designs and updates to threat landscape to facilitate ongoing assessment of weapon system performance against the authoritative threat.</li> <li>• Continue to mature the assessment of the current MM III infrastructure to determine, through onsite assessments and analysis, the extent of degradation and evaluate for future upgrade, replacement, preparation, and modernization of operational and test facilities.</li> <li>• Continue to mature the weapon system by conducting trade studies, system engineering, test activities, and system modeling and simulation.</li> <li>• Continue to assess fielding requirements for air vehicle equipment, command &amp; launch, and infrastructure and appropriate timelines to transition from MM III to LGM-35A Sentinel solution.</li> <li>• Conduct planning for the use of MBSE tools during Operations and Sustainment phase in order to transform ICBM sustainment and supply chain management.</li> <li>• Continue to mature and refine weapon system and non-operational software, software integration and development, modular system architecture requirements, and product life-cycle management.</li> <li>• Continue to further develop analytical, information technology, and data management capabilities.</li> <li>• Continue to procure, design, expand, and prepare information technology equipment and network access for new Sentinel facilities to support program personnel.</li> <li>• Continue to implement information systems and information technology design to support EMD execution; onboard program personnel into all Sentinel cloud networks, and provide applications needed in the cloud to execute the program.</li> <li>• Continue to plan and execute critical software risk reduction activities.</li> <li>• Continue to expand and mature the analytical, information technology, test, and data management capabilities to ensure access to weapon system design information is properly controlled and securely transmitted between government and contractors.</li> <li>• Continue to expand large data ingest capabilities to support consumption of flight test and Model Based Architecture and Software Engineering data.</li> <li>• Continue to execute and improve the unified certification strategy facilitating system validation and verification for nuclear surety, cyber security, and nuclear safety requirements.</li> <li>• Continue to plan, develop, mature capability integration with the Nuclear Command, Control, and Communications (NC3) Center for future command, control, and communication requirements.</li> <li>• Continue to collaborate with the National Nuclear Security Administration to ensure seamless integration of National Security Agency certified cryptologic, cryptographic, and Department of Energy assets into the LGM-35A Sentinel weapon system.</li> </ul>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>Continue to integrate the Mk21A Reentry Vehicle (Program 0101328F) and LGM-35A Sentinel test programs.</li> <li>Continue to develop the capabilities to meet the requirement for dual-capable, air-based, secondary launch.</li> <li>Continue to develop and test reentry vehicles to meet joint Department of Energy and Department of Defense specific requirements.</li> <li>Continue to plan, develop, and mature support systems to include Support Equipment and all transportation equipment.</li> <li>Continue to conduct studies and initiatives to build schedule margin, reduce risk in the MM III to LGM-35A Sentinel transition, and reduce life cycle costs as the program progresses through the EMD phase to the Production phase.</li> <li>Continue facility and infrastructure conversions and fit-out at Vandenberg SFB, Hill AFB, and F.E. Warren to support First Flight developmental test operations and facility prototypes to support LGM-35A Sentinel Operations and Deployment.</li> <li>Continue to perform supportability analysis and mature Logistics Product Data to establish the product support package to prepare for production, operations, and sustainment.</li> <li>RDT&amp;E quantities are built and delivered by the prime contractor to utilize in prototyping and design testing as the prime contractor progresses toward the final design solution and hardware needed for First Flight.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to the LGM-35A Sentinel program funds phasing for its EMD prime contractor development work as the program continues identifying and reducing program transition risks. The program continues to advance its test series for Development Test &amp; Evaluation (DT&amp;E) and Operational Test &amp; Evaluation (OT&amp;E) for the air vehicle, launch facility, launch center, and all other test support assets.</p>				
<p><b>Title:</b> EMD Government Support</p> <p><b>Description:</b> The EMD Government Support major thrust captures planned events and activities for government agencies, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and other partners in the support of the EMD prime contractor efforts in design, development, and test of the weapon system. The EMD Government Support major thrust activities are linked with the corresponding EMD Product Development major thrust activities to ensure the government owns the technical baseline for the system acquisition. The objectives are: 1) advance LGM-35A Sentinel major activities, systems engineering activities, information technology, data management, analytical capabilities and deliver a flexible, integrated weapon system critical design, 2) prototype and test mature technologies related to the major activities and demonstrate performance of sub-system and system capabilities through prototyping and testing and 3) engage in rapid prototyping events to mature future design increments.</p> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>Modify, modernize, and expand the analytic environment and labs to support EMD activities to enable full execution of the program's capability to own the technical baseline throughout the program life cycle. This involves establishing a digital</li> </ul>		561.239	704.244	839.854

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>engineering system including a supporting environment/infrastructure to perform digital activities, collaborate with, and communicate across stakeholders.</p> <ul style="list-style-type: none"> <li>• Examine and mature air vehicle equipment, command and launch, cybersecurity, operator and maintenance training systems hardware and software, security system architecture, transport sub-systems, and associated ground technologies. Refine requirements and modular architectures through trade studies, prototyping, demonstration, and analysis.</li> <li>• Assess fielding requirements for air vehicle equipment, command and launch, infrastructure, and appropriate timelines to transition from MM III to LGM-35A Sentinel solution.</li> <li>• Conduct studies and initiatives to build schedule margin, reduce risk in the Minuteman III to LGM-35A Sentinel transition, and reduce life cycle costs as the program progresses through the EMD phase to the Production phase.</li> <li>• Mature and refine weapon system and non-operational software, software integration and development, modular system architecture requirements, and product life-cycle management.</li> <li>• Mature the assessment of the current MM III infrastructure to determine, through onsite assessments and analysis, the extent of degradation and evaluate for future upgrade, replacement, preparation, and modernization of operational and test facilities.</li> <li>• Execute all government critical path activities to include, but not limited to, Environmental Impact Statement (EIS), Environmental Baseline Surveys, and Section 106 Programmatic Agreement.</li> <li>• Mature the weapon system by conducting trade studies, system engineering, test activities, and system modeling and simulation.</li> <li>• Build and refine MMF by incorporating higher-fidelity weapon system designs and updates to threat landscape to facilitate ongoing assessment of weapon system performance against the authoritative threat.</li> <li>• Expand large data ingest capabilities to support consumption of flight test and Model Based Architecture and Software Engineering data.</li> <li>• Plan for the use of MBSE tools during Operations and Sustainment phase in order to transform ICBM sustainment and supply chain management.</li> <li>• Develop analytical, information technology, and data management capabilities.</li> <li>• Procure, design, expand, and prepare information technology equipment and network access for new Sentinel facilities to support program personnel.</li> <li>• Implement information systems and information technology design to support EMD execution; onboard program personnel into all Sentinel cloud networks, and provide applications needed in the cloud to execute the program.</li> <li>• Expand and mature the analytical, information technology, test, and data management capabilities to ensure access to weapon system design information is properly controlled and securely transmitted between government and contractors.</li> <li>• Build and establish an industrial base for innovation around the Sentinel enterprise to maintain modularity and adaptability for the life cycle of the weapon system as well as to continue the digital transformation to support the LGM-35A Sentinel program.</li> <li>• Plan and execute critical software risk reduction activities.</li> </ul>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>• Expand the Information Systems/Information Technology/Information Assurance infrastructure networks and personnel required to support Top Secret, Special Access Programs, and collateral activities and maintain and expand capability at mission partner operating locations and network access points.</li> <li>• Expand government-owned and government-operated DevSecOps/software stack to include data and software artifact transport between classified environments using cross domain solutions.</li> <li>• Implement cloud network infrastructure improvements to increase network reliability, availability, provide continued security, begin implementing cloud agnostic approach, and reduce latency across the networks.</li> <li>• Refine Security Classification Guide, update impacts, and implement updates and changes through all Government and contractor programmatic activities.</li> <li>• Integrate the Mk21A Reentry Vehicle (Program 0101328F) and LGM-35A Sentinel test programs.</li> <li>• Execute and improve the unified certification strategy which meets nuclear surety, cyber security, and nuclear safety requirements.</li> <li>• Develop a common cryptographic device and supporting equipment for use in multiple subsystems and/or networks throughout the LGM-35A Sentinel weapon system.</li> <li>• Plan, develop, and mature capability integration with the NC3 Center for future command, control, and communication requirements.</li> <li>• Increase FFRDC/UARC support to maintain the ability to own the technical baseline in EMD.</li> <li>• Increase Government Sustainment organizational support to maintain the ability to own and sustain the Hardware and Software technical baseline.</li> <li>• Plan, develop, and mature the sustainment strategies including Digital sustainment, Software Sustainment, and Hardware Sustainment.</li> <li>• Collaborate with National Nuclear Security Administration to ensure seamless integration of Department of Energy (DoE) assets into the LGM-35A Sentinel weapon system.</li> <li>• Develop test re-entry vehicles to meet joint DoE/DoD specific requirements.</li> <li>• Conduct platform integration efforts for dual-capable, air-based, secondary launch capability.</li> <li>• Develop, improve &amp; modernize government test capabilities required for successful Developmental Test (DT) and Operational Test (OT) including but not limited to, Vandenberg SFB test capabilities, Western Range Test capabilities, Broad Ocean Area Terminal Area Scoring Test Capability, and various noise, vibration and harshness and nuclear hardness and survivability test sites/beds as required. Prepare &amp; verify test capabilities' readiness to support the flight test campaign. Leverage digital engineering tools &amp; physical test data to mature Modeling &amp; Simulation tools.</li> <li>• Conduct activities necessary to plan, program, and execute weapon system structures needed to support program milestones and test objectives.</li> <li>• Plan, develop, and mature support systems to include Common Support Equipment/Peculiar Support Equipment and all transportation equipment.</li> </ul>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

- Modify and expand Sentinel workspace at all operating locations to accommodate a growing workforce and provide the tools for the workforce to own the technical baseline.
- Accomplish Life-cycle management and product support requirements as found in 10 USC 4324.

***FY 2025 Plans:***

- Continue to modify, modernize, and expand the analytic environment and labs to support EMD activities to enable full execution of the program's capability to own the technical baseline throughout the program life cycle. This involves establishing a digital engineering system including a supporting environment/infrastructure to perform digital activities, collaborate with, and communicate across stakeholders.
- Continue to examine and mature air vehicle equipment, command and launch, cybersecurity, operator and maintenance training systems hardware and software, security system architecture, transport sub-systems, and associated ground technologies. Refine requirements and modular architectures through trade studies, prototyping, demonstration, and analysis.
- Continue to assess fielding requirements for air vehicle equipment, command and launch, infrastructure and appropriate timelines to transition from MM III to LGM-35A Sentinel solution.
- Continue to conduct studies and initiatives to build schedule margin, reduce risk in the Minuteman III to LGM-35A Sentinel transition, and reduce life cycle costs as the program progresses through the EMD phase to the Production phase.
- Continue to mature and refine weapon system and non-operational software, software integration and development, modular system architecture requirements, and product life-cycle management.
- Continue to mature the assessment of the current MM III infrastructure to determine, through onsite assessments and analysis, the extent of degradation and evaluate for future upgrade, replacement, preparation, and modernization of operational and test facilities.
- Continue to execute all government critical path activities to include, but not limited to, Environmental Impact Statement (EIS), Environmental Baseline Surveys, and Section 106 Programmatic Agreement.
- Continue to mature the weapon system by conducting trade studies, system engineering, test activities, and system modeling and simulation.
- Continue to build and refine MMF by incorporating higher-fidelity weapon system designs and updates to threat landscape to facilitate ongoing assessment of weapon system performance against the authoritative threat.
- Continue to expand large data ingest capabilities to support consumption of flight test and Model Based Architecture and Software Engineering data.
- Conduct planning for the use of MBSE tools during Operations and Sustainment phase in order to transform ICBM sustainment and supply chain management.
- Continue to further develop analytical, information technology, and data management capabilities.
- Continue to procure, design, expand, and prepare information technology equipment and network access for new Sentinel facilities to support program personnel.

FY 2023	FY 2024	FY 2025
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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>• Continue to implement information systems and information technology design to support EMD execution; onboard program personnel into all Sentinel cloud networks, and provide applications needed in the cloud to execute the program.</li> <li>• Continue to expand and mature the analytical, information technology, test, and data management capabilities to ensure access to weapon system design information is properly controlled and securely transmitted between government and contractors.</li> <li>• Continue to build and establish an industrial base for innovation around the Sentinel enterprise to maintain modularity and adaptability for the life cycle of the weapon system as well as to continue the digital transformation to support the LGM-35A Sentinel program.</li> <li>• Continue to plan and execute critical software risk reduction activities.</li> <li>• Continue to expand the Information Systems/Information Technology/Information Assurance infrastructure networks and personnel required to support Top Secret, Special Access Programs, and collateral activities and maintain and expand capability at mission partner operating locations and network access points.</li> <li>• Continue to expand government-owned and government-operated DevSecOps/software stack to include data and software artifact transport between classified environments using cross domain solutions.</li> <li>• Continue to implement cloud network infrastructure improvements to increase network reliability, availability, provide continued security, begin implementing cloud agnostic approach, and reduce latency across the networks.</li> <li>• Continue to refine Security Classification Guide, update impacts, and implement updates and changes through all Government and contractor programmatic activities.</li> <li>• Continue to integrate the Mk21A Reentry Vehicle (Program 0101328F) and LGM-35A Sentinel test programs.</li> <li>• Continue to execute and improve the unified certification strategy which meets nuclear surety, cyber security, and nuclear safety requirements.</li> <li>• Continue to develop a common cryptographic device and supporting equipment for use in multiple subsystems and/or networks throughout the LGM-35A Sentinel weapon system.</li> <li>• Continue to plan, develop, and mature capability integration with the NC3 Center for future command, control, and communication requirements.</li> <li>• Continue to increase FFRDC/UARC support to maintain the ability to own the technical baseline in EMD.</li> <li>• Continue to increase Government Sustainment organizational support to maintain the ability to own and sustain the Hardware and Software technical baseline.</li> <li>• Continue to plan, develop, and mature the sustainment strategies including Digital sustainment, Software Sustainment, and Hardware Sustainment.</li> <li>• Continue to collaborate with National Nuclear Security Administration to ensure seamless integration of Department of Energy (DoE) assets into the LGM-35A Sentinel weapon system.</li> <li>• Continue to develop test re-entry vehicles to meet joint DoE/DoD specific requirements.</li> <li>• Continue platform integration efforts for dual-capable, air-based, secondary launch capability.</li> </ul>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>	

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>Continue to develop, improve &amp; modernize government test capabilities required for successful Developmental Test (DT) and Operational Test (OT) including but not limited to, Vandenberg SFB test capabilities, Western Range Test capabilities, Broad Ocean Area Terminal Area Scoring Test Capability, and various noise, vibration and harshness and nuclear hardness and survivability test sites/beds as required. Prepare &amp; verify test capabilities' readiness to support the flight test campaign. Leverage digital engineering tools &amp; physical test data to mature Modeling &amp; Simulation tools.</li> <li>Continue activities necessary to plan, program, and execute weapon system structures needed to support program milestones and test objectives.</li> <li>Continue to plan, develop, and mature support systems to include Support Equipment and all transportation equipment.</li> <li>Continue to modify and expand Sentinel workspace at all operating locations to accommodate a growing workforce and provide the tools for the workforce to own the technical baseline.</li> <li>Continue to accomplish Life-cycle management and product support requirements as found in 10 USC 4324.</li> </ul> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to the Sentinel (GBSD) program continuing to advance its EMD Development with government agencies, FFRDCs, UARCs, and other mission partners to support the EMD prime contractor efforts. The program continues to advance its test series for Development Test &amp; Evaluation (DT&amp;E) and Operational Test &amp; Evaluation (OT&amp;E) for the air vehicle, launch facility, launch center, and all other test support assets.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	3,434.623	3,746.935	3,721.024

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 04 PE 0605230F: <i>Ground Based Strategic Deterrent</i>	-	-	-	-	-	-	-	-	-	0.000	0.000
• RDTE 04 PE 0603851F: <i>Intercontinental Ballistic Missile - Dem/Val</i>	44.751	45.319	119.197	-	119.197	91.584	73.250	136.982	126.651	Continuing	Continuing
• RDTE 07 0101328F: <i>ICBM Reentry Vehicles</i>	112.282	475.415	629.928	-	629.928	740.334	955.013	710.312	332.728	Continuing	Continuing
• MPAF 01 Line Item MGBSD0: <i>Ground Based Strategic Deterrent</i>	0.000	539.300	0.000	-	0.000	1,634.097	4,131.827	5,073.777	5,697.755	69,015.349	86,092.105
• MPAF 01 MK21A0: <i>Mk21A Reentry Vehicle</i>	0.000	0.000	26.156	-	26.156	40.900	107.836	150.545	349.407	1,709.452	2,384.296

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MILCON PE 0101233F: <i>GBSD SQUADRONS</i>	457.920	198.040	770.000	-	770.000	1,109.000	830.000	1,453.000	957.000	3,609.377	9,384.337
• OPAF 03 WSC 834130: <i>AF Physical Security System</i>	9.839	4.172	5.689	-	5.689	23.040	0.000	0.000	0.000	0.000	42.740
• OPAF 04 845010: <i>Base Procured Equipment</i>	45.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	45.000

**Remarks**

**E. Acquisition Strategy**

The objective of the LGM-35A Sentinel program acquisition strategy is to deliver a full, integrated weapon system capability that meets Air Force Global Strike Command's Capability Development Document requirements. For the Engineering and Manufacturing Development (EMD) phase of this strategy, the Program Office awarded an EMD contract in the 4th quarter of Fiscal Year 2020. The objectives of EMD for the LGM-35A Sentinel program office are as follows: 1) to deliver low-risk, technologically mature, integrated weapon system baseline design; 2) develop flexible system architecture with options for future on-ramps and off-ramps to mitigate program risks; 3) embrace MBSE/digital engineering to streamline system development activities and timelines; 4) align contract incentives to mitigate schedule and performance risk; 5) utilize MBSE processes and tools to create schedule margin and accelerate surety, safety, cyber, and test activities for time certain delivery; 6) ensure government owns key interfaces and data rights; and 7) pursue "smart commonality" with U.S. Navy, U.S. Space Force, and Missile Defense Agency. The EMD phase includes an EMD Baseline Review, Critical Design Review, First Flight Test, Full Functional System Test, System Qualification/System Verification Review, Nuclear Certification, Developmental Test, Operational Test, and culminates with early production and weapon system deployment. The program will also assess the cost and schedule risks associated with every requirement. The EMD contract includes 5 options for early production and deployment. The period of performance, to include the production and deployment options, is fourth quarter of Fiscal Year 2020 to the second quarter of Fiscal Year 2028. These efforts will ultimately extend the capabilities of the ground-based leg of the nuclear triad through 2075.

LGM-35A Sentinel was authorized in the March 2023 Acquisition Decision Memorandum to procure test assets needed for Initial Operational Test and Evaluation and Operational Weapon System Article ground assets, utility corridors, and associated equipment to confirm functional weapons system performance in the EMD phase.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2025 Air Force</b>												<b>Date: March 2024</b>			
<b>Appropriation/Budget Activity</b> 3600 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0605238F / Ground Based Strategic Det errent EMD				<b>Project (Number/Name)</b> 655238 / GROUND BASED STRATEGIC DETERRENT (GBSD)					

<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
LGM-35A Sentinel EMD Contract	C/CPIF	Northrop Grumman Sys Corp : El Segundo, CA	0.000	2,873.383	Oct 2022	3,042.691	Oct 2023	2,881.170	Oct 2024	-		2,881.170	2,805.284	11,602.528	13,293.563
<b>Subtotal</b>			0.000	2,873.383		3,042.691		2,881.170		-		2,881.170	2,805.284	11,602.528	N/A

**Remarks**  
 Prior to Fiscal Year 2023, funding for these efforts was included under Program 0605230F, Ground Based Strategic Deterrent. LGM-35A Sentinel EMD Contract Total Cost is anticipated to be \$13,293.563 million. Funding is split between programs 0605230F, Ground Based Strategic Deterrent and 0605238F, Ground Based Strategic Deterrent EMD.

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Integration Support Contract	C/FFP	TBD : Hill AFB, UT	0.000	118.480	Oct 2022	112.700	Oct 2023	157.520	Oct 2024	-		157.520	449.132	837.832	-
Naval Surface Warfare Center Crane Support	MIPR	Naval Surface Warfare Center Crane : Crane, IN	0.000	5.200	Nov 2022	7.800	Nov 2023	5.500	Nov 2024	-		5.500	38.815	57.315	-
Aerospace FFRDC Support	MIPR	Aerospace Corporation : El Segundo, CA	0.000	22.561	Nov 2022	25.126	Nov 2023	25.800	Nov 2024	-		25.800	119.298	192.785	-
MITRE FFRDC Support	MIPR	MITRE : Bedford, MA	0.000	16.216	Nov 2022	16.200	Nov 2023	18.702	Nov 2024	-		18.702	105.605	156.723	-
Carnegie Mellon Software Engineering Institute Support	MIPR	Carnegie Mellon : Pittsburgh, PA	0.000	3.267	Nov 2022	5.353	Nov 2023	5.537	Nov 2024	-		5.537	8.302	22.459	-
Sandia FFRDC Reentry Systems Analysis Support	MIPR	Sandia National Laboratories : Various	0.000	1.900	Oct 2022	3.750	Oct 2023	1.800	Oct 2024	-		1.800	77.776	85.226	-
MIT Lincoln Labs FFRDC Reentry Systems Analysis Support	MIPR	MIT Lincoln Labs : Lexington, MA	0.000	1.760	Oct 2022	1.300	Oct 2023	1.800	Oct 2024	-		1.800	11.088	15.948	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Det errent EMD</i>	<b>Project (Number/Name)</b> 655238 / <i>GROUND BASED STRATEGIC DETERRENT (GBSD)</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Nuclear Surety & Certification Support	MIPR	Various : Various	0.000	3.053	Nov 2022	8.000	Nov 2023	1.768	Nov 2024	-		1.768	24.307	37.128	-
Operations Research Analyst Support	C/FFP	Tecolote : Hill AFB, UT	0.000	7.911	Oct 2022	7.840	Oct 2023	9.900	Oct 2024	-		9.900	45.990	71.641	-
Common Cryptographic Equipment	MIPR	Sandia National Labs : Various	0.000	17.135	Nov 2022	3.075	Nov 2023	7.500	Nov 2024	-		7.500	43.224	70.934	-
Security Support	Various	Space Missile Defense : Herndon, VA	0.000	9.696	Dec 2022	12.742	Dec 2023	2.621	Dec 2024	-		2.621	87.151	112.210	-
LGM-35A Sentinel Direct Cite Civilian Pay	Various	US Gov Civilians : Hill AFB, UT	0.000	31.786	Oct 2022	49.200	Oct 2023	45.500	Oct 2024	-		45.500	198.789	325.275	-
NEPA Analysis Support	MIPR	Various : Various	0.000	16.873	Nov 2022	7.749	Nov 2023	19.937	Nov 2024	-		19.937	28.949	73.508	-
Reentry Vehicle Sustainment Support	C/CPAF	Lockheed Martin Corp : Bethesda, MD	0.000	2.282	Dec 2022	3.000	Dec 2023	2.700	Dec 2024	-		2.700	12.940	20.922	-
Sandia Integration Support	MIPR	Sandia National Labs : Various	0.000	2.550	Jan 2023	2.000	Jan 2024	3.700	Jan 2025	-		3.700	14.925	23.175	-
LGM-35A Sentinel Facility Execution Support	MIPR	Various : Various	0.000	3.707	Jan 2023	5.081	Jan 2024	5.081	Jan 2025	-		5.081	16.059	29.928	-
Space Dynamics Lab Support	C/CPFF	USU Space Dynamics Lab : Logan, UT	0.000	6.706	Nov 2022	12.800	Nov 2023	20.375	Nov 2024	-		20.375	35.149	75.030	-
NC3 Terrestrial Integration Support	Various	Various : Various	0.000	0.652	Dec 2022	3.239	Nov 2023	2.615	Nov 2024	-		2.615	4.878	11.384	-
Secondary Launch Platform - Airborne	MIPR	Naval Air Systems Command : Patuxent River, MD	0.000	0.227	Dec 2022	1.783	Dec 2023	3.937	Dec 2024	-		3.937	8.538	14.485	-
Test Range Support	Various	Various : Various	0.000	3.310	Dec 2022	15.062	Dec 2023	16.425	Dec 2024	-		16.425	8.656	43.453	-
USACE Integrated Program Office	MIPR	US Army Corp of Engineers : Washington D.C.	0.000	2.527	May 2023	0.000	Dec 2023	12.700	Nov 2024	-		12.700	118.031	133.258	-
LGM-35A Sentinel Enterprise Support	C/Various	Various : Various	0.000	1.629	Dec 2022	1.494	Dec 2023	0.920	Dec 2024	-		0.920	3,046.538	3,050.581	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrant EMD</i>	<b>Project (Number/Name)</b> 655238 / <i>GROUND BASED STRATEGIC DETERRENT (GBSD)</i>
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			0.000	279.428		305.294		372.338		-		372.338	4,504.140	5,461.200	N/A

**Remarks**  
 Prior year's funding included under Program 0605230F, Ground Based Strategic Deterrent. LGM-35A Sentinel is spearheading the Owing The Technical Baseline (OTTB) approach for system acquisition. This approach utilizes additional support efforts that would typically be performed by a Prime Contractor thus increasing costs within Cost Category Items. Integration Support Contractor will be defined upon follow-on contract award.  
 Additional Items:  
 - Line item previously named Mantech has been changed to Security Support to reflect the various providers.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Johns Hopkins - Applied Physics Lab Support	MIPR	Johns Hopkins University-Applied Physics Lab : Laurel, MD	0.000	45.100	Oct 2022	33.000	Oct 2023	60.000	Oct 2024	-		60.000	110.151	248.251	-
Arnold Engineering Development Complex - Integrated Test Team	PO	Arnold Engineering Development Complex : Arnold AFB, TN	0.000	17.670	Oct 2022	21.562	Oct 2023	22.854	Oct 2024	-		22.854	284.712	346.798	-
Air Force Operational Test and Evaluation Center - Integrated Test Team	PO	Air Force Operational Test and Evaluation Center : Hill AFB, UT	0.000	2.563	Oct 2022	7.108	Oct 2023	11.845	Oct 2024	-		11.845	272.559	294.075	-
Missile & Intelligence Center - Integrated Threat Analysis and Simulation Environment	MIPR	DIA-Missile and Space Intelligence Center : Redstone Arsenal, AL	0.000	6.135	Nov 2022	4.000	Nov 2023	6.000	Nov 2024	-		6.000	29.142	45.277	-
National Air and Space Intelligence Center - Integrated Threat Analysis and Simulation Environment	MIPR	National Air and Space Intelligence Center : Fairborn, OH	0.000	0.750	Nov 2022	1.000	Nov 2023	2.040	Nov 2024	-		2.040	3.829	7.619	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>	<b>Project (Number/Name)</b> 655238 / <i>GROUND BASED STRATEGIC DETERRENT (GBSD)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total		Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete			
309th SMXG Software Engineering Support	PO	309th / 517th SWEG : Hill AFB, UT	0.000	22.535	Oct 2022	29.282	Oct 2023	35.781	Oct 2024	-		35.781	354.431	442.029	-	
309th SMXG Nuclear Safety Cross Check Analysis	PO	309th / 516th SWES : Hill AFB, UT	0.000	16.000	Oct 2022	23.733	Oct 2023	25.836	Oct 2024	-		25.836	62.365	127.934	-	
Silo Fly-out Modeling and Simulation	MIPR	Various : Various	0.000	5.500	Nov 2022	5.500	Nov 2023	0.000	Nov 2024	-		0.000	21.973	32.973	-	
Rapid Assessment Technology	MIPR	Various : Various	0.000	17.303	Mar 2023	10.564	Mar 2024	10.564	Mar 2025	-		10.564	42.217	80.648	-	
Sandia Flight Test Vehicle Development	MIPR	Sandia National Labs : Various	0.000	30.000	Dec 2022	13.000	Dec 2023	42.900	Dec 2024	-		42.900	30.965	116.865	-	
Naval Surface Warfare Center Corona Support	MIPR	Naval Surface Warfare Center : Corona, CA	0.000	1.255	Dec 2022	1.294	Dec 2023	1.350	Dec 2024	-		1.350	10.088	13.987	-	
Combined Test Facility Support	MIPR	Various : Various	0.000	3.045	Nov 2022	3.670	Nov 2023	2.164	Nov 2024	-		2.164	9.719	18.598	-	
Broad Ocean Area Terminal Area Scoring Test Capability	MIPR	Navy Strat. Sys. Programs : Various	0.000	6.522	Nov 2022	52.509	Nov 2023	8.400	Nov 2024	-		8.400	134.156	201.587	-	
Little Mountain Test Facility Radiation Lab Upgrades	C/CPFF	The Boeing Company : Layton, UT	0.000	0.000		5.950	Nov 2023	10.500	Nov 2024	-		10.500	22.658	39.108	-	
Material Testing Collaboration	MIPR	Navy Strat. Sys. Programs : Washington, DC	0.000	0.500	Dec 2023	0.000	Dec 2024	4.733	Dec 2025	-		4.733	6.767	12.000	-	
LGM-35A Sentinel Enterprise Test and Assessments	C/Various	Various : Various	0.000	1.855	Nov 2022	3.330	Nov 2023	6.241	Nov 2024	-		6.241	9,875.498	9,886.924	-	
<b>Subtotal</b>			0.000	176.733		215.502		251.208		-		251.208	11,271.230	11,914.673	N/A	

**Remarks**  
 Prior year's funding included under Program 0605230F, Ground Based Strategic Deterrent.  
 Additional Items:  
 - Material Testing Collaboration

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / Ground Based Strategic Deterrent EMD	<b>Project (Number/Name)</b> 655238 / GROUND BASED STRATEGIC DETERRENT (GBSD)
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LGM-35A Sentinel Administrative Support	C/FFP	Delta Solutions, Inc. : Colorado Springs, CO	0.000	0.532	Nov 2022	1.138	Nov 2023	0.000	Nov 2024	-		0.000	0.000	1.670	-
LGM-35A Sentinel Enterprise Process Improvement Support	C/FFP	Booz Allen Hamilton : McLean, VA	0.000	14.589	Nov 2022	17.961	Nov 2023	26.600	Nov 2024	-		26.600	46.531	105.681	-
Hardware, Software, IT Resources	C/Various	Various : Various	0.000	27.493	Oct 2022	103.199	Oct 2023	76.348	Oct 2024	-		76.348	155.909	362.949	-
LGM-35A Sentinel DevSecOps, Software Factory, Cloud, & Infrastructure	Various	Various : Various	0.000	56.176	Nov 2022	50.032	Nov 2023	102.110	Nov 2024	-		102.110	217.866	426.184	-
Operating Location Support	Various	Various : Various	0.000	0.041	Jan 2023	6.391	Jan 2024	0.130	Jan 2025	-		0.130	33.837	40.399	-
Government Product Lifecycle Management	TBD	TBD : TBD	0.000	0.000		-		4.854	Jan 2025	-		4.854	10.146	15.000	-
Enterprise PMA	Various	Various : Various	0.000	6.248	Oct 2022	4.727	Oct 2023	6.266	Oct 2024	-		6.266	774.824	792.065	-
<b>Subtotal</b>			0.000	105.079		183.448		216.308		-		216.308	1,239.113	1,743.948	N/A

**Remarks**  
 Prior year's funding included under Program 0605230F, Ground Based Strategic Deterrent.  
 Additional Items:  
 - Government Product Lifecycle Management

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	3,434.623	3,746.935	3,721.024	-	3,721.024	19,819.767	30,722.349	N/A

**Remarks**  
 In FY23, GBSD program transitioned from Budget Activity 04 to Budget Activity 05 and EMD efforts transitioned to PE 0605238F, Ground Based Strategic Deterrent EMD, Project 655238, Ground Based Strategic Deterrent from PE 0605230F, Ground Based Strategic Deterrent.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force			<b>Date:</b> March 2024				
<b>Appropriation/Budget Activity</b> 3600 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>			<b>Project (Number/Name)</b> 655238 / <i>GROUND BASED STRATEGIC DETERRENT (GBSD)</i>		

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Sentinel (GBSD)</b>	
Engineering and Manufacturing Development Phase	
First Developmental Flight Test (Feb 2026)	
Critical Design Review (Mar 2026)	
Full System Functional Test (Feb 2027)	
System Qualification/Verification Review (Mar 2029)	
Milestone C (Jun 2029)	
Production and Deployment Phase	
Operational Weapon System Article Required Assets Available Review (Sep 2029)	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0605238F / <i>Ground Based Strategic Deterrent EMD</i>	<b>Project (Number/Name)</b> 655238 / <i>GROUND BASED STRATEGIC DETERRENT (GBSD)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Sentinel (GBSD)</b>				
Engineering and Manufacturing Development Phase	1	2023	3	2029
First Developmental Flight Test (Feb 2026)	2	2026	2	2026
Critical Design Review (Mar 2026)	2	2026	2	2026
Full System Functional Test (Feb 2027)	2	2027	2	2027
System Qualification/Verification Review (Mar 2029)	2	2029	2	2029
Milestone C (Jun 2029)	3	2029	3	2029
Production and Deployment Phase	3	2029	4	2029
Operational Weapon System Article Required Assets Available Review (Sep 2029)	4	2029	4	2029

**Note**

Program schedule events are currently under review in accordance with the Nunn-McCurdy process. Updates to the event schedule will be provided once the required Nunn-McCurdy analyses are completed.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207171F / <i>F-15 EPAWSS</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	1,105.463	65.587	13.982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,185.032
657108: <i>EPAWSS DEVELOPMENT</i>	1,105.463	65.587	13.982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1,185.032
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Program MDAP/MAIS Code:** 485

**A. Mission Description and Budget Item Justification**

The legacy F-15 Tactical Electronic Warfare System (TEWS) is functionally obsolete. It uses 1970's analog technology to combat 1980s-era radar-based ground and air threats. In addition, this aging system is becoming more difficult and expensive to sustain. As a result, the Air Force is replacing TEWS with the F-15 Eagle Passive/Active Warning and Survivability System (EPAWSS). F-15 EPAWSS is an advanced digital electronic warfare system capable of detecting, identifying, locating, denying, degrading, disrupting, and defeating modern and emerging threat systems in contested airspace with dense radio-frequency (RF) background environments. F-15 EPAWSS will provide indication, type, and position of ground-based RF threats as well as the indication, type, and bearing of airborne threats with the situational awareness needed to avoid, engage, or negate the threat. It will also prevent RF threat systems from detecting or acquiring accurate targeting information to complicate and/or negate an enemy threat targeting solution. Finally, EPAWSS will counter RF and infrared threat systems at end-game via electronic countermeasures (jamming), chaff, and/or flares.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023 \$0.705M was expended for civilian pay expenses in this program element, and in FY2024 \$0.620M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force / BA 5: System Development & Demonstration (SDD)	<b>R-1 Program Element (Number/Name)</b> PE 0207171F / F-15 EPAWSS
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	67.956	13.982	0.000	0.000	0.000
Current President's Budget	65.587	13.982	0.000	0.000	0.000
Total Adjustments	-2.369	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-2.369	0.000			
• Other Adjustments	0.000	0.000	0.000	0.000	0.000

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Eagle Passive/Active Warning Survivability System (EPAWSS)	65.587	13.982	-
<b>Description:</b> Planned replacement of the existing F-15 Tactical Electronic Warfare System (TEWS).			
<b>FY 2024 Plans:</b> Complete IOT&E, EMD, and Contractor closeout activities in order to proceed to a full rate production decision. Finalize software integration, resolve remaining performance deficiencies, accomplish OT flights, support laboratory equipment upgrades, incorporate additional technical publications, and complete the development phase of the program. Funds may be used to execute and support cyber testing on aircraft hardware, conduct studies, address emerging threats, and leverage potential system enhancement opportunities that improve pilot situational awareness/overall system effectiveness.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Program plans to complete EMD phase and start FRP in FY24. FY24 is the last year of EMD program funding.			
<b>Accomplishments/Planned Programs Subtotals</b>	65.587	13.982	-

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF 05 Line Item	259.837	280.658	271.970	-	271.970	207.723	118.624	102.513	123.474	0.000	1,364.799
F15EWS: Aircraft Modification											
• APAF 07 Line Item 000999: Aircraft Spares and Repair Parts	19.796	0.000	21.945	-	21.945	11.794	0.000	0.000	15.311	0.000	68.846

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207171F / <i>F-15 EPAWSS</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 07 000075: <i>OTHER PRODUCTION CHARGES (OVERVIEW)</i>	-	11.953	2.040	-	2.040	43.744	28.633	47.784	14.497	0.000	148.651

**Remarks**

**E. Acquisition Strategy**

F-15 EPAWSS replaces the existing radar warning receiver, internal countermeasure system and countermeasure dispenser system. The F-15 EPAWSS technical approach is to leverage mature and proven hardware to field a critically-needed capability as soon as possible. In addition, the program tailored the Milestone C production decision into two decisions: Decision Point #1 was approved in December 2020, constituting entry into the program's production phase, as well as initiating hardware procurement and modification line stand-up. Decision Point #2, approved in June 2022, allowed for hardware installation on operational F-15E aircraft and approved the full rate production (FRP) decision criteria. This tailoring provided the Milestone Decision Authority the ability to accelerate Initial Operational Capability by taking long-lead hardware procurement off the program critical path, reducing the schedule impact of kit lead times.

The prime integrator for this program is Boeing, responsible for selecting its suppliers and accountable for full aircraft-level installed performance. The prime integrator has subcontractor support from BAE Systems, whose responsibilities include development of the onboard electronic warfare subsystem (hardware and software).

The EPAWSS EMD contract initially employed a mix of contract types, the largest being Cost Plus Incentive Fee (CPIF) for development and testing. In 2020, the program office restructured the EMD contract to Firm Fixed Price.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207171F / F-15 EPAWSS	<b>Project (Number/Name)</b> 657108 / EPAWSS DEVELOPMENT
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
F-15 EPAWSS TMRR	SS/ Various	Boeing : St. Louis, MO	233.738	-		-		-		-		-	0.000	233.738	-
F-15 EPAWSS EMD	SS/ Various	Boeing : St. Louis, MO	737.509	53.173	Jan 2023	11.620	Jun 2024	-		-		-	0.000	802.302	-
F-15 EPAWSS	Various	Various : Various	38.210	4.446		0.430		-		-		-	0.000	43.086	-
<b>Subtotal</b>			1,009.457	57.619		12.050		-		-		-	0.000	1,079.126	N/A

**Remarks**  
The final line item reference to "various" contract methods and performing activity/location address other government costs for various EMD-specific hardware, equipment modification/installation/shipping efforts, special studies, travel and support personnel that are required to meet program objectives. The specific execution vehicles vary by effort.

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority	Allot	Various : Various	4.435	0.705	Oct 2022	0.620	Oct 2023	-		-		-	0.000	5.760	-
<b>Subtotal</b>			4.435	0.705		0.620		-		-		-	0.000	5.760	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation	Various	Not specified. : TBD	59.117	6.458	Jun 2023	0.800		-		-		-	0.000	66.375	-
Government Flight Test	Various	Various : Various	28.436	0.000		-		-		-		-	0.000	28.436	-
<b>Subtotal</b>			87.553	6.458		0.800		-		-		-	0.000	94.811	N/A

**Remarks**  
The final line item reference to "various" contract methods and performing activity/location addresses other government costs for T&E (both DT&E & IOT&E) specific test equipment/hardware, test event support, test-related special studies, travel and support personnel that are required to meet program objectives. The specific execution vehicles vary by effort.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2025 Air Force											<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0207171F / F-15 EPAWSS				<b>Project (Number/Name)</b> 657108 / EPAWSS DEVELOPMENT				

Management Services (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Support Costs	Various	Various : Various	4.018	0.805	Mar 2023	0.512	Mar 2024	-		-		-	0.000	5.335	-
<b>Subtotal</b>			4.018	0.805		0.512		-		-		-	0.000	5.335	N/A

**Remarks**  
The final line item reference to "various" contract methods and performing activity/location addresses other government costs for management support of EMD & T&E related activities, creation of special studies documentation, travel, and support personnel that are required to meet program objectives. The execution vehicles vary by effort.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	1,105.463	65.587	13.982	-	-	-	0.000	1,185.032	N/A

**Remarks**  
FINANCIAL PERFORMANCE: F-15 EPAWSS is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, however, the F-15 EPAWSS Development contract is a Fixed Price contract with progress payments. 10 percent of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.

Prior Years funding in FY 2013 and FY 2014 of \$15.100M was executed in PE 0207134F.

Prior Years funding in FY 2015 of \$37.726M was executed in PE 0207171F, Project 676038.

In FY 2016, EPAWSS efforts were transferred from Budget Activity 7, Operational Systems Development, PE 0207171F, Project Number 676038 to Budget Activity 5, Engineering and Manufacturing Development, PE 0207171F, Project Number 657108 per OSD direction.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207171F / F-15 EPAWSS	<b>Project (Number/Name)</b> 657108 / EPAWSS DEVELOPMENT
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
<b>F-15 EPAWSS</b>																												
Hardware Qualification Testing																												
Software Integration																												
Maintenance/Tech Pubs																												
Integrated Test and Evaluation																												
Configuration Audits & System Verification																												
Initial Operational Test & Evaluation																												
Hardware Test Support Cyber Controls and IT Refresh																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207171F / <i>F-15 EPAWSS</i>	<b>Project (Number/Name)</b> 657108 / <i>EPAWSS DEVELOPMENT</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>F-15 EPAWSS</i></b>				
Hardware Qualification Testing	1	2023	1	2024
Software Integration	1	2023	1	2024
Maintenance/Tech Pubs	1	2023	4	2023
Integrated Test and Evaluation	1	2023	3	2023
Configuration Audits & System Verification	1	2023	4	2023
Initial Operational Test & Evaluation	4	2023	2	2024
Hardware Test Support Cyber Controls and IT Refresh	2	2023	2	2026

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207279F / <i>Isolated Personnel Survivability and Recovery</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	9.591	56.225	10.020	0.000	10.020	30.252	0.000	25.540	26.044	0.000	157.672
65412B: <i>Isolated Personnel*</i>	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	25.540	26.044	0.000	51.584
654522: <i>CSAR EMD</i>	-	9.591	56.225	10.020	0.000	10.020	30.252	0.000	0.000	0.000	0.000	106.088

\*This project's R-2a exhibit has been suppressed due to funding not beginning until after FY 2025

**A. Mission Description and Budget Item Justification**

This Program Element contains two projects tasked to provide Air Force aircrew updated survival equipment to assist in their recovery in the event they become Isolated Personnel (IP).

Project 65412B (Isolated Personnel): The Isolated Personnel Survival and Flight Equipment (IPSAFE) program develops, and fields updates to aircrew survival kits to support climate specific equipment and aims to increase the ability for an IP to evade and survive in operational environments where rapid extraction is not possible.

Project 654522 (CSAR EMD): The Next Generation Survival Radio (NGSR) program is an Air Force led development effort to replace the aging legacy Combat Survivor Evader Locator (CSEL) handheld radio for the entire Joint Force. NGSR plans to deliver communications capability supporting the Joint Personnel Recovery Agency (JPRA) Combat Search and Rescue (CSAR) mission to locate, authenticate, and communicate with Joint forces who become isolated. The NGSR program plans replace legacy satellite communication and encryption methods to deliver secured end-to-end communication and locate and recover downed aircrew/special operations personnel.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.850M was expended for civilian pay expenses in this program element, and in FY24 0.900M is forecasted for civilian pay expenses in this program element.

The total cost of the CSEL Next Generation Survival Radio Rapid Prototyping Middle Tier of Acquisition effort is 208.1 million, including RDT&E and procurement of prototype units. The CSEL NGSR RP program is not fully funded across the Future Years Defense Program. The Department of the Air Force is assessing all options to address the funding shortfalls for MTA programs including additional funding in a future budget request, performance trades based on technical maturity, or transition to alternative pathways.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207279F / <i>Isolated Personnel Survivability and Recovery</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	27.881	56.225	0.000	0.000	0.000
Current President's Budget	9.591	56.225	10.020	0.000	10.020
Total Adjustments	-18.290	0.000	10.020	0.000	10.020
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-18.290	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	10.020	0.000	10.020

**Change Summary Explanation**

FY23 funding reduced by 18.290M to support higher Air Force priorities.

FY25 funding will continue the development of the NGSR HHR device and MUOS BLOS integration efforts.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207279F / <i>Isolated Personnel Survivability and Recovery</i>	<b>Project (Number/Name)</b> 654522 / <i>CSAR EMD</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
654522: <i>CSAR EMD</i>	-	9.591	56.225	10.020	0.000	10.020	30.252	0.000	0.000	0.000	0.000	106.088
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

The NGSR program is an Air Force led effort to replace the aging CSEL Radio supporting the entire Joint force. The DoD plans for the NGSR Handheld Radio (HHR) to serve as the primary communications link for all DoD aircrew who become isolated personnel. NGSR will replace legacy satellite communication and encryption methods to deliver communication capability in support of the JPRA CSAR mission to locate, authenticate, and communicate with Joint forces who become Isolated Personnel (IP).

NGSR provides secure, over-the-horizon, two-way data communications and precise geo-positioning information to rescue forces. Additionally, NGSR is able to operate in anti-access/area denial (A2/AD) environments by providing a low probability of intercept/low probability of detection communication pathway for isolated personnel. NGSR is one node of an overall personnel recovery network which includes multiple on-orbit satellite constellations, geographically dispersed satellite ground stations, joint service CSAR communication devices, and a Joint Personnel Recovery Center (JPRC) web application. NGSR plans to incorporate modern encryption technology to comply with current National Security Agency (NSA) cryptographic standards.

The Air Force will meet system objectives by executing a competitive Rapid Prototyping effort to design and build a production-ready NGSR artifact. Once prototyped, the Air Force, Army, Navy, and Marine Corps will field the NGSR prototype to their respective services via a follow-on sole-source Rapid Fielding production contract.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b>Title:</b> Next Generation Survival Radio (NGSR)	9.591	56.225	10.020
<b>Description:</b> The Research and Development (R&D) efforts associated with the NGSR effort aim to Rapidly Prototype a production-ready -- multi-function -- handheld radio in advance of planned future production and fielding efforts. The radio serves as the prime communications pathway for Army, Navy, Marine, and Air Force pilots in the event they become isolated personnel.			
<b>FY 2024 Plans:</b>			
<ul style="list-style-type: none"> <li>- Delivering vendor initial prototype designs</li> <li>- Delivering vendor-refined designs for evaluation</li> <li>- Kicking off Vendor prototype builds (software/hardware)</li> <li>- Building/configuring Mobile User Objective System (MUOS) Digitized Earth Terminal Interface (DETI) digital infrastructure</li> <li>- Building MUOS ground connections with the Joint Personnel Recovery Center (JPRC) interfaces</li> <li>- Conducting testing on waveform compatibility with MUOS constellation</li> <li>- Beginning test organization support and infrastructure build/configuration</li> </ul>			

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207279F / <i>Isolated Personnel Survivability and Recovery</i>	<b>Project (Number/Name)</b> 654522 / <i>CSAR EMD</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
- Beginning web migration of JPRC emergency event notification application			
<b><i>FY 2025 Plans:</i></b> -Will deliver second iteration of HHR prototypes -Will develop LPE Waveform and Encryption -Will develop Cloud/Web App (build-to-budget) and testing and prepare ATO			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY2025 funding decreased due to the deferral to future years of the final development of NGSR Prototyping efforts, tests, and integration into a single system architecture.			
<b>Accomplishments/Planned Programs Subtotals</b>	9.591	56.225	10.020

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 05 837140: <i>0207279F - Next Generation Survival Radio (654522)</i>	0.000	0.000	0.000	-	0.000	0.000	77.682	0.000	0.000	0.000	77.682

**Remarks**

**D. Acquisition Strategy**  
The Milestone Decision Authority (MDA), Air Force Program Executive Officer (PEO) Digital, designated the NGSR HHR program as a Middle Tier of Acquisition (MTA) Rapid Prototyping effort on 21 June 23. The program used Other Transactional Agreements (OTA) to award two project contracts and conduct the competitive prototype capability demonstrations. NGSR will kick off project development in February 2023. Single prototype will be down selected and awarded a final prototyping contract in 2026. NGSR is scheduled to transition from Rapid Prototype to Rapid Fielding in mid-2026

Program management for NGSR is under the direction of PEO Digital, located at Hanscom AFB, MA. The Aerospace Dominance Enabler Division (AFLCMC/HBZ; Hill AFB, UT) provides contracting, legal, comptroller, programmatic, engineering, test, and logistics support. The Air Force Life Cycle Management Center, provides Other Transaction Authority.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207279F / <i>Isolated Personnel Survivability and Recovery</i>	<b>Project (Number/Name)</b> 654522 / CSAR EMD
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MUOS Ground Station Upgrade	MIPR	Government : TBD	-	2.000	Apr 2023	20.200	Feb 2024	2.000	Apr 2025	-		2.000	Continuing	Continuing	-
Low Probability of Intercept/ Low Probability of Detection (LPI/LPD) Waveform Upgrade	MIPR	Government : TBD	-	0.000	Apr 2023	2.000	Nov 2023	1.000	Apr 2025	-		1.000	Continuing	Continuing	-
NGSR Rapid Prototype (Design/Refine/Build)	C/FFP	TBD : TBD	-	3.730	Jan 2024	22.398	Jan 2024	2.020	Jul 2025	-		2.020	Continuing	Continuing	-
JPRC Software Modernization and Migration	Various	Government : TBD	-	2.564	Apr 2023	3.552	Nov 2023	1.000	Jul 2025	-		1.000	Continuing	Continuing	-
Encryption Development	MIPR	Government : TBD	-	-		2.575	Nov 2023	1.000	Jul 2025	-		1.000	Continuing	Continuing	-
<b>Subtotal</b>			-	8.294		50.725		7.020		-		7.020	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGSR Direct Cite Authority	TBD	Not specified. : Hill AFB, UT	-	-		0.850	Jan 2024	0.900	Jan 2025	-		0.900	Continuing	Continuing	-
<b>Subtotal</b>			-	-		0.850		0.900		-		0.900	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Sys Test & Eval	Various	Not specified. : TBD	-	0.130	Mar 2023	2.000	Mar 2024	2.000	Jan 2025	-		2.000	Continuing	Continuing	-
<b>Subtotal</b>			-	0.130		2.000		2.000		-		2.000	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207279F / <i>Isolated Personnel Survivability and Recovery</i>	<b>Project (Number/Name)</b> 654522 / <i>CSAR EMD</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Sys Eng / Prog Management (SEPM)	TBD	Not specified. : TBD	-	1.167	Jul 2023	2.650	Nov 2023	0.100	Jul 2025	-		0.100	Continuing	Continuing	-
<b>Subtotal</b>			-	1.167		2.650		0.100		-		0.100	Continuing	Continuing	N/A
<b>Project Cost Totals</b>			-	9.591		56.225		10.020		-		10.020	Continuing	Continuing	N/A

**Remarks**  
 NGSR Rapid Prototype (Design/Refine/Build) contract award changed from June 2023 to Jan 2024 due to unique waveform specifications within the technical documentation required to begin development of the handheld device.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207279F / <i>Isolated Personnel Survivability and Recovery</i>	<b>Project (Number/Name)</b> 654522 / CSAR EMD

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>1. Beyond Line of Site Development</b>	
1.1. MUOS Ground Station Upgrade - DETI	
1.2. LPI/LPD Waveform Upgrade	
<b>2. NGSR Rapid Prototyping</b>	
2.1. Competitive Rapid Prototype Development	
2.2. Personnel Recovery Systems Integration and Testing	
2.3. BLOS Integration and Testing	
<b>3. JPRC Software Modernization and Migration</b>	
3.1. JPRC Application (Web Transition)	
3.2. JPRC Software Cloud Migration	
<b>4. NGSR Message Encryption Development</b>	
4.1. Encryption Selection/Tailoring	
4.2. Encryption Integration and Testing	
<b>5. Objective System - Rapid Fielding</b>	
5.1. Planning	
5.2. NGSR Operational Testing	
5.3. NGSR Production	
<b>6. Software Augmentation and Upkeep</b>	
6.1. MUOS Ground Station - DETI	
6.2. NGSR Handheld Device	
6.3. JPRC Applications and Cloud	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207279F / <i>Isolated Personnel Survivability and Recovery</i>	<b>Project (Number/Name)</b> 654522 / CSAR EMD

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>1. Beyond Line of Site Development</b>				
1.1. MUOS Ground Station Upgrade - DETI	3	2023	1	2026
1.2. LPI/LPD Waveform Upgrade	3	2024	2	2026
<b>2. NGSR Rapid Prototyping</b>				
2.1. Competitive Rapid Prototype Development	2	2024	1	2026
2.2. Personnel Recovery Systems Integration and Testing	4	2024	1	2026
2.3. BLOS Integration and Testing	3	2024	1	2026
<b>3. JPRC Software Modernization and Migration</b>				
3.1. JPRC Application (Web Transition)	3	2023	1	2026
3.2. JPRC Software Cloud Migration	3	2023	1	2026
<b>4. NGSR Message Encryption Development</b>				
4.1. Encryption Selection/Tailoring	2	2023	1	2026
4.2. Encryption Integration and Testing	1	2024	1	2026
<b>5. Objective System - Rapid Fielding</b>				
5.1. Planning	1	2024	1	2026
5.2. NGSR Operational Testing	1	2025	4	2027
5.3. NGSR Production	1	2027	4	2028
<b>6. Software Augmentation and Upkeep</b>				
6.1. MUOS Ground Station - DETI	1	2026	4	2028
6.2. NGSR Handheld Device	1	2026	4	2028
6.3. JPRC Applications and Cloud	1	2026	4	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207328F / <i>Stand In Attack Weapon</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	0.000	243.076	298.585	375.528	0.000	375.528	405.136	381.648	299.313	301.956	Continuing	Continuing
653133: <i>Stand In Attack Weapon</i>	0.000	243.076	298.585	375.528	0.000	375.528	405.136	381.648	299.313	301.956	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Stand-in Attack Weapon (SiAW) system will provide capability to strike rapidly re-locatable targets that create the Anti-Access/Area Denial (A2/AD) environment for 5th Generation and Future Advanced Aircraft. SiAW targets include Theater Ballistic Missile Launchers, Land Attack and Anti-Ship Cruise Missile Launchers, Jammers, Anti-Satellite Systems, and Integrated Air Defense Systems. The SiAW missile system is being developed under a Digital Acquisition (DA) approach that emphasizes agility and innovation. Interim combat capability is pursued through the Navy's Advanced Anti-Radiation Guided Missile-Extended Range (AARGM-ER) program with improved warhead/fuze and F-35 integration (including Universal Armament Interface [UAI] and Mission Planning).

Implements Digital Acquisition tenants of Open, Agile, and Digital; builds and establishes industrial base innovation around the program's enterprise for modularity and adaptability for the life cycle of the weapons system. Leverages common component development, in collaboration with other weapon systems, to reduce redundant costs between systems with similar subsystems requirements. Invests in analytical, data management, digital environments, networks, facilities, and security infrastructure upgrades supporting development of this program's capabilities, while leveraging DoD and DAF enterprise IT solutions. Expands program office staff, facilities, and security infrastructure to support the required classification levels for this program's activities. Engages with DoD, DAF, and industry stakeholders to refine threat analysis, refine inventory requirements, and plan upgrade requirements. Capitalizes on and incorporates successful laboratory research and development efforts applicable to this program's capability.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

FY24 RDT&E funding for PE 27328F, Program 653133 is in compliance with budgeted end items per the approved test strategy and FY23 Omnibus, Sec. 8059.

The total cost of the Stand-in Attack Weapon Rapid Prototyping Middle Tier of Acquisition effort is 1,130.1 million, including RDT&E and procurement of prototype units. The SiAW RP program is fully funded across the Future Years Defense Program.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In PY 6.584M was expended for civilian pay expenses in this program element, and in CY 10.569M is forecasted for civilian pay expenses in this program element.

The FY2025 funding request was reduced by -5.000 million to account for the availability of prior year execution balances

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207328F / <i>Stand In Attack Weapon</i>
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This program element may include necessary emergent or unanticipated civilian pay expenses required to manage, execute, and deliver SiAW for emergent or unanticipated weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605828F.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	263.152	298.585	381.867	0.000	381.867
Current President's Budget	243.076	298.585	375.528	0.000	375.528
Total Adjustments	-20.076	0.000	-6.339	0.000	-6.339
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-13.218	0.000			
• SBIR/STTR Transfer	-6.858	0.000			
• Other Adjustments	0.000	0.000	-6.339	0.000	-6.339

**Change Summary Explanation**

FY23 adjustments are -7.118M on FY23-80PA; Below Threshold Reprogramming (BTR) of -6.099M and -6.858M for Small Business Innovative Research (SBIR) FY25 funding request was reduced by -5.000M to account for the availability of prior year execution balances; -2.000M move to Enterprise Digital Material Management (DMM) and inflation increases

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Warhead / Electronic Safe and Arm Fuze (ESAF) Development / System Engineering / Program Management (SEPM)	13.314	0.000	0.000
<b>Description:</b> Development of a new warhead and ESAF to support AARGM-ER. Will design, test, and certify new warhead/ESAF.			
<b>FY 2024 Plans:</b> Work was completed in FY23. No ESAF/SEPM activity in FY24.			
<b>FY 2025 Plans:</b> No ESAF/SEPM activity in FY25.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0207328F / <i>Stand In Attack Weapon</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
N/A				
<p><b>Title:</b> Universal Armament Interface (UAI) / Anti-Radiation Homing (ARH) message / SEPM</p> <p><b>Description:</b> Develop and test a UAI/ARH message set for the AARGM-ER missile.</p> <p><b>FY 2024 Plans:</b> Work completed in FY23. No UAI/ARH activity in FY24.</p> <p><b>FY 2025 Plans:</b> No UAI/ARH activity in FY25.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> N/A</p>		1.650	0.000	0.000
<p><b>Title:</b> F-35 Integration</p> <p><b>Description:</b> Integration of the AARGM-ER and SiAW missiles onto the F-35. Efforts for aircraft integration will address the F-35 aircraft software development, Mission Planning capability, engineering to support weapon integration, testing, and airworthiness certification for the missile carriage and employment efforts.</p> <p><b>FY 2024 Plans:</b> Continue integrating the AARGM-ER on the F-35 as an interim combat capability; includes ground testing, F-35 weapon integration, launcher adapter development and mission planning. Begin integration of the SiAW missiles onto the F-35.</p> <p><b>FY 2025 Plans:</b> Complete integrating the AARGM-ER on the F-35 as interim combat capability; includes ground testing, F-35 weapon integration, launcher adapter development, mission planning, and flight testing. Continue integration of SiAW missile onto the F-35 to include ground testing, mission planning, mission, data development, system integration lab testing and JSE integration.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to completion of AARGM-ER test events.</p>		3.949	51.791	45.375
<p><b>Title:</b> SiAW Development</p> <p><b>Description:</b> Conduct development and testing of discrete SiAW technologies as well as the integrated SiAW weapons system. This includes the development of an initial SiAW capability via the Middle Tier Acquisition described in Section A, as well as a post-MTA activity that will bring additional capability and integrate the weapon onto the F-35.</p> <p><b>FY 2024 Plans:</b></p>		148.425	210.031	224.264

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207328F / <i>Stand In Attack Weapon</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Begin ramp up for SiAW prototyping development competitive selection.			
<b>FY 2025 Plans:</b> Execute Development, Risk Reduction (RR), system security, anti-tamper capabilities and begin Integrated Test (IT) for SiAW weapon system. Begin the establishment of the Integrated Digital Environments (IDE). This includes establishment of modeling and simulation capability through the maturation of the digital thread and establishment of the virtual twin.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to increase activities associated with SiAW Prototyping Development Efforts.			
<b>Title:</b> Target/Test Assets, Testing, & Support	75.738	36.763	105.889
<b>Description:</b> Provides associated government and contract support for F-35 developmental and operational testing for AARGM-ER and SiAW. Includes required test assets and support, flight test equipment, construction and procurement of targets to meet mission requirements, test wing and range support to include both sea and land ranges, and ground/flight test support.			
<b>FY 2024 Plans:</b> Complete AARGM-ER test efforts. Begin SiAW missile test support, purchasing test equipment, target construction, range/ground support, and test assets. Continue target/threat emitter acquisition to include weapon cybersecurity support and test investments and development of flight telemetry and termination system.			
<b>FY 2025 Plans:</b> Continue SiAW missile test support, purchasing test equipment, target construction, range/ground support, and test assets. Continue target/threat emitter acquisition to include weapons cybersecurity support and test investments, and development and certification of flight telemetry and termination system. Start procuring test and integration assets for full envelope certification.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to SiAW test events and purchase of long lead items needed for the test activities.			
<b>Accomplishments/Planned Programs Subtotals</b>	243.076	298.585	375.528

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2025</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To</b>	<b>Total Cost</b>
			<b>Base</b>	<b>OCO</b>	<b>Total</b>					<b>Complete</b>	<b>Total Cost</b>
• RDTE 07 0205601N: <i>AARGM-ER (Navy)</i>	76.314	51.807	26.381	-	26.381	22.264	10.500	9.633	9.835	Continuing	Continuing
• MPAF 02 0207328F: <i>Stand-In Attack Weapon</i>	77.975	41.947	173.048	-	173.048	149.231	347.358	399.293	407.209	7,205.703	8,801.764

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207328F / <i>Stand In Attack Weapon</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**  
RDTE: US Navy AARGM-ER Program Office, Anti-Radiation Missile Improvement Systems Development US Navy appropriation RDT&E 1319.  
MPAF: Funding contained in procurement document utilized to procure initial production lot of AARGM-ER weapons.

**E. Acquisition Strategy**

The Stand-in Attack Weapon (SiAW) program will utilize a multi-phase approach to migrate advanced technologies and weapon designs into an Model Based System Engineering (MBSE) environment and then rapidly evolve the designs for an initial capability followed by a more comprehensive capability. The first Phases (1 & 2) have been approved as a Middle Tier of Acquisition (MTA) program, and will focus on the integration of key technologies, the implementation of digital acquisition, a competitive selection, and an initial capability on a surrogate aircraft in less than 5 yrs. In Phase 3, sometimes referred to as the "Post-MTA" phase, the SiAW program plans to transition to a Major Capability Acquisition (MCA) where the capability will be improved and the system will be integrated on the F-35A.

Key tenets of the SiAW program will be the establishment/use of a MBSE environment, implementation of a Weapon Open System Architecture (WOSA), and Agile Software Development.

Air Force plans to continue Navy-led AARGM-ER investments to field an interim combat capability on the F-35.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207328F / <i>Stand In Attack Weapon</i>	<b>Project (Number/Name)</b> 653133 / <i>Stand In Attack Weapon</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Warhead / ESAF Development	MIPR	NGDS : Northridge, CA	0.000	13.314	Dec 2022	-		-		-		-	Continuing	Continuing	-
Universal Armament Interface (UAI) Anti-Radiation Homing message (ARH)	MIPR	Various : Various	0.000	1.650	Apr 2023	-		-		-		-	Continuing	Continuing	-
F-35 Integration	MIPR	Various : Various	0.000	0.899	Aug 2023	51.791	Nov 2023	44.112	Jan 2025	-		44.112	Continuing	Continuing	-
Mission Planning	MIPR	Various : Various	0.000	3.050	Apr 2023	-		1.263	Jan 2025	-		1.263	Continuing	Continuing	-
SiAW Development	Various	Various : Various	0.000	131.522	Aug 2023	179.216	Aug 2024	182.367	Dec 2024	-		182.367	Continuing	Continuing	-
<b>Subtotal</b>			0.000	150.435		231.007		227.742		-		227.742	Continuing	Continuing	N/A

**Remarks**  
Northrop Grumman Defense Systems (NGDS)

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Civ Pay - Direct Cite Authorization (DCA)	Allot	AFLCMC/FZA : Wright Pat, OH	0.000	6.740	Oct 2022	10.569	Oct 2023	10.863	Oct 2024	-		10.863	Continuing	Continuing	-
<b>Subtotal</b>			0.000	6.740		10.569		10.863		-		10.863	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Assets AARGM-ER	MIPR	NGDS : Northridge, CA	0.000	22.056	Apr 2023	-		-		-		-	Continuing	Continuing	-
Test Assets SiAW	Various	Various : Various	0.000	45.160	Mar 2023	26.723	Apr 2024	81.668	Apr 2025	-		81.668	Continuing	Continuing	-
Government Test/Target Support (includes flight test equipment, Targets/ shapes builds, 96 TW	Various	Various : Various	0.000	8.522	Oct 2022	10.040	Oct 2023	24.221	Oct 2024	-		24.221	Continuing	Continuing	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207328F / <i>Stand In Attack Weapon</i>	<b>Project (Number/Name)</b> 653133 / <i>Stand In Attack Weapon</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Warhead &amp; ESAF Development</b>	
Design Warhead & Electronic Safe and Arm Fuze	
<b>UAI / ARH</b>	
Design, Test and validate UAI / ARH message set	
<b>F-35 Integration</b>	
AARGM-ER and SiAW integration on F-35	
<b>SiAW Development</b>	
SiAW Development	
SiAW Phase 2 - Contract Award	
SiAW Phase 2 - Prototype Development	
<b>Target &amp; Test Assets, Test, &amp; Support</b>	
Flight test support, range modifications, & targets for AARGM-ER and SiAW	

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207328F / <i>Stand In Attack Weapon</i>	<b>Project (Number/Name)</b> 653133 / <i>Stand In Attack Weapon</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Warhead &amp; ESAF Development</b>				
Design Warhead & Electronic Safe and Arm Fuze	1	2023	4	2023
<b>UAI / ARH</b>				
Design, Test and validate UAI / ARH message set	1	2023	4	2023
<b>F-35 Integration</b>				
AARGM-ER and SiAW integration on F-35	1	2023	4	2029
<b>SiAW Development</b>				
SiAW Development	3	2023	4	2026
SiAW Phase 2 - Contract Award	4	2023	4	2023
SiAW Phase 2 - Prototype Development	4	2023	4	2026
<b>Target &amp; Test Assets, Test, &amp; Support</b>				
Flight test support, range modifications, & targets for AARGM-ER and SiAW	1	2023	4	2028

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / <i>Full Combat Mission Training</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	12.528	7.597	7.754	0.000	7.754	7.939	8.094	8.377	8.543	Continuing	Continuing
655012: <i>Full Combat Mission Training</i>	-	12.528	7.597	7.754	0.000	7.754	7.939	8.094	8.377	8.543	Continuing	Continuing

**Note**

In FY 2025, PE 0207605F, Wargaming and Simulation Centers, Project 672888, Distributed Mission Operations Center, efforts were transferred to PE 0207701F, Full Combat Mission Training, Project 672888, Distributed Mission Operations Center to meet higher priority AF Operational Readiness and Training efficiencies. Subsequently, PE 0207701F now resides in BA05 (AFRL integration work) and BA07 (DMOC Efforts).

**A. Mission Description and Budget Item Justification**

Full Combat Mission Training (FCMT) supports Air Force Distributed Mission Operations (DMO), Live-Synthetic Blended and Joint Simulation Environment (JSE) integration. FCMT funding provides research in areas benefiting the DMO/Live Virtual Constructive (LVC) environment and the Air Force JSE enterprise. It also provides research and development to facilitate integration of fielded and newly acquired Air Force owned training devices into DMO/LVC networks and JSE; enhances the quality of training for the systems added to the network; enables aircrews to network with LVC components to form the integrated DMO battlespace; links geographically distributed high-fidelity combat and combat support training devices including Command and Control and Intelligence, Surveillance, and Reconnaissance systems and develops, demonstrates, and inserts Multi-Level Security (MLS) capability. This capability enables warfighters to exercise and train at the operational and strategic levels of war, conduct networked unit-level training at home station and high-end test and training at joint test and training sites.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.00M was expended for civilian pay expenses in this program element. FY24 \$0.00M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / <i>Full Combat Mission Training</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	12.528	7.597	7.740	0.000	7.740
Current President's Budget	12.528	7.597	7.754	0.000	7.754
Total Adjustments	0.000	0.000	0.014	0.000	0.014
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.014	0.000	0.014

**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

**Project:** 655012: *Full Combat Mission Training*

Congressional Add: *Airborne Augmented Reality for Pilot Training*

Congressional Add Subtotals for Project: 655012

Congressional Add Totals for all Projects

	<b>FY 2023</b>	<b>FY 2024</b>
	9.500	-
	9.500	-
	9.500	-

**Change Summary Explanation**

No other significant changes.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training				<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
655012: Full Combat Mission Training	-	12.528	7.597	7.754	0.000	7.754	7.939	8.094	8.377	8.543	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Full Combat Mission Training (FCMT) supports Air Force Distributed Mission Operations (DMO), Live-Synthetic, Blended, and Joint Simulation Environment (JSE) integration. FCMT funding provides research in areas benefiting the DMO/Live Virtual Constructive (LVC) environment as a whole; provides research and development to facilitate integration of fielded and newly acquired Air Force owned training devices into DMO/LVC networks; enhances the quality of training for the systems added to the network; enables aircrews to network with LVC components to form the integrated DMO battlespace; links geographically distributed high-fidelity combat and combat support training devices including Command and Control and Intelligence, Surveillance, and Reconnaissance systems and develops, demonstrates, and inserts Multi-Level Security (MLS) capability. This capability enables warfighters to exercise and train at the operational and strategic levels of war as well as conduct networked unit-level training at home station.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 \$0.00M was expended for civilian pay expenses in this program element. FY24 \$0.00M is forecasted for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Cross Domain Solutions (CDS)	0.980	3.420	3.489
<b>Description:</b> Development, demonstration, and insertion of Multi-Level Security (MLS) capability supporting Live Virtual Constructive training for fifth generation platforms.			
<b>FY 2024 Plans:</b> Validate the F-35 CDS. Begin the migration of the CDS to other simulation platforms (F-22 and F-16).			
<b>FY 2025 Plans:</b> Validate Rule Sets for FVEY CDS solution. Begin work to rapidly search SCGs to identify CDS rule set focus areas. Continue DMO/JSE MLS development and validation. Create common rule sets for interoperability.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to inflationary increase of funding from FY24 to FY25			
<b>Title:</b> Distributed Mission Operations Development	0.803	1.899	1.939

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Development, demonstrations, studies and insertions of Live Virtual Constructive related technologies and proficiency based continuation training strategies.</p> <p><b>FY 2024 Plans:</b> Evaluate training tools for implementation in the Joint Simulation Environment (JSE).</p> <p><b>FY 2025 Plans:</b> Development work to ensure persistent JSE/DMO interoperability. Demonstrate JSE/DMO interoperability in at least two mission training applications.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to related to demand signals for JSE growth and needed interoperability with DMO infrastructure.</p>				
<p><b>Title:</b> Development and validation of DMO/JSE and Blended training assessments tools.</p> <p><b>Description:</b> Studies to assess and validate Live Virtual Constructive (LVC) training and accreditation of portions of this process; studies to develop objective enhancement and measurement tools DMO/JSE and blended training environments.</p> <p><b>FY 2024 Plans:</b> The FY24 plan is to migrate predictive analytic tools into routine operational training readiness assessment and reporting.</p> <p><b>FY 2025 Plans:</b> Continue trade space analytics for integrating purpose built components into the JSE ecosystem to support local and distributed blended training events. Demonstrate blended training and JSE interoperability in live flight exemplars.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to the demand signals for broader JSE mission applications and needs for blended training interoperability demonstrations.</p>		0.620	1.139	1.163
<p><b>Title:</b> Network Studies</p> <p><b>Description:</b> Research and development to provide for the integration of fielded and newly introduced Air Force, Joint and Coalition high-fidelity flight and mission trainers.</p> <p><b>FY 2024 Plans:</b> Demonstrate seamless training effectiveness and proficiency tracking from AETC to ACC and into operations.</p> <p><b>FY 2025 Plans:</b></p>		0.625	1.139	1.163

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Begin evaluations of local and distributed services that reduce network transport delays while maintaining/enhancing training quality services. Perform quality of training evaluations for JSE components. Evaluate alternative approaches for on-premise and cloud-based services supporting improved network responsiveness and agility.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased due to budget fluctuations, but level of activity is planned with this in mind.			
<b>Accomplishments/Planned Programs Subtotals</b>	3.028	7.597	7.754

	<b>FY 2023</b>	<b>FY 2024</b>
<b><i>Congressional Add:</i></b> Airborne Augmented Reality for Pilot Training	9.500	-
<b><i>FY 2023 Accomplishments:</i></b> Development of visual capabilities for live, virtual and construct air combat training systems.		
<b>Congressional Adds Subtotals</b>	9.500	-

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Air Force Research Laboratory (AFRL) will conduct research/studies to develop/implement Cross Domain Solutions (CDS) supporting integrated DMO/JSE and Live-synthetic blended training. Fielded and projected Air Force flight and mission training systems without blended training capability and will be modified to ensure training compatibility.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Augmented Reality Development	SS/FFP	Air Force Research Lab : WPAFB, OH	-	9.500	Jan 2023	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	9.500		-		-		-		-	Continuing	Continuing	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Cross Domain Solutions (CDS): Development, Testing and insertion of Multi-Level-Security protocols, Cross Domain rule set development and accreditation	Various	Air Force Research Lab, 711 Human Performance Wing, Human : Dayton, OH	-	0.980	Jan 2023	3.420	Jan 2024	3.482	Nov 2024	-		3.482	Continuing	Continuing	-
Develop DMO/ JSE Blended training capabilities: demonstration, studies and insertion of distributedmission ops related technologies.	Various	Air Force Research Lab, 711 Human Performance Wing : Dayton, OH	-	0.803	Jan 2023	1.899	Jan 2024	1.934	Nov 2024	-		1.934	Continuing	Continuing	-
Validation of warfighter seasoning and development of objective performance enhancements for DMO/ JSE/Blended environment.	Various	Air Force Research Lab, 711 Human Performance Wing : Dayton, OH	-	0.620	Jan 2023	1.139	Jan 2024	1.161	Nov 2024	-		1.161	Continuing	Continuing	-
Other Network Studies: Supporting integration of newly fielded high-fidelity training systems and networks	Various	Air Force Research Lab, 711 Human Performance Wing : Dayton, OH	-	0.625	Jan 2023	1.139	Jan 2024	1.161	Nov 2024	-		1.161	Continuing	Continuing	-
<b>Subtotal</b>			-	3.028		7.597		7.738		-		7.738	Continuing	Continuing	N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Joint Simulation Environment phase 1</b>																												
Develop Multi-Level Security testbed and support testing on 5th Gen systems	██████████																											
Develop 4th to 5th generation rule sets for coalition integration	██████████																											
Develop metrics for routine proficiency evaluations and determine standard format for storing/analyzing proficiency data	██████████																											
Create and evaluate alternative data formats for routinely tracking and storing performance and proficiency data	██																											
Refine learning managed scenario and integrate with blended training events	██																											
Develop and integrate After Action Review tools for Mission Training Centers	██																											
Develop metrics and tools to measure training proficiency gained during blended training events/standardized implementation at Distributed training Centers (DTCs)	████████████████████																											
Conduct interoperability studies to evaluate the training value of 5th generation interoperable coalition training on the Combat Air Forces (CAF) DMO network and in JSE	████████████████████																											
Develop joint and coalition data standards and evaluate data management methods to support a full range of blended training	████████████████																											
Demonstrate persistent performance measurement and readiness assessment in fourth to 5th generation training events	██																											

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Develop gateways and CDS to integrate high-fidelity trainers with Air Force, joint, and coalition networks	██████████																											
Evaluate compressed DIS network standards for CDS in DMO/Blended training	████████████████████																											
Integrate and evaluate multi-domain operations and kill-chain training strategies for JSE/Blended training					██																							
Evaluate multi-national mission planning and debrief technologies in research training events					████████████████████																							
Implement, evaluate, and field technologies aligned with future training strategies for LVC	██																											
Develop specifications for live data harvesting using encrypted systems and tools	██																											
Update Five Eyes (FVEY) rule sets for full 4th, 5th and autonomous tactical employment training									██																			
Create Secure LVC testbed environment for kill chain and JADC2 ops training via DMO/ JSE													██															
<b>Joint Simulation Environment Phase 2</b>																												
Release Request For Proposal (RFP)					██████																							
Award Development Contract					██████																							
Begin initial design and development efforts	████████████████████																											
<b>Joint simulation environment Phase 3</b>																												
Develop Multi-Level Security testbed and support testing on 5th Gen systems	████████████████████																											



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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Develop gateways and CDS to integrate high-fidelity trainers with Air Force, joint and coalition networks																												
Evaluate compressed DIS network standards for CDS in DMO; evaluate JSE alternatives																												
Integrate and evaluate multi-domain operations and kill-chain training scenarios for contested environments																												
Evaluate multi-national mission planning and debrief technologies in research training events																												
Implement, evaluate and field technologies aligned with future training strategies for LVC																												
Develop specifications for live data harvesting using encrypted systems and tools																												
Update Five Eyes (FVEY) rule sets for full 4th, 5th and collaborative combat aircraft tactical employment training																												
Create Secure testbed environment for kill chain and JADC2 ops training via DMO/JSE and blended training																												
<b>Joint Simulation Environment Phase 4</b>																												
Release Request For Proposal (RFP)																												
Award Development Contract																												
Begin initial Design and Development efforts																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Joint Simulation Environment phase 1</b>				
Develop Multi-Level Security testbed and support testing on 5th Gen systems	1	2023	2	2023
Develop 4th to 5th generation rule sets for coalition integration	1	2023	2	2023
Develop metrics for routine proficiency evaluations and determine standard format for storing/analyzing proficiency data	1	2023	2	2023
Create and evaluate alternative data formats for routinely tracking and storing performance and proficiency data	1	2023	4	2024
Refine learning managed scenario and integrate with blended training events	1	2023	1	2025
Develop and integrate After Action Review tools for Mission Training Centers	1	2023	2	2025
Develop metrics and tools to measure training proficiency gained during blended training events/standardized implementation at Distributed training Centers (DTCs)	1	2023	4	2023
Conduct interoperability studies to evaluate the training value of 5th generation interoperable coalition training on the Combat Air Forces (CAF) DMO network and in JSE	1	2023	4	2023
Develop joint and coalition data standards and evaluate data management methods to support a full range of blended training	1	2023	3	2023
Demonstrate persistent performance measurement and readiness assessment in fourth to 5th generation training events	1	2023	3	2026
Develop gateways and CDS to integrate high-fidelity trainers with Air Force, joint, and coalition networks	1	2023	1	2024
Evaluate compressed DIS network standards for CDS in DMO/Blended training	1	2023	3	2025
Integrate and evaluate multi-domain operations and kill-chain training strategies for JSE/Blended training	1	2024	3	2026
Evaluate multi-national mission planning and debrief technologies in research training events	3	2023	2	2025

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Implement, evaluate, and field technologies aligned with future training strategies for LVC	1	2023	2	2025
Develop specifications for live data harvesting using encrypted systems and tools	2	2023	4	2026
Update Five Eyes (FVEY) rule sets for full 4th, 5th and autonomous tactical employment training	4	2024	4	2026
Create Secure LVC testbed environment for kill chain and JADC2 ops training via DMO/JSE	4	2024	3	2027
<b>Joint Simulation Environment Phase 2</b>				
Release Request For Proposal (RFP)	3	2023	3	2023
Award Development Contract	2	2023	2	2023
Begin initial design and development efforts	2	2023	2	2024
<b>Joint simulation environment Phase 3</b>				
Develop Multi-Level Security testbed and support testing on 5th Gen systems	3	2023	2	2024
Develop 4th and 5th Generation rule sets for coalition integration	1	2023	2	2023
Develop metrics for routine proficiency evaluations and determine standard format for storing /analyzing proficiency data	1	2023	2	2023
Create and evaluate alternative data formats for routinely tracking and storing performance and proficiency data	1	2023	1	2025
Refine learning managed scenario and integrate with DMO/JSE/Blended training events	2	2024	2	2026
Develop and integrate After Action Review tools for Mission Training Centers	1	2023	4	2025
Develop metrics and tools to measure training proficiency gained during blended training events /standardize implementation at Distributed Training Centers (DTCs)	1	2023	4	2025
Conduct interoperability studies to evaluate the training value of 5th Gen interoperable coalition training on the Combat Air Forces (CAF) DMO network and in JSE events	3	2024	3	2026
Develop joint and coalition data standards and evaluate data management methods to support blended training events	1	2023	3	2026

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0207701F / Full Combat Mission Training	<b>Project (Number/Name)</b> 655012 / Full Combat Mission Training
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<b>Events by Sub Project</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Demonstrate persistent performance measurement and readiness assessment in fourth and 5th Gen JSE and blended training events	3	2024	4	2026
Develop gateways and CDS to integrate high-fidelity trainers with Air Force, joint and coalition networks	1	2023	3	2025
Evaluate compressed DIS network standards for CDS in DMO; evaluate JSE alternatives	4	2024	2	2026
Integrate and evaluate multi-domain operations and kill-chain training scenarios for contested environments	1	2023	4	2024
Evaluate multi-national mission planning and debrief technologies in research training events	4	2024	4	2027
Implement, evaluate and field technologies aligned with future training strategies for LVC	1	2023	2	2025
Develop specifications for live data harvesting using encrypted systems and tools	2	2023	4	2026
Update Five Eyes (FVEY) rule sets for full 4th, 5th and collaborative combat aircraft tactical employment training	2	2025	4	2027
Create Secure testbed environment for kill chain and JADC2 ops training via DMO/JSE and blended training	4	2024	4	2026
<b>Joint Simulation Environment Phase 4</b>				
Release Request For Proposal (RFP)	2	2023	3	2023
Award Development Contract	2	2023	2	2023
Begin initial Design and Development efforts	2	2023	2	2024

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0208036F / <i>Medical C-CBRNE Programs</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	2.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.006
654910: <i>Aeromedical Readiness</i>	-	0.000	2.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.006
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**A. Mission Description and Budget Item Justification**

Current projects in this program include Aeromedical Readiness (Project 654910). Aeromedical Readiness projects provide aerospace medical systems and treatment equipment to improve casualty care and meet worldwide warfighter medical operational requirements.

Aeromedical Readiness provides key aeromedical devices, life-saving capabilities and quality of life technologies and equipment. This program enables the critical care of combat casualties by further developing and optimizing existing technologies for ground Expeditionary Medical Systems (EMEDS) and aeromedical evacuation systems. EMEDS and aeromedical evacuation systems provide the urgent care needed to treat deployed injured warfighters and return them to duty while in country, and to treat combat casualties that need to be safely transported to a stateside hospital for follow on treatment. The program also supports critical capabilities development in the multi-disciplinary areas for light-weight, durable, and rapidly deployable medical equipment to ensure the Air Force is poised to meet future medical readiness and operational requirements, to include but not limited to Spinal Immobilization Transport Device (SIT-D), Pathogen Detection Capability, Automated Vision Testing, Whole Blood Transport and other FDA approved medical treatment devices. This program supports projects ranging from research efforts to optimize human physiologic and cognitive performance for Air Combat Command, to development of patient isolation and transportation devices for Air Mobility Command that enable aeromedical evacuation of patients suffering with highly infectious diseases.

In FY 2024, PE 0604617F, (Agile Combat Support), Project 654910, (Aeromedical Readiness) efforts were transferred to PE 0208036F, (Medical Counter-CBRN), Project 654910, (Aeromedical Readiness), in order to consolidate Combat Support medical readiness requirements under a single PE.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)	<b>R-1 Program Element (Number/Name)</b> PE 0208036F I Medical C-CBRNE Programs
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	2.006	2.051	0.000	2.051
Current President's Budget	0.000	2.006	0.000	0.000	0.000
Total Adjustments	0.000	0.000	-2.051	0.000	-2.051
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-2.051	0.000	-2.051

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Aeromedical Equipment Testing/Studies/Minor Development	0.000	2.006	-
<b>Description:</b> Aeromedical supports Defense Health Program, Joint Services and MAJCOM medical modernization. The Air Force Medical Readiness Agency (AFMRA) Surgeon General Requirement Oversight Council (SGROC) Governance process manages medical capability gaps, research and development, funding prioritization and decisional boards. Aeromedical procures and qualifies commercial-off-the-shelf (COTS) or near COTS medical and aeromedical products and/or performs minor development, studies and management efforts, under Aeromedical Readiness. Aeromedical Program efforts evaluate integrating technologies or prototype systems in a realistic operating environment, expedite technology transition from the laboratory to operational use, emphasis on proving maturity prior to integration and viable decision ready materiel solutions.			
<b>FY 2024 Plans:</b> Contract Studies to develop Medical requirements.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Currently no FY25 plans/funding			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	2.006	-

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0208036F / <i>Medical C-CBRNE Programs</i>
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**E. Acquisition Strategy**

Programs consider a streamlined acquisition approach. Whenever practical, commercial items are tested and evaluated as candidates for providing solutions to user needs. This normally involves contractor characterization, verification, and qualification testing to ensure Food and Drug Administration (FDA) approved, commercial off-the-shelf equipment is properly evaluated to identify any capability gaps that may require minor modifications for military use. However, acquisition strategies may also be carried out for traditional Engineering and Manufacturing Development (EMD). Funds may be used to address associated emerging Aeromedical Readiness requirements and for program management activities.





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0208036F / <i>Medical C-CBRNE Programs</i>	<b>Project (Number/Name)</b> 654910 / <i>Aeromedical Readiness</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Aeromedical Readiness RDTE Efforts</i></b>				
Aeromedical Equipment Testing/Studies/Minor Development	1	2024	4	2027
Spinal Transport Device testing concludes, mod contract award	2	2024	2	2025
Digital Engineering Investment	4	2024	4	2025

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303267F / <i>Auctioned Spectrum Relocation Fund</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	60.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	60.167
658062: <i>Auctioned Spectrum Relocation Fund</i>	-	60.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	60.167
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Funding supports Spectrum relocation and sharing activities.

No FY25 Funding is requested.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b><u>B. Program Change Summary (\$ in Millions)</u></b>	<b><u>FY 2023</u></b>	<b><u>FY 2024</u></b>	<b><u>FY 2025 Base</u></b>	<b><u>FY 2025 OCO</u></b>	<b><u>FY 2025 Total</u></b>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	60.167	0.000	0.000	0.000	0.000
Total Adjustments	60.167	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	60.167	0.000	0.000	0.000	0.000

**Change Summary Explanation**

Received funds during execution year through a transfer from OMB

<b><u>C. Accomplishments/Planned Programs (\$ in Millions)</u></b>	<b><u>FY 2023</u></b>	<b><u>FY 2024</u></b>	<b><u>FY 2025</u></b>
<b><i>Title:</i></b> Auctioned Spectrum Relocation Fund	60.167	-	-
<b><i>Description:</i></b> Funding supports Spectrum relocation and sharing activities			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303267F / <i>Auctioned Spectrum Relocation Fund</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Accomplishments/Planned Programs Subtotals</b>	60.167	-	-

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

Funding supports Spectrum relocation and sharing activities.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0303267F / Auctioned Spectrum Relocation Fund	<b>Project (Number/Name)</b> 658062 / Auctioned Spectrum Relocation Fund

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Auctioned Spectrum Relocation Fund</b>	
Support spectrum relocation activities	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0303267F / <i>Auctioned Spectrum Relocation Fund</i>	<b>Project (Number/Name)</b> 658062 / <i>Auctioned Spectrum Relocation Fund</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Auctioned Spectrum Relocation Fund</i></b>				
Support spectrum relocation activities	1	2023	4	2023

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303667F / <i>Citizen Broadband Radio System</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008
658064: <i>Citizen Broadband Radio System (CBRS)</i>	-	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.008
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program provides for transition activities necessary to ensure protection of incumbent spectrum dependent systems and military operations functioning within a given auctioned spectrum band. Activities focus on ecosystem validations, environmental assessments, and continued industry engagement to refine the indefinite sharing infrastructure.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.008	0.000	0.000	0.000	0.000
Total Adjustments	0.008	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.008	0.000	0.000	0.000	0.000

**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b>Title:</b> Protection of incumbent spectrum dependent activities	0.008	0.000	0.000
<b>Description:</b> Protection of incumbent spectrum dependent systems and military operations functioning within a given auctioned spectrum band.			
<b>FY 2024 Plans:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303667F / <i>Citizen Broadband Radio System</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
No Budget in FY24			
<b><i>FY 2025 Plans:</i></b> No Budget in FY25			
<b>Accomplishments/Planned Programs Subtotals</b>	0.008	0.000	0.000

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>			<b>Date: March 2024</b>					
<b>Appropriation/Budget Activity</b> 3600 / 5			<b>R-1 Program Element (Number/Name)</b> PE 0303667F / <i>Citizen Broadband Radio System</i>			<b>Project (Number/Name)</b> 658064 / <i>Citizen Broadband Radio System (CBRS)</i>		

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Protection of Incumbent Spectrum Activities</b>																												
	0	[REDACTED]																										

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0303667F / <i>Citizen Broadband Radio System</i>	<b>Project (Number/Name)</b> 658064 / <i>Citizen Broadband Radio System (CBRS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Protection of Incumbent Spectrum Activities</i>				
0	1	2023	4	2023

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303867F / <i>AMBIT - Post-Auctioned SRF</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	14.851	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
658066: <i>AMBIT - Pre-Auctioned SRF</i>	-	14.851	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This program pays for relocation or sharing costs related to relocating from and/or sharing a frequency that has been auctioned off to the commercial sector, that was previously used by DoD.

No FY25 funding is requested

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	14.851	0.000	0.000	0.000	0.000
Total Adjustments	14.851	0.000	0.000	0.000	0.000
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	14.851	0.000	0.000	0.000	0.000

**Change Summary Explanation**

Funding transferred by OMB after autions are complete.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>
<b>Title:</b> Relocation of electromagnetic spectrum	14.851	-	-

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303867F / <i>AMBIT - Post-Auctioned SRF</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Description:</b> This effort pays for relocation costs for previously reserved electromagnetic spectrum that has been auctioned off to the commercial sector.			
<b>Accomplishments/Planned Programs Subtotals</b>	14.851	-	-

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0303867F / <i>AMBIT - Post-Auctioned SRF</i>	<b>Project (Number/Name)</b> 658066 / <i>AMBIT - Pre-Auctioned SRF</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Spectrum Relocation Services</i></b>	
AMBIT	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0303867F / <i>AMBIT - Post-Auctioned SRF</i>	<b>Project (Number/Name)</b> 658066 / <i>AMBIT - Pre-Auctioned SRF</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Spectrum Relocation Services</i>				
AMBIT	1	2023	4	2023

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305155F / <i>Theater Nuclear Weapon Storage &amp; Security System</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	9.018	0.000	9.018	19.940	18.738	12.927	0.000	0.000	60.623
655708: <i>Nuclear Weapons Support</i>	-	0.000	0.000	9.018	0.000	9.018	19.940	18.738	12.927	0.000	0.000	60.623
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This program, BA 5, PE 0305155F, project 655708, Vault Modernization Program (VMP), is a new start.

**A. Mission Description and Budget Item Justification**

The Weapon Storage and Security System (WS3) supports mission by providing the capability to securely and safely store resources deployed in Europe. The Vault Modernization Program (VMP) will address the modernization of the vault components. In addition, the VMP will resolve sustainment issues caused by obsolescence.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025 Base</u>	<u>FY 2025 OCO</u>	<u>FY 2025 Total</u>
Previous President's Budget	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	9.018	0.000	9.018
Total Adjustments	0.000	0.000	9.018	0.000	9.018
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	9.018	0.000	9.018

**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
<b>Title:</b> Vault Modernization Program (VMP)	-	-	9.018	0.000	9.018
<b>FY 2025 Base Plans:</b>					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305155F / <i>Theater Nuclear Weapon Storage &amp; Security System</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Vault Modernization Program (VMP)					
<b><i>FY 2025 OCO Plans:</i></b> N/A					
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	9.018	0.000	9.018

**D. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**E. Acquisition Strategy**  
N/A



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0305155F / Theater Nuclear Weapon S torage & Security System	<b>Project (Number/Name)</b> 655708 / Nuclear Weapons Support

	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>Vault Modernization Program (VMP)</b>	
WSV VP	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0305155F / Theater Nuclear Weapon Storage & Security System	<b>Project (Number/Name)</b> 655708 / Nuclear Weapons Support

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Vault Modernization Program (VMP)</b>				
WSV VP	3	2025	4	2029

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	30.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
654236: <i>Engineering Analysis</i>	-	0.000	30.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Ultra Long-endurance Unmanned Reconnaissance Aircraft (ULTRA) is an Air Force-led technology and concept development effort to demonstrate, transition, and field an Unmanned Aerial System (UAS) that is capable of multiple-day duration flights while still being extremely affordable. ULTRA is a shift in UAS design paradigm by significantly leveraging commercial-off-the-shelf technologies to minimize expensive custom/proprietary items while at the same time simplifying maintenance and manpower costs. The payload integration for ULTRA maintains a modular and flexible architecture to allow for rapid integration of customer-driven payload options.

ULTRA was initiated by the Air Force Research Lab in 2018 in response to demand signals for long-endurance ISR that maintains an affordable edge. ULTRA leverages and builds off the successes and lessons learned of several AFRL, DoD, and other partner-funded development efforts from 2015-2021, including the Long Endurance Aerial Platform UAS which transitioned in 2019 and a number of unique payload developments and integrations. These prior developments guided and informed the initial development and demonstration of ULTRA. The initial ULTRA UAS was developed in 2018 and flight-tested in 2019. In 2020 ULTRA performed limited operational test and evaluation over a six-month period, the results of which informed payload and system requirements to meet current and future needs. Future operational test and evaluation in relevant operational environments is a critical next step in developing ULTRA as an affordable ultra-long endurance ISR platform that is responsive to current and future needs.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F.

This effort is not a new start. It is a flight demonstration of the ULTRA program, which was previously executed in FY23 and prior years under Program 0604555D8Z Operational Energy Prototyping, and under Section 219 authorities.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	30.000	30.002	0.000	30.002
Current President's Budget	0.000	30.000	0.000	0.000	0.000
Total Adjustments	0.000	0.000	-30.002	0.000	-30.002
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-30.002	0.000	-30.002

**Change Summary Explanation**

FY 2024 increased by \$30.000 million from previous President's Budget submission to establish an urgent demonstration capability in response to operational demand signals. Increase supports integration and preparation activities required to perform a flight demonstration in an operationally relevant environment.

FY 2025 decreased by \$30.002 million to support effort realignment into Program 0305206F Airborne Reconnaissance Systems, Project 674818 Imaging and Targeting Support.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Ultra Long-endurance Unmanned Reconnaissance Aircraft (ULTRA) Flight Demonstration	0.000	30.000	0.000
<b>Description:</b> This effort is not a new start. It is a flight demonstration of the ULTRA program, which was previously executed in FY23 and prior years under Program 0604555D8Z Operational Energy Prototyping, and under Section 219 authorities. This effort conducts integration and preparation work required to prepare the ULTRA platform for flight demonstration in operationally relevant environments in response to an urgent operational need. It leverages technologies and expertise from across all of the Air Force Research Laboratories, integrating and testing a variety of technologies.			
<b>FY 2024 Plans:</b>			
- Initiate and complete integration and test of commercial-off-the-shelf (COTS) turbo-charged engine to enable ULTRA altitude and airspeed for relevant geographically-constrained mission areas of interest			
- Initiate integration and testing of COTS engine control unit			
- Continue integration of ULTRA into the control system for common control of multiple unmanned aerial systems			
- Continue to conduct aircrew training to support extended operational testing and evaluation of ULTRA			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<ul style="list-style-type: none"> <li>- Continue development and refinement of training curriculum and documentation based on results from operational test and evaluation</li> <li>- Initiate early sustainment analyses to include long lead item evaluation of hardware and spares</li> <li>- Continue operational test and evaluation of ULTRA in operationally relevant environments</li> </ul> <p><b><i>FY 2025 Plans:</i></b> Effort realigned into Program 0305206F Airborne Reconnaissance Systems, Project 674818 Imaging and Targeting Support.</p> <p><b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2025 decreased by 30.000 million due to realignment into Program 0305206F Airborne Reconnaissance Systems, Project 674818 Imaging and Targeting Support.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	30.000	0.000

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

This effort will be awarded as a contract modification to an existing Phase III Small Business Innovation Research (SBIR) contract. This contract was awarded sole-source as required by SBIR policy. This approach was approved through AFRL/PZ.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 654236 / <i>Engineering Analysis</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>ULTRA Flight Test</b>	
Commercial-off-the-shelf (COTS) Engine Integration	██████████
COTS Engine Electronic Control Unit Integration	██████████████████
Control System Integration	██████████████████████████
Aircrew Training Development	██████████████████
Training curriculum and transition documentation	██████████████████████████████
Operational Test and Evaluation prep activities	██████████████████████████
Operational Assessment	██████████

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 654236 / <i>Engineering Analysis</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>ULTRA Flight Test</i></b>				
Commercial-off-the-shelf (COTS) Engine Integration	2	2024	3	2024
COTS Engine Electronic Control Unit Integration	3	2024	2	2025
Control System Integration	1	2024	2	2025
Aircrew Training Development	1	2024	4	2024
Training curriculum and transition documentation	1	2024	4	2025
Operational Test and Evaluation prep activities	1	2024	2	2025
Operational Assessment	3	2025	4	2025

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / <i>KC-46A Tanker Squadrons</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	60.734	140.395	124.662	93.620	0.000	93.620	58.744	53.345	36.584	0.000	0.000	568.084
651120: <i>Pegasus Capability Improvements</i>	0.000	53.697	54.860	58.509	0.000	58.509	46.382	53.345	36.584	0.000	0.000	303.377
655271: <i>KC-46 RDT&amp;E</i>	60.734	86.698	69.802	35.111	0.000	35.111	12.362	0.000	0.000	0.000	0.000	264.707

**Program MDAP/MAIS Code:** 387

**Note**

This program, BA 5, PE 0401221F, project 651120, Mobility Air Forces (MAF) Connectivity, is a new start.

In FY 2023, PE 0401221F, KC-46A Tanker Squadrons, Project 655KCY, was transferred to a new PE 0605164F, Air Refueling Capability Modernization (ARCM), Project 645164, Continued Tanker Recapitalization RDT&E due to Congressional request.

**A. Mission Description and Budget Item Justification**

Replacement of the legacy tanker fleet will take place in several stages. The initial tanker replacement increment of KC-46As will replace roughly a third of the current capability. Future programs will ultimately recapitalize the entire tanker fleet over a period of more than 30 years. The Air Force completed an Analysis of Alternatives (AoA) in Apr 2006 to determine the most appropriate strategy to recapitalize the aging fleet of aerial refueling aircraft. Based on this analysis, the Air Force concluded a strategy of full and open competition to select a commercial derivative replacement tanker aircraft would result in a best value tanker contract. To initiate the first phase of the tanker replacement, the KC-46A program released a final Request for Proposal (RFP) on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46A program held a Milestone B (MS B) Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter Engineering and Manufacturing Development (EMD) from the Undersecretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)) on 24 Feb 2011, and awarded the KC-46A EMD contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46A aircraft. The program is procuring four RDT&E aircraft for integration and demonstration of capability which will ultimately be operationally fielded. During production, the program plans to procure 175 aircraft throughout 13 lots. The KC-46A program held a MS C DAB on 12 Aug 2016 and received approval to enter Low Rate Initial Production (LRIP). The program awarded LRIP Lots 1 and 2 on 18 Aug 2016, LRIP Lot 3 on 27 Jan 2017, LRIP Lot 4 on 10 Sep 2018, and LRIP Lot 5 on 27 Sep 2019. Lot 6 awarded on 12 Jan 2021, Lot 7 awarded on 20 Jan 2021, Lot 8 awarded 31 Aug 2022, Lot 9 awarded 27 Jan 2023, and Lot 10 was converted to LRIP on 17 Nov 2023 and was put on contract 28 Nov 2023 bringing the total number of aircraft on production contract to 139. Initial sustainment effort is provided via Interim Contractor Support (ICS) as the program is transitioning to organic sustainment. KC-46A funding also supports Training Systems, Support Equipment, Operational Site Activation, Depot Stand-Up, Alternate Mission Equipment (AME), Direct Mission Support, Program Support Costs (PSC) activities, Other Government Costs (OGC), various studies and analyses, future tanker planning activities, long lead items, and potential Diminishing Manufacturing Sources (DMS) and obsolescence planning activities.

The KC-46A has been validated at the Joint Requirements Oversight Council (JROC) multiple times from Nov 2004 to May 2018, and is a critical force extender in our Joint Warfighting Concept. In addition to its air refueling capability, the KC-46 is planned to be a key joint and coalition communications node. The KC-46A will

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / <i>KC-46A Tanker Squadrons</i>
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provide the capability to fuel joint and coalition receivers via a boom or drogue system on every mission and will also augment the airlift fleet with cargo, passenger, and aeromedical evacuation capabilities. The KC-46A will operate in day, night, and adverse weather conditions to enable deployment, employment, sustainment, and redeployment of U.S. joint, allied, and coalition forces. The KC-46A will have communication, navigation, and surveillance equipment for world-wide operations; the capability to perform missions in chemical and biological environments; the ability to operate in up to medium threat environments with self-defense/protection (both active and passive) capabilities; and the necessary battle space awareness to mitigate survivability threats. The first DD250 was signed on 10 Jan 2019. The Air Force delivered the first KC-46A to McConnell Air Force Base on 25 Jan 2019. As of 12 January 2024, 80 aircraft have been delivered to the Air Force via DD250.

Mobility Air Forces (MAF) Connectivity is a requirement for Line-of-Sight (LOS) and Beyond-Line-of-Sight (BLOS) connectivity capability on the KC-46A. This will enable maximum MAF connectivity and real-time secure command and control for aircrew situational awareness.

The Aircrew Training System (ATS) and Maintenance Training System (MTS) are being procured using KC-46A funding. The ATS contract was awarded on 1 May 2013 to Flight Safety Services Corporation, now known as Flight Safety International - Defense. The ATS contract will provide Aircrew Training Devices (ATDs), to include Weapon System Trainers (WSTs), Boom Operator Trainers (BOTs), Fuselage Trainers (FuTs), Part-Task Trainers (PTTs), and emerging technologies to meet validated Air Mobility Command (AMC) aircrew training requirements at each Main Operating Base (MOB) and the Formal Training Unit (FTU). The ATS contract will also support Distributed Mission Operations (DMO), provide aircrew instruction, develop courseware, provide logistics support, acquire a technical data package to support future competition efforts, and manage training device/courseware concurrency with the aircraft. The first eight ATS production options were exercised on 19 Aug 2015, 31 May 2017, 30 Apr 2018, 31 Mar 2019, 27 Feb 2020, 4 Mar 2021, 24 Feb 2022, and 15 Nov 2022. Option year nine was put on Un-definitized Contract Action (UCA) 10 Oct 2023. Option nine is scheduled to definitize in March 2024.

The MTS contract was awarded 6 Jul 2016 to The Boeing Company. The MTS acquisition focuses on designing, developing, testing, producing, and fielding an optimized training system for KC-46A maintainers by integrating various forms of training media and Maintenance Training Devices (MTDs) into a "blended" solution. This blended solution includes the appropriate mix of hardware and software, "high-fidelity" Augmented Hardware Training Devices (AHTDs), Part Task Trainers (PTTs), Interactive Multimedia Instruction (IMI), and emerging technologies to meet validated AMC maintenance training requirements.

This requirement supports performance of a full financial audit as required by U.S.C. Title 10, Subtitle A, Part I, Chapter 9A, Sec 240-D, Financial Improvement and Audit Remediation (FIAR) Plan.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY 2023 \$1.292 million was expended for civilian pay expenses in this program element, and in FY 2024 \$3.268 million is forecast for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / <i>KC-46A Tanker Squadrons</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	177.529	124.662	67.702	0.000	67.702
Current President's Budget	140.395	124.662	93.620	0.000	93.620
Total Adjustments	-37.134	0.000	25.918	0.000	25.918
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-37.134	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	25.918	0.000	25.918

**Change Summary Explanation**

FY 2023 funding request was reduced by \$37.134 million to account for the availability of prior year execution balances.

FY 2025 funding request was increased by \$25.918 million for PACS development and KC-46A aircrew training systems development.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 651120 / Pegasus Capability Improvements
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
651120: <i>Pegasus Capability Improvements</i>	0.000	53.697	54.860	58.509	0.000	58.509	46.382	53.345	36.584	0.000	0.000	303.377
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

This program, BA 5, PE 0401221F, project 651120, Mobility Air Forces (MAF) Connectivity, is a new start.

**A. Mission Description and Budget Item Justification**

The KC-46A will provide the capability to fuel joint and coalition receivers via a boom or drogue system on every mission and will also augment the airlift fleet with cargo, passenger, and aeromedical evacuation capabilities. The KC-46A will operate in day/night and adverse weather conditions to enable deployment, employment, sustainment, and redeployment of U.S. joint, allied, and coalition forces. The KC-46A will have communication, navigation, and surveillance equipment for worldwide operations; the capability to perform missions in chemical and biological environments; the ability to operate in up to medium threat environments with self-defense/ protection (both active and passive) capabilities; and the necessary battlespace awareness to mitigate survivability threats.

The dynamics and mission urgency of the post-production (post-DD-250) environment require the program to maintain a flexible and responsive posture to support a broad range of mission support needs. The KC-46A will continue to identify, design, develop, integrate, verify, certify, produce, install, field, and sustain a comprehensive range of non-recurring and recurring post-production, air vehicle enhancements and field support needs. These needs may originate from programmed Mobility Air Forces (MAF) requirements, Combatant Commander Joint or Urgent Operational Needs (JUON/UON), non-programmed Federal Aviation Administration (FAA) directives, requirements identified and supported by HHQ Enterprise Capability Collaboration Teams (i.e., High Value Airborne Asset [HVAA], Air Superiority 2030, and Multi-Domain Command and Control [MDC2]), or correction of field deficiencies.

The KC-46A will continue to develop, field, and sustain warfighter capabilities to meet evolving threats and mission support requirements through Block or discrete modification or modernization programs depending on mission urgency, available funding, and programmatic and technical risks. Post-production requirements can include but will not be limited to avionics and structural systems/ architecture and subsystem updates, general mission equipment updates and procurement, general sustainment support, studies and analyses, future Tanker requirements simulation and training, and correction of field deficiencies.

Mobility Air Forces (MAF) Connectivity is a requirement for Line-of-Sight (LOS) and Beyond-Line-of-Sight (BLOS) connectivity capability on the KC-46A. This will enable maximum MAF connectivity and real-time secure command and control for aircrew situational awareness.

Project 651120 funding will also support Program Support Costs (PSC) activities, test support, mission planning capability development and various studies and analyses.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F,

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 651120 / Pegasus Capability Improvements		
and 0606398F. In FY 2023 \$1.292 million was expended for civilian pay expenses in this program element, and in FY 2024 \$3.268 million is forecast for civilian pay expenses in this program element.				
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Title:</b> KC-46A Block 1 Pegasus Advanced Communications Suite (PACS)</p> <p><b>Description:</b> The KC-46A Block 1 Pegasus Advanced Communications Suite (PACS) program will satisfy Department of Defense (DoD), National Security Agency (NSA), Department of Transportation (DoT), and USAF mandates by upgrading legacy Tactical Data Link 16, Beyond Line-of-Sight (BLOS) Ultra High Frequency (UHF) Line-of-Sight (LOS) capabilities with next-generation Link 16 terminals and UHF secure, global, BLOS and anti-jam LOS satellite voice communications capabilities for the KC-46A weapon system. PACS enables compatibility and interoperability with current and planned future joint and allied forces while simultaneously increasing the survivability of secure global voice and data communications capabilities between Mobility Air Force (MAF) C2 agencies and MAF aircraft operating worldwide in or near contested environments.</p> <p><b>FY 2024 Plans:</b> Continue Block 1 PACS EMD program and associated contracting efforts.</p> <p><b>FY 2025 Plans:</b> Continuation of Block 1 PACS EMD program and associated contracting efforts.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to the ramp up of support and upgrade activities, to include but not limited to test and test support.</p>		52.405	49.508	55.203
<p><b>Title:</b> Mobility Air Forces (MAF) Connectivity</p> <p><b>Description:</b> Mobility Air Forces (MAF) Connectivity Efforts: Aircraft Connectivity is a requirement for Line-of-Sight (LOS) and Beyond-Line-of-Sight (BLOS) connectivity capability on the KC-46A. This will enable maximum MAF connectivity and real-time secure command and control for aircrew situational awareness.</p> <p><b>FY 2024 Plans:</b> N/A</p> <p><b>FY 2025 Plans:</b> Initial planning of MAF Connectivity capability for the KC-46A to include but not limited to real-time secure command and control for aircrew situational awareness.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increase due to ramp up of initial MAF Connectivity program office efforts.</p>		-	0.000	1.000
<b>Title:</b> Support		1.292	5.352	2.306

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 651120 / Pegasus Capability Improvements

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p><b>Description:</b> Studies and analyses to support planning activities for future initiatives for upgrades, future tanker efforts, test support, test execution and other Program Support Costs.</p> <p><b>FY 2024 Plans:</b> Initiate testing and test support, modernization programs, studies, analyses and planning activities to support future upgrade initiatives.</p> <p><b>FY 2025 Plans:</b> Continuation of Studies and analyses to support planning activities for future initiatives for upgrades, future tanker efforts, test support, test execution and other Program Support Costs.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decrease due to reduced planning activities for future tanker efforts.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	53.697	54.860	58.509

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF 05 41221F/ KC046A: KC-46A Tanker	0.467	0.000	24.954	0.000	24.954	19.566	55.653	92.243	87.543	5,615.672	5,896.098

**Remarks**

**D. Acquisition Strategy**

The KC-46A Post-Production Change Management (PPCM) construct is comprised of processes and tools, specifically tailored to a broad spectrum of post-production requirements to support the KC-46A enterprise (e.g. weapon system, sustainability, training devices). PPCM is designed to leverage competition when applicable and emphasize configuration management and discrete cost accounting methodologies. KC-46A PPCM oversight will promote competition throughout the life cycle of the KC-46A fleet. All KC-46A post-production requirements and associated acquisition strategies will be carefully managed, reviewed, and approved at the appropriate levels by the KC-46A Division and/or Tanker Directorate senior functional leaders. PPCM requirements will employ multiple contract-types, tailored to the requirement and documented in discrete Acquisition Strategy Panel briefings, to minimize cost, technical, and schedule execution risks and ensure on-time deliverables. In addition, all ACAT-level programs, deriving from the PPCM process, will follow Department of Defense (DoD) Directive 5000.01 and DoD Instruction 5000.02 guidelines and directives, as applicable, to ensure management controls--commensurate with the scope and cost of the supported requirement.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 651120 / Pegasus Capability Improvements
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KC-46A Capability Upgrades (to include modification and modernization)	SS/CPFF	The Boeing Company : Seattle, WA	0.000	52.385	Mar 2023	48.933	Mar 2024	55.628	Mar 2025	-		55.628	Continuing	Continuing	-
<b>Subtotal</b>			0.000	52.385		48.933		55.628		-		55.628	Continuing	Continuing	N/A

**Remarks**  
Target Value is TBD because PACS Block 2 has not awarded

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority for Civilian Pay	RO	KC-46 Program Office : Dayton, W-P AFB, OH	0.000	1.292	Oct 2022	3.268	Oct 2023	2.306	Oct 2024	-		2.306	Continuing	Continuing	-
Direct Mission Support	Various	KC-46 Program Office : Dayton, W-P AFB, OH	0.000	0.020	Mar 2023	2.084	Mar 2024	0.000	Feb 2025	-		0.000	Continuing	Continuing	-
<b>Subtotal</b>			0.000	1.312		5.352		2.306		-		2.306	Continuing	Continuing	N/A

**Remarks**  
Target value is blank for Direct Mission Support since there are various contracts. Target Value is blank for Direct Cite Authority for Civilian Pay since funds are provided to the center to fund manpower.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KC-46A testing and planning support of development & operational test, FAA & military	Various	Various : TBD	0.000	0.000	Jan 2024	0.575	Jan 2024	0.575	Jan 2025	0.000		0.575	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 651120 / Pegasus Capability Improvements
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Test and Evaluation (\$ in Millions)				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
certification, and aircraft qualification activities															
KC-46A Long Term Test Aircraft Maintenance Support	SS/CPAF	The Boeing Company : Edwards AFB, CA	0.000	0.000	Sep 2023	0.000	Sep 2024	0.000	Sep 2025	-		0.000	Continuing	Continuing	-
<b>Subtotal</b>			0.000	0.000		0.575		0.575		0.000		0.575	Continuing	Continuing	N/A

**Remarks**  
LTTAMS is funded out of ACAT 1 Baseline.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	53.697	54.860	58.509	0.000	58.509	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Air Force</b>			<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / <i>KC-46A Tanker Squadrons</i>	<b>Project (Number/Name)</b> 651120 / <i>Pegasus Capability Improvements</i>	

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Pegasus Capability Improvements</i></b>	
KC-46A Block I PACS	
Long Term Test Aircraft Maintenance Support	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / <i>KC-46A Tanker Squadrons</i>	<b>Project (Number/Name)</b> 651120 / <i>Pegasus Capability Improvements</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Pegasus Capability Improvements</i></b>				
KC-46A Block I PACS	2	2023	2	2028
Long Term Test Aircraft Maintenance Support	4	2023	4	2025

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons				<b>Project (Number/Name)</b> 655271 / KC-46 RDT&E			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
655271: KC-46 RDT&E	60.734	86.698	69.802	35.111	0.000	35.111	12.362	0.000	0.000	0.000	0.000	264.707
Quantity of RDT&E Articles	4	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Replacement of the legacy tanker fleet will take place in several stages. The initial tanker replacement increment of KC-46As will replace roughly a third of the current capability. Future programs will ultimately recapitalize the entire tanker fleet over a period of more than 30 years. The Air Force completed an Analysis of Alternatives (AoA) in Apr 2006 to determine the most appropriate strategy to recapitalize the aging fleet of aerial refueling aircraft. Based on this analysis, the Air Force concluded a strategy of full and open competition to select a commercial derivative replacement tanker aircraft would result in a best value tanker contract. To initiate the first phase of the tanker replacement, the KC-46A program released a final Request for Proposal (RFP) on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46A program held a Milestone B (MS B) Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter Engineering and Manufacturing Development (EMD) from the Undersecretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)) on 24 Feb 2011, and awarded the KC-46A EMD contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46 aircraft. The program is procuring four RDT&E aircraft for integration and demonstration of capability which will ultimately be operationally fielded. During production, the program plans to procure 175 aircraft throughout 13 lots. The KC-46A program held a MS C DAB on 12 Aug 2016 and received approval to enter Low Rate Initial Production (LRIP). The program awarded LRIP Lots 1 and 2 on 18 Aug 2016, LRIP Lot 3 on 27 Jan 2017, LRIP Lot 4 on 10 Sep 2018, and LRIP Lot 5 on 27 Sep 2019. Lot 6 awarded on 12 Jan 2021, Lot 7 awarded on 20 Jan 2021, Lot 8 awarded 31 Aug 2022, Lot 9 awarded 27 Jan 2023, and Lot 10 was converted to LRIP on 17 Nov 2023 and was put on contract 28 Nov 2023 bringing the total number of aircraft on production contract to 139. Initial sustainment effort is provided via Interim Contractor Support (ICS) as the program is transitioning to organic sustainment. KC-46A funding also supports Training Systems, Support Equipment, Operational Site Activation, Depot Stand-Up, Alternate Mission Equipment (AME), Direct Mission Support, Program Support Costs (PSC) activities, Other Government Costs (OGC), various studies and analyses, future tanker planning activities, long lead items, and potential Diminishing Manufacturing Sources (DMS) and obsolescence planning activities.

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The Aircrew Training System (ATS) and Maintenance Training System (MTS) are being procured using KC-46A funding. The ATS contract was awarded on 1 May 2013 to Flight Safety Services Corporation, now known as Flight Safety International - Defense. The ATS contract will provide Aircrew Training Devices (ATDs), to include Weapon System Trainers (WSTs), Boom Operator Trainers (BOTs), Fuselage Trainers (FuTs), Part-Task Trainers (PTTs), and emerging technologies to meet validated Air Mobility Command (AMC) aircrew training requirements at each Main Operating Base (MOB) and the Formal Training Unit (FTU). The ATS contract will also support

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 655271 / KC-46 RDT&E
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Distributed Mission Operations (DMO), provide aircrew instruction, develop courseware, provide logistics support, acquire a technical data package to support future competition efforts, and manage training device/courseware concurrency with the aircraft. The first eight ATS production options were exercised on 19 Aug 2015, 31 May 2017, 30 Apr 2018, 31 Mar 2019, 27 Feb 2020, 4 Mar 2021, 24 Feb 2022, and 15 Nov 2022. Option nine was put on Un-definitized Contract Action (UCA) on 10 Oct 2023. Definitization is planned for March 2024.

The MTS contract was awarded 6 Jul 2016 to The Boeing Company. The MTS acquisition focuses on designing, developing, testing, producing, and fielding an optimized training system for KC-46A maintainers by integrating various forms of training media and Maintenance Training Devices (MTDs) into a "blended" solution. This blended solution includes the appropriate mix of hardware and software, "high-fidelity" Augmented Hardware Training Devices (AHTDs), Part Task Trainers (PTTs), Interactive Multimedia Instruction (IMI), and emerging technologies to meet validated AMC maintenance training requirements.

This requirement supports performance of a full financial audit as required by U.S.C. Title 10, Subtitle A, Part I, Chapter 9A, Sec 240-D, Financial Improvement and Audit Remediation (FIAR) Plan.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY 2023 \$2.646 million was expended for civilian pay expenses in this program element. In FY 2024 \$0.000 million was expended for civilian pay expenses in this program element.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<p><b>Title:</b> KC-46A Aircraft Product Development</p> <p><b>Description:</b> EMD activities will be conducted to include the following types of activities: develop a commercial 767-2C aircraft upon which the KC-46 is based; develop the KC-46A military capability and integrate it into the aircraft; build four EMD aircraft; procure live fire assets; procure required Government Furnished Equipment (GFE); procure simulator and maintenance data; develop technical manuals and Type 1 training; and conduct development and operational testing.</p> <p><b>FY 2024 Plans:</b> Continuation of product refinement, studies, ground, and flight testing in support of the KC-46A weapon system to include receiver certifications, simulator data collection, and completion of IOT&amp;E events/reporting. Incrementally fund boom telescope actuator redesign (BTAR) Engineering Change Proposal (ECP) efforts (ongoing since 2020) and support other government costs associated with solution for Remote Vision System (RVS). Study, analyze, test and update documentation in order to certify and increase KC-46A capability for aerial refueling (AR) onload. Incrementally fund work for Take Off and Landing Data (TOLD) to address deficiencies and improve capability.</p> <p><b>FY 2025 Plans:</b> Product refinement, studies, ground, and flight testing in support of the KC-46A weapon system to include but not limited to Remote Vision System (RVS), receiver certifications, simulator data collection, and completion of IOT&amp;E events/reporting. Incrementally fund Take Off and Landing Data (TOLD) and boom telescope actuator redesign (BTAR) Engineering Change</p>	46.852	45.652	12.800

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 655271 / KC-46 RDT&E		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Proposal (ECP) efforts. Study, analyze, test and update documentation to certify and increase KC-46A capability for aerial refueling (AR) onload.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to schedule delays for multiple efforts.</p>				
<p><b>Title:</b> KC-46A Trainer Product Development - Aircrew Training System (ATS)</p> <p><b>Description:</b> Trainer development activities will be conducted to include the following types of activities: development and procurements of ATDs, courseware, and associated support equipment.</p> <p><b>FY 2024 Plans:</b> Continue development of eRVS, BTAR, NVG, LAIRCM, RVS 2.0, and TOLD upgrades</p> <p><b>FY 2025 Plans:</b> Continuation of Trainer development activities will be conducted to include the following types of activities: development and procurements of ATDs, courseware, and associated support equipment, eRVS, BTAR, NVG, LAIRCM, RVS 2.0, and TOLD Upgrade Development.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to the ramp up of support and upgrade activities, to include but not limited to test, test support, software and hardware development.</p>		2.979	0.947	7.785
<p><b>Title:</b> KC-46A Test &amp; Evaluation</p> <p><b>Description:</b> Test &amp; Evaluation (T&amp;E) activities will be conducted to include the following types of activities: Development Test &amp; Evaluation, Operational Test &amp; Evaluation, Tanker Qualification, Receiver Certifications, Live Fire Test &amp; Evaluation (LFT&amp;E), Federal Aviation Administration (FAA) support, and other test planning and organizational support.</p> <p><b>FY 2024 Plans:</b> Continuation of Test &amp; Evaluation (T&amp;E) activities will be conducted to include the following types of activities: Development Test &amp; Evaluation, Operational Test &amp; Evaluation, Tanker Qualification, Receiver Certifications, Live Fire Test &amp; Evaluation (LFT&amp;E), Federal Aviation Administration (FAA) support, and other test planning and organizational support.</p> <p><b>FY 2025 Plans:</b> Continuation of Test &amp; Evaluation (T&amp;E) activities to include but not limited to Development Test &amp; Evaluation, Operational Test &amp; Evaluation, Tanker Qualification, Receiver Certifications, Live Fire Test &amp; Evaluation (LFT&amp;E), Federal Aviation Administration (FAA) support, and other test planning and organizational support.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b></p>		23.703	21.599	13.006

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 655271 / KC-46 RDT&E

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Funding decreased due to reduced efforts and schedule slips.			
<b>Title:</b> KC-46A Support	13.164	1.604	1.520
<b>Description:</b> Development, integration, and demonstration of the KC-46A mission planning capability. In addition, studies and analysis to support planning activities for future efficiency initiatives, business case analyses, and miscellaneous Program Office support and planning. Also includes requirements such as travel, office supplies, training courses, and service contracts.			
<b>FY 2024 Plans:</b> Continued Program Office Support and Planning.			
<b>FY 2025 Plans:</b> Continuation of Development, integration, and demonstration of the KC-46A mission planning capability. Studies and analysis to support planning activities for future efficiency initiatives, business case analyses, and future tanker planning.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to air refueling airplane simulator qualification (ARASQ) support schedule slip.			
<b>Accomplishments/Planned Programs Subtotals</b>	86.698	69.802	35.111

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 02 Line Item KC046A: KC-46A Tanker	2,458.717	2,882.590	2,854.748	-	2,854.748	2,833.054	2,429.705	0.000	-	0.000	13,458.814
• APAF 06 Line Item 000999: Initial Spares	100.938	195.184	216.754	-	216.754	252.725	452.761	0.000	-	0.000	1,218.362

**Remarks**

**D. Acquisition Strategy**

The KC-46A Program acquisition strategy is to procure an existing commercial, Federal Aviation Administration (FAA) certified aircraft modified to meet USAF requirements. The KC-46A program released a final RFP on 24 Feb 2010, and entered source selection on 9 Jul 2010. The KC-46A program held a Milestone B (MS B) Defense Acquisition Board (DAB) on 23 Feb 2011, received approval to enter EMD from the Undersecretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L)) on 24 Feb 2011, and awarded the KC-46A contract to Boeing on 24 Feb 2011 to develop and procure 179 KC-46A aircraft. The KC-46A contract procurement was conducted via a full and open competition per Federal Acquisition Regulation (FAR) Part 15, and resulted in a FY 2011 Engineering and Manufacturing Development (EMD) Fixed Price Incentive Firm (FPIF) contract. The EMD phase is developing, building, and testing four KC-46A aircraft, and will qualify the KC-46A as a tanker and certify pairings with receiver aircraft.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / <i>KC-46A Tanker Squadrons</i>	<b>Project (Number/Name)</b> 655271 / <i>KC-46 RDT&amp;E</i>
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The MS B acquisition strategy planned for two LRIP lots followed by 11 Full-Rate Production (FRP) lots for a total aircraft procurement of 175 production aircraft. An update to the acquisition strategy occurred in support of MS C that increased LRIP from two to four lots, with the total aircraft buy remaining at 175 production aircraft. A Dec 2017 USD(AT&L) Acquisition Decision Memorandum expanded LRIP to include Lot 5. Another Program Deviation Report was submitted on June 8, 2020, to declare a breach to the Full Rate Production Decision. A new APB dated October 19, 2020 was approved, and a new ADM dated October 20, 2020 re-designated Lots 6 through 9 as LRIP with the total aircraft buy remaining at 175 Production aircraft (+4 EMD aircraft for a grand total of 179 aircraft).

LRIP now consists of two Firm Fixed Price (FFP) and seven FFP Not to Exceed (NTE) options (LRIP-1 Qty 7, LRIP-2 Qty 12, LRIP-3 Qty 15, LRIP-4 Qty 18, LRIP-5 Qty 15, LRIP-6 Qty 12, LRIP-7 Qty 15, LRIP-8 Qty 15, LRIP-9 Qty 15). This will be followed by four (Lots 10-13) FFP production options [via NTE values + Economic Price Adjustment (EPA)]. LRIP Lots 1 and 2 were awarded Aug 2016, LRIP Lot 3 was awarded Jan 2017, LRIP Lot 4 was awarded Sep 2018, LRIP Lot 5 was awarded Sep 2019, and LRIP Lots 6 and 7 were awarded Jan 2021. LRIP Lot 8 was awarded August 2022 and LRIP Lot 9 was awarded January 2023. Lot 10 was converted to LRIP on 17 Nov 2023 and was put on contract 28 Nov 2023.

The Aircrew Training System (ATS) acquisition strategy is to provide Aircrew Training Devices (ATDs), and associated support structure, to each Main Operating Base (MOB) and the Flying Training Unit (FTU). The ATS EMD FPIF contract with production options was conducted via a full and open competition per FAR Part 15, and awarded to FlightSafety Services Corporation in FY 2013. The ATS EMD phase will develop and procure ATDs; and will be supported with courseware, Training System Support Center, the technical data package, and support equipment to ensure system availability and concurrency with the aircraft. The first eight ATS production options were exercised on 19 Aug 2015, 31 May 2017, 30 Apr 2018, 31 Mar 2019, 2 Sep 2020, 4 Mar 2021, 23 May 2022, and 2 February 2023. Lot 9 of 10 total lots is planned to be awarded in January 2024.

The Maintenance Training System (MTS) acquisition strategy is to acquire Maintenance Training Devices (MTDs), and associated support structure, for two AMC active duty Regional Maintenance Training Facilities. The MTS EMD FFP contract with production options was conducted via a full and open competition per FAR Part 15, and awarded to The Boeing Company in FY 2016. The MTS EMD phase will develop and procure MTDs; and will be supported with courseware, Training System Support Center, the technical data package, and support equipment to ensure system availability and concurrency with the aircraft.

The KC-46A Program is responsible for the development, testing, and production of a drogue-equipped, wing-mounted refueling system to meet Capability Production Document (CPD) thresholds and objectives for simultaneous refueling of two probe-equipped receivers. The system can be installed or removed from the KC-46A as mission needs dictate.

The long-term support concept for the KC-4A is organic two-level maintenance (2LM): organization level (O-level) and depot level (D-level). For the purposes of this program, all maintenance other than O-level shall be referred to as D-level. The product support strategy will initially employ Interim Contractor Support (ICS) before transitioning to a 100% organically-managed maintenance and supply support capability. Performance Based Logistics (PBL) solutions will be evaluated during EMD as viable approaches to facilitate the transition.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 655271 / KC-46 RDT&E
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<b>Product Development (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
KC-46A aircraft non-recurring development, integration, and testing; 4 RDT&E tanker aircraft; and support	SS/FPIF	The Boeing Company : Seattle, WA	10.757	44.957	Mar 2023	33.487	Dec 2023	9.816	Oct 2024	-		9.816	17.064	116.081	-
KC-46A Take Off and Landing Data (TOLD) Development Capability	SS/TBD	The Boeing Company : Seattle, WA	0.000	0.000	Dec 2023	12.365	Jan 2024	2.984	Jan 2025	-		2.984	36.576	51.925	-
KC-46A Aircrew Training System	SS/FPIF	Flight Safety Services Co : Centennial, CO	0.000	2.979	Feb 2024	0.947	Dec 2024	7.785	Dec 2025	-		7.785	2.714	14.425	-
<b>Subtotal</b>			10.757	47.936		46.799		20.585		-		20.585	56.354	182.431	N/A

**Remarks**  
 The KC-46A EMD contract was awarded 24 Feb 2011. The total cost represents the current Program Office Estimate (POE) which accounts for the ceiling price of the contract plus the financial and schedule risk of potential design changes for the KC-46A aircraft.

Target value is blank for the KC-46A aircraft category since the contract is fully funded. Target value is TBD for TOLD since it has not awarded yet. Target value is blank for the KC-46A Aircrew Training System category since the contract is fully funded.

FINANCIAL PERFORMANCE: The KC-46A is evaluated against traditional Research and Development (R&D) program expenditure benchmarks. Unlike many traditional R&D programs, the KC-46A EMD contract is a Fixed Price Incentive Fee (FPIF) contract with progress payments. Twenty percent (20%) of incurred costs are withheld until the end of the contract, when they are liquidated. Mandatory funding obligations and progress payment withholds will cause the program to lag traditional expenditure benchmarks, painting an inaccurate portrait of overall program health.

<b>Support (\$ in Millions)</b>				<b>FY 2023</b>		<b>FY 2024</b>		<b>FY 2025 Base</b>		<b>FY 2025 OCO</b>		<b>FY 2025 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
KC-46A studies and analysis associated with the development, integration, and demonstration of KC-46 capability & future planning	C/CPAF	Various : Various	1.851	13.664	Jun 2023	1.404	Apr 2024	1.520	Apr 2025	-		1.520	0.000	18.439	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / KC-46A Tanker Squadrons	<b>Project (Number/Name)</b> 655271 / KC-46 RDT&E
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<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority for Civilian Pay	RO	KC-46 Program Office : Dayton, W-PAFB	0.000	2.646	Oct 2022	0.000	Oct 2023	0.000	Oct 2024	-		0.000	0.000	2.646	-
<b>Subtotal</b>			1.851	16.310		1.404		1.520		-		1.520	0.000	21.085	N/A

**Remarks**  
These contracts are on an as needed basis, with various contract types and performing activities. Target value is blank since there are various contracts.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KC-46A testing and planning support of development & operational test, FAA & military certification, and aircraft qualification activities	MIPR	418th FLTS : Edwards AFB, CA	30.370	12.772	Dec 2022	8.933	Dec 2023	2.209	Dec 2024	-		2.209	8.327	62.611	-
KC-46A Long Term Test Aircraft Maintenance Support	SS/CPAF	The Boeing Company : Edwards AFB, CA	17.756	9.680	Sep 2023	12.666	Sep 2024	10.797	Sep 2025	-		10.797	0.000	50.899	46.636
<b>Subtotal</b>			48.126	22.452		21.599		13.006		-		13.006	8.327	113.510	N/A

**Remarks**  
Integrated testing and planning activities are performed by government organizations, with some contractor technical subject matter experts and teaming with the prime contractor. Target value is blank for the KC-46A testing and planning support of development & operational test because this is funding provided to government agencies.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	60.734	86.698	69.802	35.111	-	35.111	64.681	317.026	N/A

**Remarks**



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401221F / <i>KC-46A Tanker Squadrons</i>	<b>Project (Number/Name)</b> 655271 / <i>KC-46 RDT&amp;E</i>
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>KC-46A</b>				
Initial Operational Test & Evaluation (for WARPs)	1	2024	2	2024
Government Testing for Correction of Deficiencies	1	2023	1	2026
Boom Telescope Actuator Redesign ECP	4	2023	2	2025
Aircrew Training System Development & Updates	1	2023	4	2025
Take Off and Landing Data (TOLD)	3	2023	2	2027
Long Term Test Aircraft Maintenance Support (LTTAMS)	4	2023	4	2024

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / VC-25B
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	3,625.872	79.623	490.701	433.943	0.000	433.943	400.905	441.009	59.604	34.803	0.000	5,566.460
655250: VC-25B	3,625.872	79.623	490.701	433.943	0.000	433.943	400.905	441.009	59.604	34.803	0.000	5,566.460
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Program MDAP/MAIS Code:** 425

**A. Mission Description and Budget Item Justification**

The VC-25B Program, formerly known as the Presidential Aircraft Recapitalization (PAR) Program, replaces the Presidential VC-25A fleet which faces capability gaps, rising maintenance costs, and parts obsolescence as it ages beyond 30 years. The VC-25B Program delivers two new aircraft to meet the requirements for the President to execute the duties of Head of State, Chief Executive, and Commander-in-Chief. The VC-25B Program uniquely modifies two Boeing 747-8 commercial aircraft to provide the President, staff, and guests with safe and reliable air transportation with the equivalent level of communications capability and security available in the White House. The modifications to the 747-8 aircraft include an electrical power upgrade with dual Auxiliary Power Units that are usable in flight, a mission communication system, a work and rest environment, an executive interior, military avionics, a self-defense system, independent enplaning and deplaning, and independent baggage loading. No significant changes to the existing VC-25A Concept of Operations or Concept of Employment are expected. This budget provides for Post-Milestone B (MS B) design, integration, modification, product support and test of two aircraft to make them Presidential mission ready.

Funds may be used to lease test equipment, as well as address emerging and short-notice Diminishing Manufacturing Sources and Material Shortage (DMSMS) issues.

This requirement supports performance of a full financial audit as required by title 10 U.S.C. Chapter 9A, Sec 240-D.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, and 0606398F. In FY 2023 \$4.514 million was expended for civilian pay expenses in this program element, and in FY 2024 \$6.042 million is forecast for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / VC-25B
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	147.932	490.701	294.829	0.000	294.829
Current President's Budget	79.623	490.701	433.943	0.000	433.943
Total Adjustments	-68.309	0.000	139.114	0.000	139.114
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	-63.724	0.000			
• SBIR/STTR Transfer	-4.585	0.000			
• Other Adjustments	0.000	0.000	139.114	0.000	139.114

**Change Summary Explanation**

FY 2023 funding was reduced by a total of \$68.309 million which included \$63.724 million in reprogramming due to program delays and \$4.585 million for Small Business Innovative Research.

FY 2025 funding increased by \$139.114 million as a part of rephasing program funds due to program delays.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> VC-25B Engineering and Manufacturing Development (EMD), Product Support, & Program Support Costs (PSC)	76.702	484.585	424.558
<b>Description:</b> EMD includes activities such as management, integration, modification, contractor test, certification, and product support to deliver two Presidential mission-ready VC-25B Aircraft utilizing modeling and simulation, system integration labs (SILs), and mockups to assist in design/modification.			
<b>FY 2024 Plans:</b> Funds in FY 2024 will continue EMD activities, aircraft modification, transition to Developmental Test and Evaluation (DT&E) and product support activities to include, but not limited to: heavy maintenance and compliance planning/implementation, initial spares, support equipment, technical order publications, and airworthiness directives.			
<b>FY 2025 Plans:</b> Funds in FY 2025 will continue EMD activities, aircraft modification, transition to Developmental Test and Evaluation (DT&E) and product support activities to include, but not limited to: heavy maintenance and compliance planning/implementation, initial spares, support equipment, technical order publications, and airworthiness directives.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / VC-25B
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
Funding decreased due to transition of EMD, Product Support, and PSC efforts to Developmental Test and Evaluation (DT&E).			
<b>Title:</b> VC-25B Government Test	2.921	6.116	9.385
<b>Description:</b> Government test activities to prepare for, oversee, and conduct test events.			
<b>FY 2024 Plans:</b> Funding to prepare for and conduct aircraft functional checkout to include, but not limited to SIL, ground, and flight testing with the participating test organizations and contractors as the first aircraft prepares to enter Developmental Test and Evaluation (DT&E).			
<b>FY 2025 Plans:</b> Funds to support DT&E activities.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to Government Test transition from planning to implementation of DT&E activities to include ground and flight test.			
<b>Accomplishments/Planned Programs Subtotals</b>	79.623	490.701	433.943

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 02 825990: <i>Materials Handling Vehicles</i>	0.000	-	-	-	-	-	-	-	-	0.000	0.000
• OPAF 03 837300: <i>Base Comm Infrastructure</i>	0.978	-	-	-	-	-	-	-	-	0.000	0.978
• OPAF 02 823990: <i>Special Purpose Vehicles</i>	2.946	-	-	-	-	-	-	-	-	0.000	2.946

**Remarks**

**E. Acquisition Strategy**  
In August 2012, the Defense Acquisition Executive (DAE), as the VC-25B Milestone Decision Authority, approved the Materiel Development Decision. The Capability Development Document (CDD) was validated by the Joint Requirements Oversight Council in November 2014.

In January 2015, the Secretary of the Air Force's Determination and Findings designated the Boeing 747-8 aircraft as the airframe platform, and the DAE's Acquisition Decision Memorandum authorized Pre-Milestone (MS) B contracts aimed at improving affordability and reducing program execution risk. In February 2015, the Assistant

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / VC-25B	
<p>Secretary of the Air Force for Acquisition approved a Justification and Approval designating Boeing as the sole source for Pre-MS B activities, Post-MS B design, integration, modification, and test activities. The DAE approved the initial acquisition strategy in September 2015.</p> <p>MS B certification occurred in September 2016. In March 2017, the White House reaffirmed the minimum set of requirements necessary to meet Presidential mission needs; these requirements are codified in the March 2017 CDD.</p> <p>The DAE approved the updated VC-25B Acquisition Strategy and set the Acquisition Program Baseline (APB) in December 2018. The VC-25B Program integrates technologically mature subsystems into two Government furnished, commercial, Boeing 747-8 aircraft. The VC-25B Program designs, integrates, modifies, and tests two aircraft to make them Presidential Mission Ready. Boeing is the prime integrator for VC-25B development activities. The VC-25B Program has a single, sole-source, firm-fixed-price contract with multiple major contract modifications. Modifications include risk reduction activities, 747-8 commercial aircraft purchase, preliminary design, Engineering and Manufacturing Development (EMD), and product support.</p> <p>The contract for risk reduction activities was awarded in January 2016. The contract modification to purchase two commercial aircraft was awarded in August 2017. The contract modification for Preliminary Design was awarded in September 2017. The contract modification for EMD was awarded in July 2018. The initial contract modification for product support activities was awarded in April 2020.</p> <p>In April 2021, Boeing submitted an updated Integrated Master Schedule (IMS) and a formal request to extend aircraft contractual delivery dates by 12-months. In August 2021, upon updating their schedule risk assessment (SRA), Boeing submitted an updated request to the program office to extend aircraft contractual delivery dates by 17-months. This delay resulted in an APB schedule program deviation for the remaining APB milestones (First Flight, Operational Test, Required Asset Availability (RAA) for Initial Operational Capability (IOC), and RAA for Full Operational Capability (FOC)). Supported by the VC-25B Program Office SRA, the APB schedule re-baseline was approved by the DAE 28 June 2022. It extends RAA IOC and RAA FOC 24-months (objective) to 36-months (threshold) from original contractual delivery dates.</p>		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / VC-25B	<b>Project (Number/Name)</b> 655250 / VC-25B
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
VC-25B EMD Contract Activities	SS/FFP	The Boeing Company : Various	3,402.617	43.022	Apr 2023	439.333	Oct 2023	369.719	Nov 2024	-		369.719	401.071	4,655.762	-
VC-25B Product Support Contract Activities	SS/FFP	The Boeing Company : Various	130.989	14.039	Jul 2023	24.033	Oct 2023	33.488	Oct 2024	-		33.488	413.829	616.378	-
<b>Subtotal</b>			3,533.606	57.061		463.366		403.207		-		403.207	814.900	5,272.140	N/A

<b>Support (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority Civilian Pay	Various	AFLCMC/WV : WPAFB, OH	13.293	4.514	Oct 2022	6.042	Oct 2023	5.540	Oct 2024	-		5.540	20.861	50.250	-
<b>Subtotal</b>			13.293	4.514		6.042		5.540		-		5.540	20.861	50.250	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
VC-25B Developmental Test and Evaluation	MIPR	412 TW, JITC : Various	13.724	2.921	Jan 2023	6.116	Dec 2023	9.385	Nov 2024	-		9.385	48.565	80.711	-
<b>Subtotal</b>			13.724	2.921		6.116		9.385		-		9.385	48.565	80.711	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
VC-25B Program Support Costs - Other Government Costs	Various	AFLCMC/WV : WPAFB, OH	10.309	2.390	Nov 2022	2.398	Oct 2023	2.498	Oct 2024	-		2.498	8.215	25.810	-
VC-25B Program Support Costs- Contract Services	C/T&M	AFLCMC/WV : WPAFB, OH	54.940	12.737	Nov 2022	12.779	Oct 2023	13.313	Oct 2024	-		13.313	43.780	137.549	-
<b>Subtotal</b>			65.249	15.127		15.177		15.811		-		15.811	51.995	163.359	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / VC-25B	<b>Project (Number/Name)</b> 655250 / VC-25B
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	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	3,625.872	79.623	490.701	433.943	-	433.943	936.321	5,566.460	N/A

**Remarks**  
FY 2010-2014 RDT&E Funding (\$27.3M) was executed in PE 0401314F, Project 675355, BA07.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / VC-25B	<b>Project (Number/Name)</b> 655250 / VC-25B
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	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>VC-25B</b>	
Aircraft Modification	
Product Support Activities	
Developmental Test (DT)	
Familiarization and Operational Test (FAM/OT)	
Required Assets Available (RAA) for Initial Operational Capability (IOC)	
RAA for Full Operational Capability (FOC)	

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / VC-25B	<b>Project (Number/Name)</b> 655250 / VC-25B
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>VC-25B</b>				
Aircraft Modification	1	2023	3	2026
Product Support Activities	1	2023	1	2027
Developmental Test (DT)	1	2025	1	2027
Familiarization and Operational Test (FAM/OT)	1	2027	3	2027
Required Assets Available (RAA) for Initial Operational Capability (IOC)	3	2028	3	2028
RAA for Full Operational Capability (FOC)	4	2028	4	2028

**Note**  
EMD, Aircraft Modification, and Product Support Activities all began prior to Q1 2023.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	16.657	12.911	26.640	0.000	26.640	30.761	33.830	13.236	14.717	Continuing	Continuing
6506TE: <i>Test And Evaluation Support Budget Authority</i>	-	16.657	12.911	26.640	0.000	26.640	30.761	33.830	13.236	14.717	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Program MDAP/MAIS Code:** 6506

**A. Mission Description and Budget Item Justification**

The Automatic Test Systems (ATS) program office is responsible for developing, acquiring, delivering and sustaining ATS war-fighting capabilities for the United States Air Force (USAF). ATS is responsible for developing, modernizing, acquiring, and sustaining ATS to meet the user's operational needs.

ATS Product Group consists of the following:

- Armament and Stores
- Avionics
- Electronic Warfare
- Software Loader/Verifier and Built-in-Test
- Radar and Identification Friend or Foe
- Specialized
- Automatic Test Systems Innovation and Digital Transformation

Requirements for the Common Armament Tester - Fighters and the Aircraft Smart Weapon Test Set program will be combined for FY24 through the sustainment of the programs.

RDT&E (APPN 3600) funds needed for the development, modernization and technology insertion for over 8K testers across all major commands and Joint Force. Accelerates developing and modernizing cyber-resilient, nuclear-certified ATS supporting USAF Armament, Bomber, Fighter/Advance Aircraft, Mobility, Training, ISR & SOF. Accelerating ATS Digital Transformation; introducing Digital Engineering into legacy systems to realize agility.

RDT&E (APPN 3600) funds needed for development of the Common Armament Tester-Fighters (CAT-F) which will be a common nuclear certified, cyber secure armament testing solution for the F-15 and F-16 with the option for A-10, F-22, and F-35 platforms. The development of this test will give the DoD the ability to develop a common tester to decrease life cycle cost, increase cyber security, reduce sustainment and mobility footprint across multiple platforms and acquiring government owned data.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force Date: March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>
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Funds will be utilized to closeout remaining contract actions for the Bomber Armament Tester (BAT) is replacing six legacy testers and combining their capabilities into one tester. The Bomber Armament Tester will support the B-2, B-1 and B-52 platforms. It will ensure the USAF bomber fleet can conduct nuclear deterrence, global power projection and global strike operations to support the President of the United States and Combatant Commanders by providing a reliable, cyber secure, and sustainable tester. The tasks are to develop a common bomber armament tester and the Test Program Sets (Software, Hardware, and Documentation) to test the armament release equipment on the bombers.

RDT&E efforts support development, testing, and producibility of the Bomber Armament Tester and Test Program Sets. The program will utilize an incremental development approach with B-2 as Increment 1, B-1 as Increment 2, and B-52 as Increment 3.

The Common Aircraft Portable Reprogramming Equipment (CAPRE) Secure Memory Loader Verifier (SMLV) loads operational flight programs to the weapon systems. CAPRE SMLV leads the fleet on Cyber initiatives and is government owned and developed. CAPRE SMLV supports 45 Mission Design Series (MDS) including but not limited to A-10, B-1, B-52, C-5, C-17, C-130, CV-22, F-15, F-16, H-60 and KC-46.

This RDT&E effort includes developing a Network Interface Module (NIM) that provides additional cyber hardening to the CAPRE system and redesigning the current CAPRE system to adapt to the NIM. Additionally this RDT&E effort includes software development for NIM interfaces and new weapons systems moving to the CAPRE system from other MLV systems. The goal is to provide one common cyber secure MLV for the Air Force to minimize cyber vulnerabilities in weapon systems.

RDT&E efforts support prototype development and testing of the Common Armament Tester Fighter and Test Program Sets.

Aircraft Smart Weapons Test Set (ASWTS)-The legacy testers do not have the capability to check a multitude of capabilities (such as MIL-STD-1760 signal integrity) added to the Fighter aircraft through avionics and weapons upgrades. A new ASWTS is required in order to fulfill current testing requirements not covered by the legacy Aircraft Circuits Preload Test Set (ACPTS). Program will be completed in an incremental Approach: Capture all Fighter aircraft requirements, Develop F-16 capability for all blocks (3600),Develop F-15 capability (3600) and Develop A-10 capability (3600)

This program element also includes program administrative cost for the Automatic Test Systems program office and funds the cost of studies and research to support the Automatic Test Systems fleet, to include digital engineering and transformation.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver Automatic Test Systems Program Office weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY23 0.000M was expended, and in FY24 and FY25 7.000M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	16.664	12.911	29.331	0.000	29.331
Current President's Budget	16.657	12.911	26.640	0.000	26.640
Total Adjustments	-0.007	0.000	-2.691	0.000	-2.691
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.007	0.000			
• Other Adjustments	0.000	0.000	-2.691	0.000	-2.691

**Change Summary Explanation**

Appropriated baseline.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
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<b>Title:</b> ATS Innovation and Digital Transformation / Aircraft Smart Weapons Test Set ASWTS	0.000	1.011	2.930
<b>Description:</b> In an effort to accelerate Develop the capability to test fighter aircrafts MIL-STD-1760 smart weapons. Accelerating ATS Digital Transformation; introducing Digital Engineering into legacy systems to realize agility. Accelerates fielding cyber-resilient, nuclear-certified ATS supporting Next Generation Air Dominance (NGAD), 5th-generation aircraft, F-15EX, "Sentinel" Ground Based Strategic Deterrent (GBSD), B-21, KC-46 w/game-changing technology, digital engineering, open systems architecture, software development enabling Agile Combat Employment.			
<b>FY 2024 Plans:</b> Develop a common, cyber secure armament testing solution for the A-10, F-15, F-16, F-22, and MQ-9 platforms to include Common Armament Tester for Fighters (CAT-F), Common Organizational Level Tester (COLT)  Develops and modernizes ATS that maximize warfighter core capabilities across spectrum of DoD weapon systems; accelerates technology development and transition of game-changing technologies into new and existing ATS  Digital Transformation and Innovation are key to ATS relevant for tomorrow's fight in contested environment and supporting Persistent Logistics/Agile Combat Employment (i.e. Flight Line of the Future, Scalable ATS, Wireless and Cable-less ATS, Smart ATS, Rapid Reprogrammability, etc.)			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> / BA 5: <i>System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Accelerates fielding cyber-resilient, nuclear-certified ATS supporting Next Generation Air Dominance (NGAD), 5th-generation aircraft, F-15EX, "Sentinel" Ground Based Strategic Deterrent (GBSD), B-21, KC-46 w/game-changing technology, digital engineering, open systems architecture, software development enabling Agile Combat Employment.</p> <p>Failure in the ATS portfolio will ground aircraft (and/or weapons) due to an inability to troubleshoot, repair, and sustain critical components required for flight.</p> <p><b>FY 2025 Plans:</b> Continue developing a common, cyber secure armament testing solution for the A-10, F-15, F-16, F-22, and MQ-9 platforms.</p> <p>Continue developing and modernizing ATS that maximize warfighter core capabilities across spectrum of DoD weapon systems; accelerates technology development and transition of game-changing technologies into new and existing ATS</p> <p>Digital Transformation and Innovation are key to ATS relevant for tomorrow's fight in contested environment and supporting Persistent Logistics/Agile Combat Employment (i.e. Flight Line of the Future, Scalable ATS, Wireless and Cable-less ATS, Smart ATS, Rapid Reprogrammability, etc.)</p> <p>Accelerating ATS Digital Transformation; introducing Digital Engineering into legacy systems to realize agility. Accelerates fielding cyber-resilient, nuclear-certified ATS supporting Next Generation Air Dominance (NGAD), 5th-generation aircraft, F-15EX, "Sentinel" Ground Based Strategic Deterrent (GBSD), B-21, KC-46 w/game-changing technology, digital engineering, open systems architecture, software development enabling Agile Combat Employment.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to accelerating ATS Digital Transformation; introducing Digital Engineering into legacy systems to realize agility. Accelerates fielding cyber-resilient, nuclear-certified ATS supporting Next Generation Air Dominance (NGAD), 5th-generation aircraft, F-15EX, "Sentinel" Ground Based Strategic Deterrent (GBSD), B-21, KC-46 w/game-changing technology, digital engineering, open systems architecture, software development enabling Agile Combat Employment.</p>				
<p><b>Title:</b> Automatic Test Systems Innovation/Digital Transformation / Common Armament Tester - Fighter</p> <p><b>Description:</b> RDT&amp;E efforts support development, testing, and producibility of the Common Armament Tester -Fighter and Test Program Sets.</p> <p><b>FY 2024 Plans:</b></p>		0.000	7.400	10.156

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force		<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<p>Funds efforts to develop cyber-secure ATS to protect from existing and emerging threats and modernize with game-changing technology including digital engineering, open systems architecture &amp; agile software enabling ACE.</p> <p><b>FY 2025 Plans:</b> Continue developing cyber-secure ATS to protect from existing and emerging threats and modernize with game-changing technology including digital engineering, open systems architecture &amp; agile software enabling ACE.</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> The funding increase for FY25 is due to the costs associated with awarding Increment I for the CAT-F and ASWTS programs, as well as the DCA civilian personnel costs. The increase is also due to the increase of the costs associated with the porting of Legacy AAGs to operate on the CAPRE SMLV tester utilizing the new controller and the Networked Interface Module (NIM). The Joint Force/All MAJCOMs depending on ATS digital transformation leveraging MBSE, Agile SW development, and Open Systems Architecture. Funds efforts to develop cyber-secure ATS to protect from existing and emerging threats and modernize with game-changing technology including digital engineering, open systems architecture &amp; agile software enabling ACE.</p>				
<p><b>Title:</b> Bomber Armament Tester</p> <p><b>Description:</b> Funds will be utilized to close out contract actions on behalf of the Bomber Armament Tester program for B-1, B-2, and B-52. RDT&amp;E efforts support development, testing, and producibility of the Bomber Armament Tester and Test Program Sets as well as DSMS studies associated with the B-52 and B-2 programs to include but not limited to COLT and MUSTANG.</p> <p><b>FY 2024 Plans:</b> Remaining funds needed to complete contract closeout, evaluation of property, software, etc. In addition, funds are needed to support obsolete/DMSMS for existing B-52 and B-2 testers long-term.</p> <p><b>FY 2025 Plans:</b> Program Cancelled</p> <p><b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding decreased due to cancellation in the program. Some funds maybe utilized for contract close out.</p>		10.653	0.000	0.000
<p><b>Title:</b> Common Aircraft Portable Reprogramming Equipment (CAPRE)</p> <p><b>Description:</b> Development of a common cyber secure Memory Loader Verifier for the Air Force. Funds efforts to develop cyber-secure ATS to protect from existing and emerging threats and modernize with game-changing technology including digital engineering, open systems architecture &amp; agile software enabling ACE.</p> <p><b>FY 2024 Plans:</b></p>		6.004	4.500	13.554

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Continuation of development of air adapter groups (AAG) that will allow the 18 platforms currently utilizing CAPRE legacy to transition over to utilizing CAPRE SMLV system.			
<b>FY 2025 Plans:</b> Continue of developing air adapter groups (AAG) that will allow the 18 platforms currently utilizing CAPRE legacy to transition over to utilizing CAPRE SMLV system.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> Funding increased due to Joint Force/All MAJCOMs depending ATS digital transformation leveraging MBSE, Agile SW development, and Open Systems Architecture. Funds efforts to develop cyber-secure ATS to protect from existing and emerging threats and modernize with game-changing technology including digital engineering, open systems architecture & agile software enabling ACE.			
<b>Accomplishments/Planned Programs Subtotals</b>	16.657	12.911	26.640

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF 07 00071: <i>Replacement Support Equipment</i>	23.677	19.182	23.948	-	23.948	-	-	-	-	0.000	66.807

**Remarks**

Other program funding includes procurement funds for Bomber Armament Tester Program, the Common Aircraft Portable Reprogrammable Equipment Secure Memory Loader Verifier, Aircraft Smart Weapons Test Set (ASWTS), Common Armament Tester - Fighters.

FY24 funding is required for administrative fees associated with releasing request for proposals (RFPs), direct cite authority (DCA) civilian personnel costs, and other administrative costs for the new start programs ASWTS and CAT-F. The Joint Force/All MAJCOMs depending on ATS digital transformation leveraging MBSE, Agile SW development, and Open Systems Architecture. Funds efforts to develop cyber-secure ATS to protect from existing and emerging threats and modernize with game-changing technology including digital engineering, open systems architecture & agile software enabling ACE.

The funding increase for FY25 is due to the costs associated with awarding Increment I for the CAT-F and ASWTS programs, as well as the DCA civilian personnel costs. The increase is also due to the increase of the costs associated with the porting of Legacy AAGs to operate on the CAPRE SMLV tester utilizing the new controller and the Networked Interface Module (NIM).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Air Force Date: March 2024

**Appropriation/Budget Activity**  
3600: *Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)*

**R-1 Program Element (Number/Name)**  
PE 0701212F / *Automated Test Systems*

**E. Acquisition Strategy**

Acquisition Strategy for ATS modernization and technology insertion projects are evaluated for priority, feasibility, Return on Investment, and cost then sorted into Tiers for ease of classification:

Tier I: Stars-Highest priority projects that are both achievable and provide significant benefits to the Air Force.

•Tier II: Rising Stars-Projects that are high priority, meet modernization goals, and will deliver needed capabilities.

•Tier III: Innovation Opportunities-Low TRL projects that require small investments to begin development.

•Tier IV: Sustainment Efforts-Lower cost efforts targeted at improving existing systems. Typically sustaining engineering funds (583), rather than R&D funds (3600)

•Tier V: Watch List-Low priority and/or immature concepts that require significant investment or technology development

Acquisition Strategy for the Bomber Armament Tester (BAT) was approved by AFPEO/ Agile Combat Support on 12 November 2015. The BAT program will use an incremental approach based on customer needs to satisfy this requirement. Increment 1 includes the development of the core test set, the B-2A requirements and development of the most complex B-1B and B-52 test program sets. Increment 2 consist of the B-1B development and Increment 3 consists of the B-52H requirements. The BAT program will utilize full and open competition to award the contract. Contract awarded September 28, 2017.

The Acquisition strategy for Common Aircraft Portable Reprogrammable Equipment (CAPRE) Secure Memory Loader Verifier (SMLV) is to use the original government manufacturer to develop the NIM, software and hardware development. Acquisition Strategy for CAPRE was approved by the Milestone Decision Authority in June 2017.

The Acquisition strategy for the Common Armament Tester for Fighters and Aircraft Smart Weapons Test Set will be approved in 2nd quarter FY24.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>	<b>Project (Number/Name)</b> 6506TE / <i>Test And Evaluation Support Budget Authority</i>
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
CAPRE/CAPRE SMLV Development	PO	309th OO-ALC : UT	-	9.000	Nov 2022	4.500	Nov 2023	13.054	Nov 2024	-		13.054	Continuing	Continuing	-
BAT Development / Cost Overruns	C/CPAF	Not specified. : CA	-	7.657	Mar 2023	-		-		-		-	Continuing	Continuing	-
CAT-F DEVELOPMENT	C/TBD	Not specified. : TBD	-	-		4.011	Jun 2024	7.857	Nov 2024	-		7.857	Continuing	Continuing	-
ASWTS DEVELOPMENT	C/TBD	Not specified. : TBD	-	-		1.000	May 2024	1.916	Nov 2024	-		1.916	Continuing	Continuing	-
<b>Subtotal</b>			-	16.657		9.511		22.827		-		22.827	Continuing	Continuing	N/A

**Remarks**

FY24 and FY25 dates changed for CAT-F/ASWTS due to being under a continuing resolution (CR). Programs are considered new starts. Direct Cite Authority civilian pay positions have also been affected and will delay expenditures on the program.

FY24 funding is required for administrative fees associated with releasing request for proposals (RFPs), direct cite authority (DCA) civilian personnel costs, and other administrative costs for the new start programs ASWTS and CAT-F.

FY24 funding increased due to accelerating ATS Digital Transformation; introducing Digital Engineering into legacy systems to realize agility. Accelerates fielding cyber-resilient, nuclear-certified ATS supporting Next Generation Air Dominance (NGAD), 5th-generation aircraft, F-15EX, "Sentinel" Ground Based Strategic Deterrent (GBSD), B-21, KC-46 w/game-changing technology, digital engineering, open systems architecture, software development enabling Agile Combat Employment.

The funding increase for FY25 is due to the costs associated with awarding Increment I for the CAT-F and ASWTS programs, as well as the DCA civilian personnel costs. The increase is also due to the increase of the costs associated with the porting of Legacy AAGs to operate on the CAPRE SMLV tester utilizing the new controller and the Networked Interface Module (NIM).

Product Development Cost include all ATS modernization and technology insertion to include but not limited to the development of the Bomber Armament Test Sets (Units under test Software, hardware and Technical Data), Technical Data and maintenance of Government Furnished Equipment. Remaining funds needed to complete contract closeout, evaluation of property, software, etc. In addition, funds are needed to support obsolete/DMSMS for existing B-52 and B-2 testers long-term.

Development efforts include developing a Network Interface Module (NIM) that provides additional cyber hardening to the CAPRE system and redesigning the current CAPRE system to adapt to the NIM. Development effort also include software development for NIM interfaces and new weapons systems moving to the CAPRE system from other MLV systems. The goal is to provide one common cyber secure MLV for the Air Force.

Develops and modernizes ATS that maximize warfighter core capabilities across spectrum of DoD weapon systems; accelerates technology development and transition of game-changing technologies into new and existing ATS

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / Automated Test Systems	<b>Project (Number/Name)</b> 6506TE / Test And Evaluation Support Budget Authority
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Develops and modernizes ATS that maximize warfighter core capabilities across spectrum of DoD weapon systems; accelerates technology development and transition of game-changing technologies into new and existing ATS.

Joint Force/All MAJCOMs depend on ATS digital transformation leveraging MBSE, Agile SW development, and Open Systems Architecture

Digital Transformation and Innovation are key to ATS relevant for tomorrow's fight in contested environment and supporting Persistent Logistics/Agile Combat Employment; (i.e. Flight Line of the Future, Scalable ATS, Wireless and Cable-less ATS, Smart ATS, Rapid Reprogrammability, etc.)

Program is growing as WNA focuses on 5-10 year ATS Technology and Modernization program/roadmap.

Common Armament Tester-Fighter will develop a common, cyber secure armament testing solution for the A-10, F-15, F-16, F-22, and MQ-9 platforms. Reduces life cycle cost, increases cyber security, reduces sustainment footprint across multiple platforms and acquires government owned data.

The Aircraft Smart Weapon Test Set (ASWTS) will fill the capability gap to test fighter aircrafts MIL-STD-1760 smart weapons.&#160;The current Aircraft Circuits Preload Test Set for the F-16 is not capable. Tester's positive impact on mission readiness expected to save 13,000 man-hours per year.

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Direct Cite Authority Civilian Positions	C/CPAF	Not specified. : TBD	-	-		2.800	Apr 2024	3.100	Oct 2024	-		3.100	Continuing	Continuing	-
Digital Innovation and Transformation	TBD	Not specified. : TBD	-	-		0.600	Jan 2024	0.713	Feb 2025	-		0.713	Continuing	Continuing	-
BAT Travel	Various	Not specified. : NV	-	-		-		-		-		-	Continuing	Continuing	-
BAT Program Management Support	C/FFP	Not specified. : NV	-	-		-		-		-		-	Continuing	Continuing	-
CAPRE/CAPRE SMLV Travel	Various	Not specified. : NV	-	-		-		-		-		-	Continuing	Continuing	-
CAPRE/ CAPRE SMLV Program Management Support	C/FFP	Not specified. : NV	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		3.400		3.813		-		3.813	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>	<b>Project (Number/Name)</b> 6506TE / <i>Test And Evaluation Support Budget Authority</i>
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<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
PMA costs includes efforts to develop cyber-secure ATS to protect from existing and emerging threats and modernize with game-changing technology including digital engineering, open systems architecture & agile software enabling ACE and travel requirements. PMA cost also include an Information Assurance expert, Assistance and advisory service contractors to provide support to the program office during the development of the program. The program element may include necessary civilian pay expenses required to manage, execute and deliver Automatic Test System capability.

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	16.657	12.911	26.640	-	26.640	Continuing	Continuing	N/A

**Remarks**  
The Joint Force/All MAJCOMs depending on ATS digital transformation leveraging MBSE, Agile SW development, and Open Systems Architecture. Funds efforts to develop cyber-secure ATS to protect from existing and emerging threats and modernize with game-changing technology including digital engineering, open systems architecture & agile software enabling ACE.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>	<b>Project (Number/Name)</b> 6506TE / <i>Test And Evaluation Support Budget Authority</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b>AUTOMATIC TEST SYSTEMS</b>	
TEST SYSTEM MODERNIZATION	[REDACTED]
DT/OT	[REDACTED]
CAPRE DT/OT AAG LEGACY PLATFORMS	[REDACTED]
CAPRE LEGACY AAG DEVELOPMENT GATE	[REDACTED]
<b>CAT-F</b>	
Develop F-16 capability for all blocks	[REDACTED]
Direct Cite Civilian Authorizations	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>	<b>Project (Number/Name)</b> 6506TE / <i>Test And Evaluation Support Budget Authority</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>AUTOMATIC TEST SYSTEMS</b>				
TEST SYSTEM MODERNIZATION	2	2023	4	2027
DT/OT	1	2023	3	2023
CAPRE DT/OT AAG LEGACY PLATFORMS	4	2023	2	2025
CAPRE LEGACY AAG DEVELOPMENT GATE	4	2023	2	2025
<b>CAT-F</b>				
Develop F-16 capability for all blocks	3	2024	4	2025
Direct Cite Civilian Authorizations	2	2024	4	2028

**Note**

The Bomber Armament Tester (BAT) program has been cancelled. Awaiting contract closeout costs from termination. The BAT tester was supposed to be a nuclear certified common tester capable of testing on-aircraft Stores Management Systems and Line Replacement Units both on-and off-aircraft. The BAT System will test functionality of the Armament Mission Equipment (AME) that is required for B-2A, B-1B, and B-52H weapons delivery. The BAT schedule reflects Increments I, II, AND III. Due to an increase in material cost and lack of access to needed Government Furnished Property (GFP) to the Original Equipment Manufacturer (OEM), the BAT program is experiencing major schedule delays which is causing the program to overrun the projected cost. Program re-baselined at the beginning of FY21 to stabilize program costs and schedule. Program has been cancelled. Funds may be utilized for any contract close out actions associated with this program.

Product Development Cost include all ATS modernization and technology insertion to include but not limited to the development of the Bomber Armament Test Sets (Units under test Software, hardware and Technical Data), Technical Data and maintenance of Government Furnished Equipment. Remaining funds needed to complete contract closeout, evaluation of property, software, etc. In addition, funds are needed to support obsolete/DMSMS for existing B-52 and B-2 testers long-term.

Development efforts include developing a Network Interface Module (NIM) that provides additional cyber hardening to the CAPRE system and redesigning the current CAPRE system to adapt to the NIM. Development effort also include software development for NIM interfaces and new weapons systems moving to the CAPRE system from other MLV systems. The goal is to provide one common cyber secure MLV for the Air Force.

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0701212F / <i>Automated Test Systems</i>	<b>Project (Number/Name)</b> 6506TE / <i>Test And Evaluation Support Budget Authority</i>
<p>Develops and modernizes ATS that maximize warfighter core capabilities across spectrum of DoD weapon systems; accelerates technology development and transition of game-changing technologies into new and existing ATS</p> <p>FY24 funding is required for administrative fees associated with releasing request for proposals (RFPs), direct cite authority (DCA) civilian personnel costs, and other administrative costs for the new start programs ASWTS and CAT-F.</p> <p>FY24 funding increased due to accelerating ATS Digital Transformation; introducing Digital Engineering into legacy systems to realize agility. Accelerates fielding cyber-resilient, nuclear-certified ATS supporting Next Generation Air Dominance (NGAD), 5th-generation aircraft, F-15EX, "Sentinel" Ground Based Strategic Deterrent (GBSD), B-21, KC-46 w/game-changing technology, digital engineering, open systems architecture, software development enabling Agile Combat Employment.</p> <p>The funding increase for FY25 is due to the costs associated with awarding Increment I for the CAT-F and ASWTS programs, as well as the DCA civilian personnel costs. The increase is also due to the increase of the costs associated with the porting of Legacy AAGs to operate on the CAPRE SMLV tester utilizing the new controller and the Networked Interface Module (NIM).</p> <p>Develops and modernizes ATS that maximize warfighter core capabilities across spectrum of DoD weapon systems; accelerates technology development and transition of game-changing technologies into new and existing ATS.</p> <p>Joint Force/All MAJCOMs depend on ATS digital transformation leveraging MBSE, Agile SW development, and Open Systems Architecture</p> <p>Digital Transformation and Innovation are key to ATS relevant for tomorrow's fight in contested environment and supporting Persistent Logistics/Agile Combat Employment; (i.e. Flight Line of the Future, Scalable ATS, Wireless and Cable-less ATS, Smart ATS, Rapid Reprogrammability, etc.)</p> <p>Program is growing as WNA focuses on 5-10 year ATS Technology and Modernization program/roadmap.</p> <p>Common Armament Tester-Fighter will develop a common, cyber secure armament testing solution for the A-10, F-15, F-16, F-22, and MQ-9 platforms. Reduces life cycle cost, increases cyber security, reduces sustainment footprint across multiple platforms and acquires government owned data.</p> <p>The Aircraft Smart Weapon Test Set (ASWTS) will fill the capability gap to test fighter aircrafts MIL-STD-1760 smart weapons.&amp;#160; The current Aircraft Circuits Preload Test Set for the F-16 is not capable. Tester's positive impact on mission readiness expected to save 13,000 man-hours per year.</p> <p>This program element also includes program administrative cost for the Automatic Test Systems program office and funds the cost of studies and research to support the Automatic Test Systems fleet, to include digital engineering and transformation.</p> <p>This program element may include necessary civilian pay expenses required to manage, execute, and deliver Automatic Test Systems Program Office weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in...</p>		

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0804772F / <i>Training Developments</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	10.838	1.922	4.960	0.000	4.960	5.083	5.187	5.297	5.401	Continuing	Continuing
652400: <i>Training Developments</i>	-	7.831	1.922	4.960	0.000	4.960	5.083	5.187	5.297	5.401	Continuing	Continuing
652401: <i>AETC Transformational Education and Training</i>	-	3.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

Pilot Training Next [PTN] offers a more effective approach to pilot training. New training technologies will be studied and validated. Results will be used by Air Education and Training Command to develop processes and procedures to increase pilot production, improve and streamline existing training programs, and to incorporate into other programs.

Alignment to the NDS: PTN is part of a complete redesign of pilot training using cutting edge technology to provide a faster, more cost effective and more comprehensive training model to get the warfighter to the cockpit in half the time of the existing model.

Funding contained in this documentation directly aids Air Education and Training Command's flying training enterprise to continue reducing the USAF Pilot Shortage.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023 \$0 was expended for civilian pay expenses in this program element, and in FY2024 \$0 is forecasted for civilian pay expenses in this program element

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0804772F / <i>Training Developments</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	10.838	1.922	4.951	0.000	4.951
Current President's Budget	10.838	1.922	4.960	0.000	4.960
Total Adjustments	0.000	0.000	0.009	0.000	0.009
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.009	0.000	0.009

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 3600 / 5					<b>R-1 Program Element (Number/Name)</b> PE 0804772F / <i>Training Developments</i>				<b>Project (Number/Name)</b> 652400 / <i>Training Developments</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
652400: <i>Training Developments</i>	-	7.831	1.922	4.960	0.000	4.960	5.083	5.187	5.297	5.401	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

Pilot Training Next [PTN] offers a more effective approach to pilot training. New training technologies will be studied and validated. Results will be used by Air Education and Training Command to develop processes and procedures to increase pilot production, improve and streamline existing training programs, and to incorporate into other programs.

Alignment to the NDS: PTN is part of a complete redesign of pilot training using cutting edge technology to provide a faster, more cost effective and more comprehensive training model to get the warfighter to the cockpit in half the time of the existing model.

Funding contained in this documentation directly aids Air Education and Training Command's flying training enterprise to continue reducing the USAF Pilot Shortage.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver weapon system capability. The use of such programs funds would be in addition to the civilian pay expenses budgeted in program element 0605827F, 0605828F, 0605829F, 0605831F, 0605832F, 0605833F, 0605898F, 0606398F. In FY2023 \$0 was expended for civilian pay expenses in this program element, and in FY2024 \$0 is forecasted for civilian pay expenses in this program element

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> Pilot Training Next (PTN) Development	7.831	1.922	4.960
<b>Description:</b> Pilot Training Next currently utilizes eight (8) T-6B aircraft equipped with heads-up and advanced situational awareness displays. Mission computers were temporarily modified to enable Air-to-Air and Air-to-Ground simulated weapons delivery. Numerous Virtual Reality (VR) Immersive Training Devices (ITDs) are also being utilized in the training curriculum. The aircraft and VR ITDs enable proper assessment of advanced pilot training concepts, techniques, procedures, and capabilities, while also providing a flexible architecture that incorporates Live, Virtual, and Constructive (LVC) elements into undergraduate pilot training.			
Efforts will be focused on validating new LVC and VR ITD concepts to develop processes and procedures to increase pilot production, improve and streamline existing undergraduate pilot training programs.			
<b>FY 2024 Plans:</b> Continue development of PTN.			
<b>FY 2025 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0804772F / <i>Training Developments</i>	<b>Project (Number/Name)</b> 652400 / <i>Training Developments</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2023	FY 2024	FY 2025
Continue development of PTN.			
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> Funding increased due to increase in requirements			
<b>Accomplishments/Planned Programs Subtotals</b>	7.831	1.922	4.960

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Program Office[s] will select their own acquisition strategies based on Air Education and Training Command's innovation unit [Detachment 24] requirements. The initial systems PTN is primarily focused on are small-scale avionics modifications to the T-6A aircraft and incorporating Virtual Reality Immersive Training Devices into the undergraduate pilot training curriculum.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0804772F / Training Developments	<b>Project (Number/Name)</b> 652400 / Training Developments
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Pilot Training Next Contracts	Various	AFLCMC : TBD	-	6.460	Apr 2023	1.248	Apr 2024	3.878	Apr 2025	-		3.878	Continuing	Continuing	-
<b>Subtotal</b>			-	6.460		1.248		3.878		-		3.878	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Pilot Training Next Test Activities	TBD	TBD : TBD	-	0.152		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.152		-		-		-		-	Continuing	Continuing	N/A

<b>Management Services (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administrative Support	TBD	Not specified. : TBD	-	0.457	Oct 2022	0.044	Oct 2024	0.382	Oct 2025	-		0.382	Continuing	Continuing	-
Administrative and Advisory Services Support	TBD	Not specified. : TBD	-	0.660	Oct 2022	0.550	Oct 2024	0.607	Oct 2025	-		0.607	Continuing	Continuing	-
Government Travel	Various	Not specified. : TBD	-	0.102	Oct 2022	0.080	Oct 2024	0.093	Oct 2025	-		0.093	Continuing	Continuing	-
<b>Subtotal</b>			-	1.219		0.674		1.082		-		1.082	Continuing	Continuing	N/A

	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		-	7.831	1.922	4.960	-	4.960	Continuing	Continuing	N/A

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2025 Air Force** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0804772F / <i>Training Developments</i>	<b>Project (Number/Name)</b> 652400 / <i>Training Developments</i>
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FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<b><i>Pilot Training Next Studies</i></b>	
Pilot Training Next Systems Development	[REDACTED]

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0804772F / <i>Training Developments</i>	<b>Project (Number/Name)</b> 652400 / <i>Training Developments</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Pilot Training Next Studies</i></b>				
Pilot Training Next Systems Development	2	2023	4	2028

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**Exhibit R-2A, RDT&E Project Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0804772F / <i>Training Developments</i>	<b>Project (Number/Name)</b> 652401 / <i>AETC Transformational Education and Training</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
652401: <i>AETC Transformational Education and Training</i>	-	3.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

The Mobility Pilot Production Fundamentals simulator provides stop-gap training for the Mobility Pilot production while the T-1 divests. Air Mobility Fundamentals is a prep course, allowing FTU manning to teach both this simulator and flying courses.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2023	FY 2024	FY 2025
<b><i>Title:</i></b> Air Mobility Fundamentals	3.007	-	-
<b><i>Description:</i></b> The Mobility Pilot Production Fundamentals simulator provides stop-gap training for the Mobility Pilot production while the T-1 divests. Air Mobility Fundamentals is a prep course, allowing FTU manning to teach both this simulator and flying courses.			
<b>Accomplishments/Planned Programs Subtotals</b>	3.007	-	-

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**D. Acquisition Strategy**

Program Office[s] will select their own acquisition strategies based on Air Education and Training Command's innovation unit [Detachment 24] requirements.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0804772F / <i>Training Developments</i>	<b>Project (Number/Name)</b> 652401 / <i>AETC Transformational Education and Training</i>

FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

<i>No project title.</i>	
No event title.	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0804772F / <i>Training Developments</i>	<b>Project (Number/Name)</b> 652401 / <i>AETC Transformational Education and Training</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>No project title.</i>				
No event title.	1	2023	4	2023

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Air Force **Date:** March 2024

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1203176F / <i>Combat Survivor Evader Locator</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	-	0.000	0.000	2.269	0.000	2.269	2.283	2.329	2.414	2.463	Continuing	Continuing
654522: <i>CSAR EMD</i>	-	0.000	0.000	2.269	0.000	2.269	2.283	2.329	2.414	2.463	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
 This program, BA 5, PE 1203176F, project 654522, CSEL Portable Interrogator, is a new start.

**A. Mission Description and Budget Item Justification**

The Combat Survivor Evader Locator (CSEL) System provides aircrews with end-to-end global satellite secure emergency communication capability during combat and peace-time flying operations. CSEL provides a hand held radio as part of the mandatory aircrew survival gear. CSEL is a joint program (AF, Army, and Navy) and is the DoD program of record for personnel recovery survival radios. CSEL supports four of five Personnel Mission Phases: Report, Locate, Support, and Recover.

A National Security Agency (NSA) Cryptographic Modernization mandate and the Ultra High Frequency Follow-On satellite constellation are at the end of life and are driving upgrades to base stations. This effort includes development to modernize the system to integrate common waveforms, integrate broadcast reception for non-CSEL devices. A portable interrogator will precisely locate the IP using the CSEL architecture without extensive audio communications that could compromise both rescue forces and IP. The portable interrogator will enable communication between IP and any designated aircraft not equipped with a AN/ARS-6 PLS Lightweight Airborne Radio System (LARS) or similar device as a Rescue Support Force (F-35, F-16, F-15E, Ground Teams etc.) asset.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver CSEL capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F. In FY24, \$0.000M was expended for civilian pay expenses in this program element and in FY25 \$0.000M is forecasted for civilian pay expenses in this program element.

This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full rate production.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1203176F / <i>Combat Survivor Evader Locator</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.000	0.000	2.265	0.000	2.265
Current President's Budget	0.000	0.000	2.269	0.000	2.269
Total Adjustments	0.000	0.000	0.004	0.000	0.004
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	0.004	0.000	0.004

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>
<b>Title:</b> CSEL Portable Interrogator	0.000	0.000	2.269
<b>Description:</b> Develop portable interrogator that enables Terminal Area Communication directly between Aircraft and Isolated Personnel, independent of and without modification to Aircraft.			
<b>FY 2024 Plans:</b> N/A			
<b>FY 2025 Plans:</b> The FY2025 efforts will support CSEL Portable Interrogator and will be part of the USAF CSEL Command and Control System program. This modification effort is supported by CSE Lead Command ACC/A5R Personnel Recovery Division with potential support to other DoD customers.			
<b>FY 2024 to FY 2025 Increase/Decrease Statement:</b> FY2025 funding increase due to Portable Interrogator new start efforts.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.000	2.269

<b>D. Other Program Funding Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE 05 0207279F: <i>Isolated Personnel Survivability and Recovery</i>	9.591	56.225	10.000	-	10.000	30.252	0.000	25.540	26.044	0.000	157.652

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2025 Air Force	<b>Date:</b> March 2024
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1203176F / <i>Combat Survivor Evader Locator</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u> <u>Base</u>	<u>FY 2025</u> <u>OCO</u>	<u>FY 2025</u> <u>Total</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>	<u>FY 2029</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**

**E. Acquisition Strategy**

Program management for CSEL is under the direction of PEO Digital, located at Hanscom AFB, MA. The Aerospace Dominance Enabler Division (AFLCMC/HBZ; Hill AFB, UT) provides contracting, legal, comptroller, programmatic, engineering, test, and logistics support. The Air Force Life Cycle Management Center, provides Other Transaction Authority.





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Air Force		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 1203176F / <i>Combat Survivor Evader Locator</i>	<b>Project (Number/Name)</b> 654522 / <i>CSAR EMD</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>CSEL Portable Interregator</i></b>				
Product Development	1	2025	4	2026