Department of Defense
Fiscal Year (FY) 2015 Budget Estimates

March 2014

Air Force

Justification Book Volume 3a

Research, Development, Test & Evaluation, Air Force

Vol−III Part 1

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Department of Defense
FY 2015 President's Budget
Exhibit R-1 FY 2015 President's Budget
Total Obligational Authority
(Dollars in Thousands)

04 Mar 2014

Appropriation	FY 2013 (Base & OCO)	FY 2014 Base Enacted	FY 2014 OCO Enacted	FY 2014 Total Enacted	FY 2015 Base
Research, Development, Test & Eval, AF	23,163,315	23,571,637	9,000	23,580,637	23,739,892
Total Research, Development, Test & Evaluation	23,163,315	23,571,637	9,000	23,580,637	23,739,892

R-1C1: FY 2015 President's Budget (Published Version), as of March 4, 2014 at 13:04:42

Department of Defense
FY 2015 President's Budget
Exhibit R-1 FY 2015 President's Budget
Total Obligational Authority
(Dollars in Thousands)

04 Mar 2014

Summary Recap of Budget Activities	FY 2013 (Base & OCO)	FY 2014 Base Enacted	FY 2014 OCO Enacted	FY 2014 Total Enacted	FY 2015 Base
Basic Research	460,881	524,770		524,770	454,490
Applied Research	1,008,540	1,146,421		1,146,421	1,081,133
Advanced Technology Development	568,508	636,442		636,442	593,817
Advanced Component Development & Prototypes	1,094,416	843,398		843,398	1,372,168
System Development & Demonstration	4,355,237	4,516,611		4,516,611	3,337,419
Management Support	1,418,857	1,114,458		1,114,458	1,183,199
Operational Systems Development	14,256,876	14,789,537		14,798,537	15,717,666
Total Research, Development, Test & Evaluation	23,163,315	23,571,637		23,580,637	23,739,892
Summary Recap of FYDP Programs					
Strategic Forces	148,190	186,769		186,769	570,597
General Purpose Forces	1,489,986	1,491,120		1,491,120	1,668,236
Intelligence and Communications	1,746,267	1,416,044		1,416,044	1,663,672
Mobility Forces	189,167	311,427		311,427	243,061
Research and Development	9,094,958	8,926,906		8,926,906	7,879,209
Central Supply and Maintenance	70,378	94,148		94,148	145,945
Training Medical and Other	319	1,727		1,727	2,538
Administration and Associated Activities	89,285	118,251		118,251	121,724
Support of Other Nations	3,376	3,785		3,785	3,790
Classified Programs	10,331,389	11,021,460	9,000	11,030,460	11,441,120
Total Research, Development, Test & Evaluation	23,163,315	23,571,637	9,000	23,580,637	23,739,892

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Department of the Air Force
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04 Mar 2014

Appropriation: 3600F Research, Development, Test & Eval, AF

Line No	Program Element Number	Item	Act	FY 2013 (Base & OCO)	FY 2014 Base Enacted	FY 2014 OCO Enacted	FY 2014 Total Enacted	FY 2015 Base	Sec
1	0601102F	Defense Research Sciences	01	323,869	373,151		373,151	314,482	U
2	0601103F	University Research Initiatives	01	125,398	138,333		138,333	127,079	U
3	0601108F	High Energy Laser Research Initiatives	01	11,614	13,286		13,286	12,929	U
		Basic Research		460,881	524,770		524,770	454,490	
4	0602102F	Materials	02	111,177	120,846		120,846	105,680	U
5	0602201F	Aerospace Vehicle Technologies	02	108,536	119,624		119,624	105,747	U
6	0602202F	Human Effectiveness Applied Research	02	80,616	104,427		104,427	81,957	U
7	0602203F	Aerospace Propulsion	02	209,315	197,546		197,546	172,550	U
8	0602204F	Aerospace Sensors	02	115,568	127,419		127,419	118,343	U
9	0602601F	Space Technology	02	88,363	103,955		103,955	98,229	U
10	0602602F	Conventional Munitions	02	70,039	81,521		81,521	87,387	U
11	0602605F	Directed Energy Technology	02	96,401	112,783		112,783	125,955	U
12	0602788F	Dominant Information Sciences and Methods	02	94,292	138,145		138,145	147,789	U
13	0602890F	High Energy Laser Research	02	34,233	40,155		40,155	37,496	U
		Applied Research		1,008,540	1,146,421		1,146,421	1,081,133	
14	0603112F	Advanced Materials for Weapon Systems	03	54,334	54,572		54,572	32,177	U
15	0603199F	Sustainment Science and Technology (S&T)	03	5,833	12,800		12,800	15,800	U
16	0603203F	Advanced Aerospace Sensors	03	32,818	30,546		30,546	34,420	U
17	0603211F	Aerospace Technology Dev/Demo	03	72,462	77,329		77,329	91,062	U
18	0603216F	Aerospace Propulsion and Power Technology	03	146,776	159,291		159,291	124,236	U
19	0603270F	Electronic Combat Technology	03	24,181	43,381		43,381	47,602	U

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20	0603401F	Advanced Spacecraft Technology	03	57,612	67,894		67,894	69,026	U
21	0603444F	Maui Space Surveillance System (MSSS)	03	26,235	26,299		26,299	14,031	U
22	0603456F	Human Effectiveness Advanced Technology Development	03	19,303	20,902		20,902	21,788	U
23	0603601F	Conventional Weapons Technology	03	32,518	33,996		33,996	42,046	U
24	0603605F	Advanced Weapons Technology	03	16,994	19,000		19,000	23,542	U
25	0603680F	Manufacturing Technology Program	03	51,448	41,353		41,353	42,772	U
26	0603788F	Battlespace Knowledge Development and Demonstration	03	27,994	49,079		49,079	35,315	U
		Advanced Technology Development		568,508	636,442		636,442	593,817	
27	0603260F	Intelligence Advanced Development	04	3,525	3,983		3,983	5,408	U
28	0603287F	Physical Security Equipment	04	3,350	3,874		3,874		U
29	0603430F	Advanced EHF MILSATCOM (SPACE)	04	211,632					U
30	0603432F	Polar MILSATCOM (SPACE)	04	77,202					U
31	0603438F	Space Control Technology	04	20,584	22,862		22,862	6,075	U
32	0603742F	Combat Identification Technology	04	25,987	13,386		13,386	10,980	U
33	0603790F	NATO Research and Development	04	3,981	4,568		4,568	2,392	U
34	0603791F	International Space Cooperative R&D	04	569	379		379	833	U
35	0603830F	Space Security and Defense Program	04	9,557	24,764		24,764	32,313	U
36	0603850F	Integrated Broadcast Service - Dem/Val	04	18,216					U
37	0603851F	Intercontinental Ballistic Missile - Dem/Val	04	63,153	72,696		72,696	30,885	U
38	0603854F	Wideband Global SATCOM RDT&E (Space)	04	10,438					U
39	0603859F	Pollution Prevention - Dem/Val	04	956	953		953	1,798	U

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40	0604015F	Long Range Strike	04	258,707	359,437		359,437	913,728	U
41	0604283F	Battle Mgmt Com & Ctrl Sensor Development	04	100,507					U
42	0604317F	Technology Transfer	04	2,295	2,606		2,606	2,669	U
43	0604327F	Hard and Deeply Buried Target Defeat System (HDBTDS) Program	04	16,626	103		103		U
44	0604337F	Requirements Analysis and Maturation	04	14,760	11,884		11,884		U
45	0604422F	Weather System Follow-on	04					39,901	U
46	0604458F	Air & Space Ops Center	04		58,861		58,861		U
47	0604618F	Joint Direct Attack Munition	04		2,500		2,500		U
48	0604635F	Ground Attack Weapons Fuze Development	04	8,657	17,764		17,764		U
49	0604800F	F-35 - EMD	04					4,976	U
50	0604857F	Operationally Responsive Space	04	96,209	10,000		10,000		U
51	0604858F	Tech Transition Program	04	82,278	48,636		48,636	59,004	U
52	0105921F	Service Support to STRATCOM - Space Activities	04		2,779		2,779		U
53	0201184F	Counter Narco-Terrorism Program Office	04	1,540					U
54	0207110F	Next Generation Air Dominance	04					15,722	U
55	0207455F	Three Dimensional Long-Range Radar (3DELRR)	04		54,191		54,191	88,825	U
56	0305164F	NAVSTAR Global Positioning System (User Equipment) (SPACE)	04	63,687	127,172		127,172	156,659	U
		Advanced Component Development & Prototypes		1,094,416	843,398		843,398	1,372,168	
57	0603260F	Intelligence Advanced Development	05		977		977		U
58	0603840F	Global Broadcast Service (GBS)	05	14,632					U
59	0604233F	Specialized Undergraduate Flight Training	05	5,151	3,601		3,601	13,324	U

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60	0604270F	Electronic Warfare Development	05	1,914	1,971		1,971	1,965	U
61	0604281F	Tactical Data Networks Enterprise	05	21,355	42,745		42,745	39,110	U
62	0604287F	Physical Security Equipment	05	51				3,926	U
63	0604329F	Small Diameter Bomb (SDB) - EMD	05	125,101	113,334		113,334	68,759	U
64	0604421F	Counterspace Systems	05	25,775	22,655		22,655	23,746	U
65	0604425F	Space Situation Awareness Systems	05	225,838	314,625		314,625	9,462	U
66	0604426F	Space Fence	05					214,131	U
67	0604429F	Airborne Electronic Attack	05	3,987	4,575		4,575	30,687	U
68	0604441F	Space Based Infrared System (SBIRS) High EMD	05	486,647	322,399		322,399	319,501	U
69	0604602F	Armament/Ordnance Development	05	8,874	13,661		13,661	31,112	U
70	0604604F	Submunitions	05	2,352	2,564		2,564	2,543	U
71	0604617F	Agile Combat Support	05	21,145	17,036		17,036	46,340	U
72	0604706F	Life Support Systems	05	5,832	7,273		7,273	8,854	U
73	0604735F	Combat Training Ranges	05	9,209	25,300		25,300	10,129	U
74	0604750F	Intelligence Equipment	05	736					U
75	0604800F	F-35 - EMD	05	1,129,879	628,454		628,454	563,037	U
76	0604851F	Intercontinental Ballistic Missile - EMD	05	120,375	112,760		112,760		U
77	0604853F	Evolved Expendable Launch Vehicle Program (SPACE) - EMD	05	29,949	24,938		24,938		U
78	0604932F	Long Range Standoff Weapon	05	1,836	5,000		5,000	4,938	U
79	0604933F	ICBM Fuze Modernization	05	65,370	118,411		118,411	59,826	U
80	0605030F	Joint Tactical Network Center (JTNC)	05					78	U

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81	0605213F	F-22 Modernization Increment 3.2B	05	110,432	115,000		115,000	173,647	U
82	0605214F	Ground Attack Weapons Fuze Development	05					5,332	U
83	0605221F	KC-46	05	1,550,289	1,558,590		1,558,590	776,937	U
84	0605223F	Advanced Pilot Training	05					8,201	U
85	0605229F	CSAR HH-60 Recapitalization	05	32,787	333,558		333,558		U
86	0605278F	HC/MC-130 Recap RDT&E	05	10,548	2,611		2,611	7,497	U
87	0605431F	Advanced EHF MILSATCOM (SPACE)	05		265,634		265,634	314,378	U
88	0605432F	Polar MILSATCOM (SPACE)	05		104,582		104,582	103,552	U
89	0605433F	Wideband Global SATCOM (SPACE)	05		12,489		12,489	31,425	U
90	0605458F	Air & Space Ops Center 10.2 RDT&E	05					85,938	U
91	0605931F	B-2 Defensive Management System	05	249,685	257,500		257,500	98,768	U
92	0101125F	Nuclear Weapons Modernization	05	62,373	33,000		33,000	198,357	U
93	0207604F	Readiness Training Ranges, Operations and Maintenance	05	285					U
94	0207701F	Full Combat Mission Training	05	13,089	4,663		4,663	8,831	U
95	0307581F	NextGen JSTARS	05					73,088	U
96	0401318F	CV-22	05	19,741	46,705		46,705		U
		System Development & Demonstration		4,355,237	4,516,611		4,516,611	3,337,419	
97	0604256F	Threat Simulator Development	06	22,348	14,841		14,841	24,418	U
98	0604759F	Major T&E Investment	06	33,968	32,341		32,341	47,232	U
99	0605101F	RAND Project Air Force	06	28,132	32,956		32,956	30,443	U
100	0605502F	Small Business Innovation Research	06	318,816					U

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101	0605712F	Initial Operational Test & Evaluation	06	14,609	10,572		10,572	12,266	U
102	0605807F	Test and Evaluation Support	06	670,586	722,658		722,658	689,509	U
103	0605860F	Rocket Systems Launch Program (SPACE)	06	15,406	12,755		12,755	34,364	U
104	0605864F	Space Test Program (STP)	06	39,012	11,642		11,642	21,161	U
105	0605976F	Facilities Restoration and Modernization - Test and Evaluation Support	06	38,854	44,160		44,160	46,955	U
106	0605978F	Facilities Sustainment - Test and Evaluation Support	06	24,986	27,643		27,643	32,965	U
107	0606017F	Requirements Analysis and Maturation	06					13,850	U
108	0606116F	Space Test and Training Range Development	06					19,512	U
109	0606323F	Multi-Service Systems Engineering Initiative	06	12,367	6,908		6,908		U
110	0606392F	Space and Missile Center (SMC) Civilian Workforce	06	168,940	172,661		172,661	181,727	U
111	0308602F	ENTEPRISE INFORMATION SERVICES (EIS)	06					4,938	U
112	0702806F	Acquisition and Management Support	06	27,457	21,221		21,221	18,644	U
113	0804731F	General Skill Training	06		315		315	1,425	U
114	1001004F	International Activities	06	3,376	3,785		3,785	3,790	U
		Management Support		1,418,857	1,114,458		1,114,458	1,183,199	
115	0603423F	Global Positioning System III - Operational Control Segment	07	309,566	373,062		373,062	299,760	U
116	0604445F	Wide Area Surveillance	07		5,000		5,000		U
118	0604618F	Joint Direct Attack Munition	07					2,469	U
119	0605018F	AF Integrated Personnel and Pay System (AF-IPPS)	07	40,088	34,034		34,034	90,218	U
120	0605024F	Anti-Tamper Technology Executive Agency	07	30,413	26,541		26,541	34,815	U
122	0101113F	B-52 Squadrons	07	17,951	17,007		17,007	55,457	U

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123	0101122F	Air-Launched Cruise Missile (ALCM)	07	322	450		450	450	U
124	0101126F	B-1B Squadrons	07	13,126	12,774		12,774	5,353	U
125	0101127F	B-2 Squadrons	07	29,805	87,810		87,810	131,580	U
126	0101213F	Minuteman Squadrons	07					139,109	U
127	0101313F	Strat War Planning System - USSTRATCOM	07	20,452	31,325		31,325	35,603	U
128	0101314F	Night Fist - USSTRATCOM	07					32	U
130	0102326F	Region/Sector Operation Control Center Modernization Program	07	4,161	1,624		1,624	1,522	U
131	0105921F	Service Support to STRATCOM - Space Activities	07					3,134	U
132	0203761F	Warfighter Rapid Acquisition Process (WRAP) Rapid Transition Fund	07	4,416					U
133	0205219F	MQ-9 UAV	07	130,882	107,338		107,338	170,396	U
134	0207040F	Multi-Platform Electronic Warfare Equipment	07	39,250					U
135	0207131F	A-10 Squadrons	07	12,347	9,614		9,614		U
136	0207133F	F-16 Squadrons	07	155,152	112,667		112,667	133,105	U
137	0207134F	F-15E Squadrons	07	145,035	234,289		234,289	261,969	U
138	0207136F	Manned Destructive Suppression	07	13,362	11,022		11,022	14,831	U
139	0207138F	F-22A Squadrons	07	326,012	274,407		274,407	156,962	U
140	0207142F	F-35 Squadrons	07		3,000		3,000	43,666	U
141	0207161F	Tactical AIM Missiles	07	5,972	12,760		12,760	29,739	U
142	0207163F	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	68,656	70,614		70,614	82,195	U
143	0207170F	Joint Helmet Mounted Cueing System (JHMCS)	07	1,428					U
144	0207171F	F-15 EPAWSS	07					68,944	U

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145	0207224F	Combat Rescue and Recovery	07	1,910	2,582		2,582	5,095	U
146	0207227F	Combat Rescue - Pararescue	07	992	350		350	883	U
147	0207247F	AF TENCAP	07	58,514	89,816		89,816	5,812	U
148	0207249F	Precision Attack Systems Procurement	07	1,029	2,000		2,000	1,081	U
149	0207253F	Compass Call	07	10,733	10,745		10,745	14,411	U
150	0207268F	Aircraft Engine Component Improvement Program	07	114,802	89,369		89,369	109,664	U
151	0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	07	7,095	6,373		6,373	15,897	U
152	0207410F	Air & Space Operations Center (AOC)	07	70,925	22,332		22,332	41,066	U
153	0207412F	Control and Reporting Center (CRC)	07	8,960	6,993		6,993	552	U
154	0207417F	Airborne Warning and Control System (AWACS)	07	47,171	148,369		148,369	180,804	U
155	0207418F	Tactical Airborne Control Systems	07	5,582	743		743	3,754	U
157	0207431F	Combat Air Intelligence System Activities	07	5,275	4,471		4,471	7,891	U
158	0207444F	Tactical Air Control Party-Mod	07	14,444	10,223		10,223	5,891	U
159	0207448F	C2ISR Tactical Data Link	07	1,447	1,406		1,406	1,782	U
160	0207449F	Command and Control (C2) Constellation	07	13,938	7,160		7,160		U
161	0207452F	DCAPES	07	13,925	10,111		10,111	821	U
162	0207581F	Joint Surveillance/Target Attack Radar System (JSTARS)	07	23,566	23,148		23,148		U
163	0207590F	Seek Eagle	07	20,451	22,386		22,386	23,844	U
164	0207601F	USAF Modeling and Simulation	07	14,147	8,734		8,734	16,723	U
165	0207605F	Wargaming and Simulation Centers	07	5,071	5,512		5,512	5,956	U
166	0207697F	Distributed Training and Exercises	07	2,833	3,301		3,301	4,457	U

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167	0208006F	Mission Planning Systems	07	64,035	62,432		62,432	60,679	U
168	0208021F	Information Warfare Support	07	6,373					U
169	0208059F	Cyber Command Activities	07	59,342	38,099		38,099	67,057	U
170	0208087F	AF Offensive Cyberspace Operations	07		14,047		14,047	13,355	U
171	0208088F	AF Defensive Cyberspace Operations	07		5,853		5,853	5,576	U
179	0301400F	Space Superiority Intelligence	07	17,434	10,697		10,697	12,218	U
180	0302015F	E-4B National Airborne Operations Center (NAOC)	07	2,222	13,250		13,250	28,778	U
181	0303131F	Minimum Essential Emergency Communications Network (MEECN)	07	19,509	18,481		18,481	81,035	U
182	0303140F	Information Systems Security Program	07	60,837	74,530		74,530	70,497	U
183	0303141F	Global Combat Support System	07	3,094	725		725	692	U
184	0303150F	Global Command and Control System	07	2,082					U
185	0303601F	MILSATCOM Terminals	07	106,338	129,829		129,829	55,208	U
187	0304260F	Airborne SIGINT Enterprise	07	105,737	100,172		100,172	106,786	U
190	0305099F	Global Air Traffic Management (GATM)	07	4,390	4,027		4,027	4,157	U
191	0305103F	Cyber Security Initiative	07	1,900	2,048		2,048		U
192	0305105F	DoD Cyber Crime Center	07	254	288		288		U
193	0305110F	Satellite Control Network (SPACE)	07	30,944	35,657		35,657	20,806	U
194	0305111F	Weather Service	07	25,868	20,643		20,643	25,102	U
195	0305114F	Air Traffic Control, Approach, and Landing System (ATCALS)	07	36,427	32,894		32,894	23,516	U
196	0305116F	Aerial Targets	07	41,040	17,773		17,773	8,639	U
199	0305128F	Security and Investigative Activities	07	343	195		195	498	U

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200	0305145F	Arms Control Implementation	07	3,666	1,430		1,430	13,222	U
201	0305146F	Defense Joint Counterintelligence Activities	07		10		10	360	U
203	0305164F	NAVSTAR Global Positioning System (User Equipment) (SPACE)	07	26,011					U
204	0305165F	NAVSTAR Global Positioning System (Space and Control Segments)	07	12,436					U
206	0305173F	Space and Missile Test and Evaluation Center	07	3,188	3,696		3,696	3,674	U
207	0305174F	Space Innovation, Integration and Rapid Technology Development	07	2,149	2,469		2,469	2,480	U
208	0305179F	Integrated Broadcast Service (IBS)	07		6,954		6,954	8,592	U
209	0305182F	Spacelift Range System (SPACE)	07	7,808	12,312		12,312	13,462	U
210	0305202F	Dragon U-2	07	21,670	13,700		13,700	5,511	U
211	0305205F	Endurance Unmanned Aerial Vehicles	07	74,126	1,000		1,000		U
212	0305206F	Airborne Reconnaissance Systems	07	88,199	47,155		47,155	28,113	U
213	0305207F	Manned Reconnaissance Systems	07	12,205	13,491		13,491	13,516	U
214	0305208F	Distributed Common Ground/Surface Systems	07	43,580	6,321		6,321	27,265	U
215	0305219F	MQ-1 Predator A UAV	07	9,110	760		760	1,378	U
216	0305220F	RQ-4 UAV	07	240,234	120,180		120,180	244,514	U
217	0305221F	Network-Centric Collaborative Targeting	07	6,752	7,413		7,413	11,096	U
218	0305236F	Common Data Link (CDL)	07	33,630	33,899		33,899	36,137	U
219	0305238F	NATO AGS	07	192,571	221,589		221,589	232,851	U
220	0305240F	Support to DCGS Enterprise	07	22,454	19,309		19,309	20,218	U
221	0305265F	GPS III Space Segment	07	281,880	200,984		200,984	212,571	U
222	0305614F	JSPOC Mission System	07	52,974	56,523		56,523	73,779	U

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Line No	Program Element Number	Item	Act	FY 2013 (Base & OCO)	FY 2014 Base Enacted	FY 2014 OCO Enacted	FY 2014 Total Enacted	FY 2015 Base	Sec
223	0305881F	Rapid Cyber Acquisition	07	1,790	2,218		2,218	4,102	U
224	0305887F	Intelligence Support to Information Warfare	07	11,847					U
225	0305913F	NUDET Detection System (SPACE)	07	58,074	42,506		42,506	20,468	U
226	0305940F	Space Situation Awareness Operations	07	16,730	12,684		12,684	11,596	U
227	0306250F	Cyber Operations Technology Development	07					4,938	U
228	0308699F	Shared Early Warning (SEW)	07	1,077	1,060		1,060	1,212	U
229	0401115F	C-130 Airlift Squadron	07	14,929	47,700		47,700		U
230	0401119F	C-5 Airlift Squadrons (IF)	07	12,220	48,617		48,617	38,773	U
231	0401130F	C-17 Aircraft (IF)	07	76,569	97,134		97,134	83,773	U
232	0401132F	C-130J Program	07	18,322	22,443		22,443	26,715	U
233	0401134F	Large Aircraft IR Countermeasures (LAIRCM)	07	6,954	4,116		4,116	5,172	U
234	0401219F	KC-10s	07	18,450				2,714	U
235	0401314F	Operational Support Airlift	07	17,521	38,538		38,538	27,784	U
236	0401318F	CV-22	07					38,719	U
237	0401319F	Presidential Aircraft Replacement (PAR)	07					11,006	U
238	0408011F	Special Tactics / Combat Control	07	4,461	6,174		6,174	8,405	U
239	0702207F	Depot Maintenance (Non-IF)	07	1,455	1,605		1,605	1,407	U
240	0708012F	Logistics Support Activities	07	451					U
241	0708610F	Logistics Information Technology (LOGIT)	07	27,070	60,410		60,410	109,685	U
242	0708611F	Support Systems Development	07	13,945	10,912		10,912	16,209	U
243	0804743F	Other Flight Training	07	319	1,347		1,347	987	U

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244	0808716F	Other Personnel Activities	07		65		65	126	U
245	0901202F	Joint Personnel Recovery Agency	07	1,790	1,083		1,083	2,603	U
246	0901218F	Civilian Compensation Program	07	2,564	1,577		1,577	1,589	U
247	0901220F	Personnel Administration	07	2,348	5,990		5,990	5,026	U
248	0901226F	Air Force Studies and Analysis Agency	07	599	786		786	1,394	U
249	0901279F	Facilities Operation - Administrative	07	2,805	654		654	3,798	U
250	0901538F	Financial Management Information Systems Development	07	79,179	108,161		108,161	107,314	U
9999	9999999999	Classified Programs		10,331,389	11,021,460	9,000	11,030,460	11,441,120	U
		Operational Systems Development		14,256,876	14,789,537		14,798,537	15,717,666	
Total Research, Development, Test & Eval, AF				23,163,315	23,571,637		23,580,637	23,739,892	

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Appropriation 3600: Research, Development, Test & Evaluation, Air Force

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Fiscal Year (FY) 2015 Budget Estimates
RDT&E Descriptive Summaries
Budget Activities
March 2014

INTRODUCTION AND EXPLANATION OF CONTENTS

1. (U) GENERAL
   A. 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 FY 2015 President's Budget (PB).
      1) All exhibits in this document have been assembled in accordance with DoD 7000.14R, Financial Management Regulation, Volume 2B, Chapter 5, Section 050402. Exception:
         a) Exhibit R-1, RDT&E Program, which was distributed under a separate cover due to classification.
      2) Other comments on exhibit contents in this document:
         a) Exhibits R-2/2a and R-3 provide narrative information for all RDT&E program elements and projects within the USAF FY 2015 RDT&E program with the exception of classified program elements. The format sand contents of this document are in accordance to the guidelines and requirements of the Congressional committees in so far as possible.
         b) The "Other Program Funding Summary portion of the R-2 includes, in addition to RDTE& 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.

2. (U) CLASSIFICATION
   A. 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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In the Fiscal Year (FY) 2015 Budget Estimates

RDT&E Exhibits in Budget Activity 7

are split into two books:

Vol-III Part 1

Vol-III Part 2

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The following Program Elements are not providing RDT&E exhibits due to classification:

0101815F	ADVANCED STRATEGIC PROGRAM
0207424F	EVALUATION AND ANALYSIS PROGRAM
0208161F	SPECIAL EVALUATION SYSTEM
0208162F	ADVANCED TECHNOLOGY PROGRAM
0301310F	NATIONAL AIR INTELLIGENCE CENTER
0301314F	COBRA BALL
0301315F	MISSILE AND SPACE TECHICAL COLLECTION
0301324F	FOREST GREEN
0301386F	GDIP COLLECTION MANAGEMENT
0304111F	SPECIAL ACTIVITES
0304311F	SELECTED ACTIVITIES
0304348F	ADVANCED GEOSPATIAL INTELLIGENCE (AGI)
0305124F	SPECIAL APPLICATIONS PROGRAM
0305127F	FOREIGN COUNTERINTELLIGENCE ACTIVITES
0305159F	DEFENSE RECONNAISSANCE SUPPORT ACTIVITIES
0305172F	COMBINED ADVANCED APPLICATIONS
0605798F	ANALYSIS SUPPORT GROUP

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PROGRAM ELEMENT COMPARISON SUMMARY

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

Remarks

BUDGET ACTIVITY #1: BASIC RESEARCH (Volume 1)

None

BUDGET ACTIVITY #2: APPLIED RESEARCH (Volume 1)

0602201F	AEROSPACE VEHICLE TECHNOLOGIES	In FY 2015, Project 622405 is a new start.

BUDGET ACTIVITY #3: ADVANCED TECHNOLOGY DEVELOPMENT (Volume 1)

0603211F	AEROSPACE TECHNOLOGY DEV/DEMO	In FY 2015, Project 634926 is a new start; efforts transferred from Project 634920, Flight Vehicle Technology Integration, to support DoD priorities in hypersonics demonstration.

BUDGET ACTIVITY #4: ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPE (Volume 2)

0207110F	NEXT GENERATION AIR DOMINANCE	In FY 2015, a new BPAC 646007 2030+ Air Dominance AOS is an FY15 New Start.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

0603260F	INTELLIGENCE ADVANCED DEVELOPMENT	In FY 2015, Project Number 64537A, Intelligence Analysis Capabilities (IAC), efforts transferred from PE 0603260F (BA5), Intelligence Advanced Development (IAD), Project Number 652053, National Air Intelligence Center, in order to properly align efforts, increase management efficiency, and reduce administrative actions. In FY 2015, Project Number 643479 Advanced Sensor Exploitation, Project Number 643480 Automated Imagery Exploitation, Project Number 643481 Knowledge Based Tech for Intelligence, and Project Number 643482 Science & Tech Intelligence Methodology, transferred to Project Number 64536A, IET, in order to increase management efficiency, reduce administrative actions, and minimize effort duplication. In FY 2015, Project Number 64536A, Intelligence Exploitation Tools (IET), transferred from PE 0603260F Intelligence Advanced Development (IAD), Project Number 643479 Advanced Sensor Exploitation, Project Number 643480 Automated Imagery Exploitation, Project Number 643481 Knowledge Based Tech for Intelligence, and Project Number 643482 Science & Tech Intelligence Methodology, in order to increase management efficiency, reduce administrative actions, and minimize activity duplication. In FY 2015, Project Number 64536A, Intelligence Exploitation Tools (IET), includes four new start efforts: Private Assistant for Individual Relegation (PAIR), Feature and Pattern Recognition and Parsing to Text- Foreign Audio Video Operations (FAVOR) II, Increased SIGINT On-Board Analysis (ISOBA), and Global Architecture for Mission Reporting and Analysis (GAMRA). In FY 2015, Project Number 64537A, Intelligence Analysis Capabilities (IAC), efforts were transferred from PE 0603260F, Intelligence Advanced Development (IAD), Project Number 652053, National Air Intel Center, in order to increase management efficiency, reduce administrative actions, and minimize activity duplication. In FY 2015, Project Number 64537A, IAC, includes a new start effort: Activity Based Intelligence Indications & Warning.
0603287F	PHYSICAL SECURITY EQUIPMENT	In FY 2015, Physical Security Equipment efforts were transferred from PE 0603287F, Physical Security Equipment, Project Number 645121 in BA04 to PE 0604287F, Physical Security Equipment, Project Number 645121 in BA05 in order to align funding into the correct Budget Activity of BA05.
0603438F	SPACE CONTROL TECHNOLOGY	In FY 2015, Project 64A007 Space Range efforts were transferred to PE 0606116F, Space Test and Training Range Development.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

0603851F	INTERCONTINENTAL BALLISTIC MISSILE - DEM/VAL	In FY 2015, Project 641022, ICBM Reentry Vehicle Applications is a new start. In FY 2015, Project 641024, ICBM Command & Control (C2) Applications is a new start. In FY 2015, Project 644209, Long Range Planning is a new start.
0604283F	BATTLE MGMT COM & CTRL SENSOR DEVELOPMENT	In FY 2015, Project 645363, MP-RTIP efforts were transferred to PE 0307581F, NextGen JSTARS, Project 650003, JSTARS Recapitalization, in order to consolidate efforts and continue development of the JSTARs Recap.
0604337F	REQUIREMENTS ANALYSIS AND MATURATION	In FY 2015, Project 645349 Developmental Planning efforts were transferred to PE 0606017F Project 666157 Development Planning to improve alignment with the budget activity.
0604422F	WEATHER SYSTEM FOLLOW-ON	In FY 2015, the Weather System Follow-on (WSF) Project 644289, is a New Start.
0105921F	SERVICE SUPPORT TO STRATCOM - SPACE ACTIVITIES	In FY 2015, Project 643833 Joint NavWar Center (JNWC) Space Activities, efforts were transferred to PE 0105921F Service Support to STRATCOM - Space Activities, Project 672486 Joint NAVWAR Center in order to align efforts with Budget Activity 7, Operational System Development.
0604458F	AIR & SPACE OPS CENTER	In FY 2015, PE 0604458F Air & Space Ops Center, Project 644945, AOC Increment 10.2 development efforts were transferred to PE 0605458F, Air & Space Ops Center 10.2, Project 654945, AOC 10.2 Development, in order to align post Milestone B development efforts with Budget Activity 05, System Development & Demonstration (SDD).
0604618F	JOINT DIRECT ATTACK MUNITION	In FY 2015, PE 0604618F transitioned from BA04 to BA07.
0604635F	GROUND ATTACK WEAPONS FUZE DEVELOPMENT	In FY 2015, 645312, Hard Target Void Sensing Fuze, efforts were transferred to PE 0605214F, Ground Attack Weapons Fuze Development, 655313, Hard Target Void Sensing Fuze, in order to properly align efforts with Budget Activity, BA05, System Development & Demonstration (SDD)
0604800F	F-35 - EMD	In FY 2015, the funding in this line was inadvertently loaded into BA04. The Air Force plans to execute the funding in BA05 if appropriated. Refer to Budget Activity 05 PE 0604800F, F-35 - EMD, for justification for this funding.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

BUDGET ACTIVITY #5: SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD) (Volume 2)

0307581F	NEXTGEN JSTARS	In FY 2015, Project 650003, JSTARS Recapitalization efforts were transferred from PE 0604283F, BMC2 Sensor Development, Project 645363, MP-RTIP, in order to consolidate efforts and continue development of the JSTARs Recap. This is a new start. In FY 2015, Project 650003, JSTARS Recapitalization efforts were transferred from PE 0207581F, Joint Surveillance/Target Attack Radar System (JSTARS), Project 670003, JSTARS, in order to consolidate efforts and continue development of the JSTARs Recap.
0401318F	CV-22	In FY 2015, Project 654103 CV-22, efforts were transferred to PE 0401318F, CV-22, Project 676033 CV-22 RDT&E Post Production in order to align efforts in Budget Activity 07, Operational System Development, since CV-22 has been fielded.
0603260F	INTELLIGENCE ADVANCED DEVELOPMENT	In FY 2015, Project Number 652053, National Air Intelligence Center, efforts transferred to PE 0603260F (BA4), Intelligence Advanced Development (IAD), Project Number 64537A, Intelligence Analysis Capabilities (IAC), in order to increase management efficiency, reduce administrative actions, and minimize activity duplication.
0604233F	SPECIALIZED UNDERGRADUATE FLIGHT TRAINING	In FY 2015, Project 655340, Advanced Trainer Replacement T-X, efforts were transferred to Program Element 0605223F, Advanced Pilot Training, Project 655340, Advanced Trainer Replacement T-X, to improve transparency on ACAT I acquisition programs.
0604287F	PHYSICAL SECURITY EQUIPMENT	In FY 2015, Physical Security Equipment efforts were transferred from PE 0603287F, Physical Security Equipment, Project Number 645121 in BA04 to PE 0604287F, Physical Security Equipment, Project Number 645121 in BA05 in order to align funding into the correct Budget Activity of BA05.
0604425F	SPACE SITUATION AWARENESS SYSTEMS	In FY 2015, Project 65A009 Space Fence efforts were transferred to PE 0604426F.
0604426F	SPACE FENCE	In FY 2015, Project 65A009, Space Fence efforts were transitioned from PE 0604425F - Space Situational Awareness Systems, Project 65A009 in order to improve transparency for ACAT I acquisition programs.
0604617F	AGILE COMBAT SUPPORT	In FY 2015, Project 652895, CE Readiness, includes a New Start for Airfield Protection. In FY 2015, Project 654910, Aeromedical Readiness, includes a New Start for Non-Invasive Warming and Cooling Device (NIWCD).

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

0604800F	F-35 - EMD	In FY 2015, $4.976M of FY15 and $4.979M of FY16 funding for this effort was inadvertently loaded into BA04. If appropriated the Air Force plans to execute the funding in BA05.
0604851F	INTERCONTINENTAL BALLISTIC MISSILE - EMD	In FY 2015, Project 655037, Support Equipment, efforts were transferred to PE 0101213F, Minuteman Squadrons, Project 672985, MM Support Equip, and Project 672984, MM III Baseline Support in order to consolidate ICBM investment activities under a common PE. In FY 2015, Project 655081, ICBM Crypto, efforts were transferred to PE 0101213F, Minuteman Squadrons, Project 672986, MM Crypto Mods in order to consolidate ICBM investment activities under a common PE
0604932F	LONG RANGE STANDOFF WEAPON	In FY 2015, the LRSO program was delayed three years for higher Air Force priorities.
0605030F	JOINT TACTICAL NETWORK CENTER (JNTC)	In FY 2015, Project 655068, Joint Tactical Radio System, efforts were transferred from PE 0604280F Joint Tactical Radio System (JTRS), Project 655068, Joint Tactical Radio System, to in order to improve transparency of ACAT 1 Acquisition programs.
0605214F	GROUND ATTACK WEAPONS FUZE DEVELOPMENT	In FY 2015, 655313, Hard Target Void Sensing Fuze, efforts were transferred from PE 0604635F, Ground Attack Weapons Fuze Development, 645312, Hard Target Void Sensing Fuze, in order to properly align the funds in the correct Budget Activity, BA05, which supports Engineering, Manufacturing, and Development (EMD).
0605223F	ADVANCED PILOT TRAINING	In FY2015, Project 655340, Advanced Trainer Replacement T-X, efforts were transferred from Program 0604233F, Specialized Undergraduate Flight Training, Project 655340, Advanced Trainer Replacement T-X, in order to improve transparency of ACAT I acquisition programs.
0605433F	WIDEBAND GLOBAL SATCOM (SPACE)	In FY 2015, Project 657107, WGS Space Systems Resiliency Upgrade, is a New Start.
0605458F	AIR & SPACE OPS CENTER 10.2 RDT&E	In FY 2015, PE 0605458F, Air & Space Ops Center 10.2, project 654945, AOC 10.2 Development, efforts were transferred from PE 0604458F, Air & Space Ops Center, project 644945, AOC Increment 10.2 development, in order to align post Milestone B development efforts with funding in RDT&E Budget Activity 05, System Development & Demonstration (SDD).

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

BUDGET ACTIVITY #6: RDT&E MANAGEMENT SUPPORT (Volume 2)

0308602F	ENTEPRISE INFORMATION SERVICES (EIS)	In FY 2015, project 675046 Systems Engineering & Integration, efforts were transferred from PE 0303141F, Global Combat Support Systems (GCSS) to project 66ACSI, Acquisition and Command Support (ACSI), PE 0308602F, Enterprise Information Services (EIS), in order to provide better visibility of costs associated with evolution to Common Computing Environment (CCE).
0606017F	REQUIREMENTS ANALYSIS AND MATURATION	In FY 2015, Project 666157 Developmental Planning efforts were transferred from PE 0604337F Project 645349 Development Planning to improve alignment with the budget activity.
0606116F	SPACE TEST AND TRAINING RANGE DEVELOPMENT	In FY 2015, Project 666156 Space Test and Training Range Development efforts were transferred from PE 0603438F, Space Test and Training Range Development Project 64A007 Space Range to improve alignment with budget activity.
0606323F	MULTI-SERVICE SYSTEMS ENGINEERING INITIATIVE	In FY 2015, Project 668101, MSSE and JIAMD Capability Initiative, was terminated. Per the Ballistic Missile Defense System (BMDS) Acquisition Decision Memorandum (ADM) of 8 May 2013, the Missile Defense Agency (MDA) assumed technical authority responsibility of air and missile defense integration activities.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

BUDGET ACTIVITY #7: OPERATIONAL SYSTEMS DEVELOPMENT (Volume 3)

0101213F MINUTEMAN SQUADRONS

In FY 2015, Project 672983, Minuteman (MM) Ground and Comm Equipment includes new start efforts for Automatic Switching Unit (ASU), Ultra-High Frequency (UHF) Receiver, and Launch Control Center (LCC) Block Upgrades.

In FY 2015, Project 672984, MM III Baseline Support includes new start efforts for Modular Mechanical Ordnance Destruct System (MMODS), Ground Test Upgrades, and Baseline Support.

In FY 2015, Project 672984, MM III Baseline Support, efforts were transferred from PE 0604851F, Intercontinental Ballistic Missile (ICBM) - Engineering Manufacturing Development (EMD), Project 655037, Support Equipment, in order to consolidate ICBM investment efforts under a common PE. Specific efforts transferred include the Instrumentation Wafer Replacement Program and Signal Conditioner Monitor. These programs were consolidated into the MM III Instrumentation Wafer Replacement Program (MMIWRP).

In FY 2015, Project 672985, MM Support Equipment includes new start effort for the Re-Entry Support Equipment Replacement (RSERP).

In FY 2015, Project 672985, MM Support Equip, efforts were transferred from PE 0604851F, ICBM - EMD, Project 655037, Support Equipment, in order to consolidate ICBM investment efforts under a common PE. Specific efforts transferred include the Reentry Field Support Equipment (RFSE), Code System Media (CSM), Reentry Support Equipment Replacement Program (RSERP), Strategic Targeting Applications Computer System (STACS), and Transporter Erector Replacement Program (TERP).

In FY 2015, Project 672986, MM Crypto Mods efforts were transferred from PE 0604851F, ICBM - EMD, Project 655081, ICBM Crypto in order to consolidate ICBM investment efforts under a common PE. Specific efforts transferred include the ICBM Crypto Unit II (ICU II).

In FY 2015, Project 672987, MM Ops Equip includes new start effort for Guidance Modernization.

In FY 2015, Project 672987, MM Ops Equip, Solid Rocket Motor Modernization (SRMM) efforts transferred from PE 0604851F, ICBM - EMD, Project 657010, Ops Equipment.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

0105921F	SERVICE SUPPORT TO STRATCOM - SPACE ACTIVITIES	In FY 2015, Project 672486 Joint NAVWAR Center (JNWC) Space Activities, efforts were transferred from PE 0105921F Service Support to STRATCOM - Space Activities, Project 643833 Joint NavWar Center in order to align efforts with Budget Activity 7, Operational System Development.
0203761F	WARFIGHTER RAPID ACQUISITION PROCESS (WRAP) RAPID TRANSITION FUND	In FY 2015, Project 674936, Warfighter Rapid Acquisition Program, was terminated.
0207131F	A-10 SQUADRONS	In FY 2015, efforts in Project number 674809, were completed. The entire A-10 fleet is planned for divestiture beginning In FY 2015.
0207133F	F-16 SQUADRONS	In FY 2015, Combat Aviation Programmed Extension Suite (CAPES) is terminated.
0207134F	F-15E SQUADRONS	In FY 2015, Infrared Search and Track (IRST) is a new start. In FY 2015, PE 0207134F Project 670131 Initial Operation Test and Evaluation, EPAWSS efforts were transferred to PE 0207171F Project 676038 EPAWSS.
0207138F	F-22A SQUADRONS	In FY15, Project 674785 efforts transferred to Project 674788 F-22 Tactical Mandates, formerly known as F-22 Mandates.
0207142F	F-35 SQUADRONS	In FY 2015, BPAC 676011, JSF DUAL CAPABLE AIRCRAFT is a new start.
0207171F	F-15 EPAWSS	In FY 2015, Project 676038 EPAWSS efforts were transferred from PE 0207134F Project 670131 Initial Operation Test and Evaluation.
0207410F	AIR AND SPACE OPERATIONS CENTER (AOC)	In FY 2015, PE 0604458F Air & Space Ops Center project 644945 AOC Increment 10.2 development efforts were transferred to PE 0605458F Air & Space Ops Center 10.2 RDT&E project 654945 AOC 10.2 Development, to align post Milestone B development efforts with funding in RDT&E Budget Activity 05, System Development & Demonstration (SDD).
0207449F	COMMAND AND CONTROL (C2) CONSTELLATION	In FY 2015, Project 675078, Horizontal Integration (HI), was terminated.

PROGRAM ELEMENT (BY BUDGET ACTIVITY)

0207581F	JOINT SURVEILLANCE/TARGET ATTACK RADAR SYSTEM (JSTARS)	In FY 2015, Project 670003, JSTARS efforts were transferred to PE 0307581F, NextGen JSTARS, Project 650003, JSTARS Recapitalization , in order to consolidate efforts and continue development of the JSTARs Recap.
0303141F	GLOBAL COMBAT SUPPORT SYSTEM	In FY 2015, components of project 675046, Systems Engineering & Integration, efforts were transferred from PE 0303141F, Global Combat Support Systems (GCSS) to project 66ACSI, ACSI, PE 0308602F, Enterprise Information Services, in order to provide better visibility of costs associated with evolution to a Common Computing Environment (CCE).
0305205F	ENDURANCE UNMANNED AERIAL VEHICLES	In FY 2015, 675372, Integrated Sensor is Structure, was completed.
0306250F	CYBER OPERATIONS TECHNOLOGY DEVELOPMENT	In FY 2015, Project Number 676002, Cyber Systems Modernization, is a new start.
0401132F	C-130J PROGRAM	In FY 2015, the Project 675062 C-130J Trainers completes.
0401314F	OPERATIONAL SUPPORT AIRLIFT	In FY 2015 and beyond, Project 675355 Presidential Aircraft Recapitalization efforts will be executed in PE0401319F, Project 655250, Presidential Aircraft Recap in order to improve transparency for ACAT I acquisition programs.
0401318F	CV-22	In FY 2015, PE 0401318F, Project 654103 CV-22, efforts were transferred to PE 0401318F, CV-22, Project 676033 CV-22 RDT&E Post Production in order to align efforts in Budget Activity 07, Operational System Development, since the CV-22 has been fielded.
0401319F	PRESIDENTIAL AIRCRAFT REPLACEMENT (PAR)	In FY 2015, Project 655250 Presidential Aircraft Recap efforts were transferred from PE 0401314F, Project 675355, Presidential Aircraft Recapitalization in order to improve transparency for ACAT I acquisition programs.
0604618F	JOINT DIRECT ATTACK MUNITION	In FY 2015, Project 674138 JDAM Development efforts were transferred from Budget Activity 4.
0901538F	FINANCIAL MANAGEMENT INFORMATION SYSTEMS DEVELOPMENT	In FY 2015, Project 675178 DEAMS Inc 2 is a new start.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	1,696.500	309.566	373.062	299.760	-	299.760	282.138	212.374	118.298	120.550	83.139	3,495.387
67A021: *OCX*	1,696.500	265.729	313.240	236.608	-	236.608	220.491	149.355	54.046	55.075	31.843	3,022.887
67A025: *GPS Enterprise Integrator*	0.000	43.837	59.822	63.152	-	63.152	61.647	63.019	64.252	65.475	51.296	472.500
MDAP/MAIS Code: 456												

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space based positioning, navigation and timing distribution system, which operates through all weather. GPS supports both civil and military users in air, space, sea and land operations. GPS is a satellite-based radio navigation system that serves military and civil users worldwide. GPS users process satellite signals to determine accurate position, velocity and time. GPS must comply with 10 United States Code (USC) sec 2281 which requires that the Secretary of Defense ensures the continued sustainment and operation of GPS for military and civilian purposes and 51 USC sec 50112, which requires that GPS complies with certain standards and facilitates international cooperation.

This Program Element (PE) funds the Research & Development (R&D) for the GPS next generation operational control system (OCX) and the GPS Enterprise Integrator (EI). This includes advanced concept development, systems analysis, modernized control segment development, mission planning development, training simulators, integrated logistics support products, developmental test resources, systems engineering required to meet the government's obligations to the international, military and civil communities, and system requirements verification. OCX acquisition was established to 1) provide command and control of legacy and GPS III satellites, 2) incorporate situational awareness to support Navigation Warfare (Navwar) and signal monitoring, 3) enable mission capability upgrades to support warfighter effects-based approach to operations and 4) integrate DoD information assurance controls and capabilities. GPS Enterprise Integrator is responsible for architecture and system definition (the analysis and definition, management, maintenance, and evolution of the GPS Enterprise requirements and interface technical documents) as well as for the planning, execution, and fielding of the GPS Enterprise.

OCX funds will support efforts such as engineering studies and analyses, architectural engineering studies, trade studies, technology needs forecasting, modernization initiatives, systems engineering, system development, test and evaluation efforts and mission operations in support of upgrades and product improvements for military and civil applications necessary to support efforts to protect U.S. military and allies' use of GPS. Additionally, funds will ensure efforts to meet current and future Joint Requirements Oversight Council approved required capabilities.

GPS supports both military and civil users in air, space, sea and land operations. The GPS Enterprise consists of Space, Ground Control, Nuclear Detonation (NUDET) Detection System (NDS) and User Equipment Segments. The government is responsible for the integration of the GPS Segments such that they provide worldwide GPS capability to support the warfighter and over a billion national security, civil, allied, and commercial GPS users.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*

The GPS Enterprise Integrator project includes the efforts associated with the Government's prime contract tasks necessary to accomplish this critical integrating function with the entire GPS user community. The Enterprise Integrator maintains the GPS current architecture and system definition, controls and validates interfaces, ensures compatibility of Generation II and III systems, and develops/manages plans for execution and fielding of the GPS Enterprise. Further, the Enterprise Integrator provides modeling, simulation and technical analyses of impacts for Government-directed enterprise-level trades among the GPS segments leading to definition, management, maintenance, and evolution of the GPS Enterprise requirements and interface technical documents to build and ensure the integrity of the enterprise technical baseline, and perform system requirements verification.

In addition, the GPS Enterprise Integrator project funds the technical evolution, risk reduction, enterprise-level testing and delivery of all GPS Enterprise capabilities. Examples for Generation II include electronic protection and additional civil signals; for Generation III, additional anti-jamming protection. To accomplish this, the GPS Enterprise Integrator delivers Test and Verification capabilities, Requirements and Interface Management, and Systems Integration support across the Space, Control, and User Segments. In this capacity, the Enterprise Integrator is responsible for managing this cross-program work to provide these and other capabilities. GPS Enterprise Integrator's analyses guide government decisions to ensure efficient and effective synchronization and execution across all Generation II and III GPS programs. For Enterprise-wide integration to be successful, the Integrator: works with the GPS and NDS prime contractor teams to develop plans for early risk reduction System Integration Demonstrations to ensure system interfaces and functionality meet user and system requirements; ensures all equipment and documentation is ready when needed; integrates and analyzes enterprise schedules, conducts formal test and verification, including Requirement Verification Plans; and System Test Plans and Procedures. GPS Enterprise Integrator performs all these efforts across all GPS programs in all acquisition phases. The government owns the Enterprise system requirements and integration, and highly leverages the Enterprise Integrator team to eliminate the need to fund a development prime contractor to perform these functions. This enhances the government control, oversight and program accountability.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that were fielded or received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	371.595	383.500	303.500	-	303.500
Current President's Budget	309.566	373.062	299.760	-	299.760
Total Adjustments	-62.029	-10.438	-3.740	-	-3.740
• Congressional General Reductions	-0.462	-0.438			
• Congressional Directed Reductions	-71.500	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	50.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-11.159	-			
• Other Adjustments	-28.908	-	-3.740	-	-3.740

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2013	FY 2014
Project: 67A021: *OCX*		
Congressional Add: *GPS launch control system acceleration*	50.000	-
Congressional Add Subtotals for Project: 67A021	50.000	-
Congressional Add Totals for all Projects	50.000	-

Change Summary Explanation

FY13: -$50.0M Phase B OCX, Block 1 and 2 development ahead of need; +$50.0M GPS launch control acceleration; -$8.0M GPS/OCX FFRDC excess to need; -$5.0M enterprise-integrator FFRDC excess to need; -$8.5M enterprise integrator excess to need; -$28.908M sequestration reduction;
FY14: -$10.0M congressional program decrease
FY15: -$3.7M inflation adjustment

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A021 / *OCX*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
67A021: *OCX*	1,696.500	265.729	313.240	236.608	-	236.608	220.491	149.355	54.046	55.075	31.843	3,022.887
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) is a space based positioning, navigation and timing distribution system, which operates through all weather. This project funds the research and development for the GPS next generation operational control system (OCX). This includes, but is not limited to, advanced concept development, systems engineering and analysis, modernized control segment and mission planning, development, training simulators, integrated logistics support products, and developmental test resources.

The OCX acquisition was established to accomplish the following four objectives: 1) provide command and control of legacy and GPS III satellites, 2) incorporate situational awareness to support Navigation warfare (Navwar) and signal monitoring, 3) enable mission capability upgrades to support warfighter effects-based approach to operations, and 4) implement DoD information assurance controls and capabilities. OCX funds will support efforts such as engineering studies and analyses, architectural engineering studies, trade studies, technology needs forecasting, technology development, systems engineering, system development, test and evaluation efforts and mission operations in support of upgrades and product improvements for military and civil applications necessary to support efforts to protect U.S. military and allies' use of GPS. Additionally, funds will ensure efforts to meet current and future Joint Requirements Oversight Council (JROC) approved required capabilities.

OCX Block 0 (Iterations 1.4 and 1.5) is the Launch and Control System (LCS) intended to conduct Launch and Early Orbit (LEO) operations and the on-orbit checkout of all GPS III satellites. OCX Block 0 is a subset of OCX Block 1.

OCX Block 1 (adds Iterations 1.6 and 1.7 to Block 0) fields the operational capability to control all legacy satellites and civil signals (L1C/A), military signals (L1P(Y), L2P(Y)) as well as the GPS III satellites and the modernized civil signal (L2C) and the aviation safety-of-flight signal (L5). It also fully meets information assurance/cyber defense requirements.

OCX Block 2 (adds Iteration 2.1 to Block 1) fields the operational capability to control the modernized signals (L1M and L2M (M-Code)), and the globally compatible signal (L1C).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: OCX Development	201.290	299.209	220.736
Description: Development of the GPS next generation operational control system to launch and operate GPS II and GPS III constellation and provide a robust Information Assurance system.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A021 / *OCX*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: Developed, implemented, and began testing of the information assurance controls required for OCX Block 0 and OCX Block 1. Continued to develop GPS III launch and checkout capability (Block 0). Continued systems engineering and development of command and control for GPS II satellites, legacy signals, and modernized signals. Conducted Iteration 1.5 Critical Design Review (CDR) (Block 0). ***FY 2014 Plans:*** Conduct qualification testing for OCX Block 0. Complete Iteration 1.6 and 1.7 systems engineering (remainder of OCX Block 1) for the command and control for GPS II satellites, legacy signals, and modernized signals. Continue systems engineering and development of remaining civil and military modernized signals (L1C and M-code) for OCX Block 2 (Iteration 2.1). ***FY 2015 Plans:*** Conduct site acceptance testing, receive approval to operate and connect, and certify & accept OCX Block 0 for launch and checkout operations of GPS-III satellites. Conduct Iteration 1.6 and 1.7 CDRs and finalize qualification testing for OCX Block 1, command and control for GPS II satellites, legacy signals, and the modernized aviation safety of life signal (L5). Conduct Iteration 2.1 CDR. Continue development of the remaining modernized civil and military signals.			
Title: Technical Support	14.439	14.031	15.872
Description: Development of the Standardized Space Trainer (SST), Modernized Mission Planning System (M2PS), and Selective Availability Anti-Spoofing Module (SAASM) Mission Planning System (SMPS) to provide GPS III operator training. Automation study to examine the feasibility of implementing control segment automation to increase command and control efficiencies. Facilities upgrades for Control Stations and associated equipment and servers. ***FY 2013 Accomplishments:*** Awarded SST contract modification and initiated development and testing efforts to support GPS III operator training for OCX Block 1. Completed minimized operational crew size study, including automation. Continued work on the facility upgrades and hardware installation to prepare for OCX testing and transition to include the Master Control Station (MCS) and Alternate Master Control Station (AMCS). ***FY 2014 Plans:*** Continue work on the SST and develop demonstration capabilities; continue development of M2PS and SMPS. Continue work on the facility upgrades to include the MCS and AMCS. ***FY 2015 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A021 / *OCX*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue efforts on operation and maintenance training and technical orders development. Plan, prepare, and conduct Block 1 testing and preparation activities for Block 1 DD250.			
Accomplishments/Planned Programs Subtotals	215.729	313.240	236.608

	FY 2013	FY 2014
Congressional Add: GPS launch control system acceleration	50.000	-
FY 2013 Accomplishments: GPS launch control system acceleration		
Congressional Adds Subtotals	50.000	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA07: PE 0305265F: *GPS III Space Segment*	281.880	200.984	212.571	-	212.571	167.576	78.447	77.366	78.837	50.884	1,148.545
• MPAF: BA05: Line Item # GPSIII: *GPS III TOA*	492.260	450.238	292.397	-	292.397	414.982	854.612	814.663	914.139	4,782.520	9,015.811
• DOT: *DOT (FAA) Civil Funding*	27.800	9.500	2.800	-	2.800	0.400	0.400	-	-	-	40.900

Remarks

DOT (FAA) funding in FY 2014 - 2017 is TBD. $45M required

D. Acquisition Strategy

The Air Force is pursuing a "Block" approach to the next generation GPS control segment (OCX) to rapidly respond to warfighter capability requirements. The Block acquisition strategy approach follows the "Back to Basics" space program acquisition philosophy which focuses on mission success and on-time delivery. Additionally, the strategy calls for capability (e.g., better signal maintainability , Unified S-Band (USB), Search and Rescue (SAR) GPS, and near-real time C2) on-ramps for the follow on contract for GPS III SVs 11+ which will require updates to the OCX ground segment. Enterprise studies will ensure GPS Enterprise synchronization across space and ground segments.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A021 / *OCX*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GPS OCX Phase B OCX Block 1 & 2 Development	C/CPAF	Raytheon : Aurora, CO	1,170.581	222.420	Jan 2013	266.340	Dec 2013	189.413	Dec 2014	-		189.413	359.358	2,208.112	-
GPS OCX Enterprise Studies	C/CPAF	SAIC : Huntington Beach, CA	29.249	6.300	Mar 2013	5.465	Dec 2013	5.656	Dec 2014	-		5.656	23.187	69.857	-
GPS OCX Modernization/ SE & Technical Support	Various	Various : Various,	49.019	3.209	Apr 2013	4.041	Jan 2014	0.342	Jan 2015	-		0.342	9.269	65.880	-
GPS OCX Standard Space Trainer (SST)	C/CPAF	Sonalyst, Inc : Waterford, CT	0.000	3.500	Mar 2013	5.000	Jan 2014	5.000	Jan 2015	-		5.000	5.000	18.500	-
GPS OCX M2PS	C/CPIF	TBD : TBD,	0.000	-		4.990	Aug 2014	10.530	Dec 2014	-		10.530	23.810	39.330	-
GPS OCX SMPS	C/CPIF	Booz Allen Hamilton Eng Services : El Segundo, CA	0.000	7.000	Apr 2013	-		-		-		-	-	7.000	-
GPS OCX Completed Activities	Various	Various : ,	289.000	-		-		-		-		-	-	289.000	-
		Subtotal	1,537.849	242.429		285.836		210.941		-		210.941	420.624	2,697.679	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A021 / *OCX*	

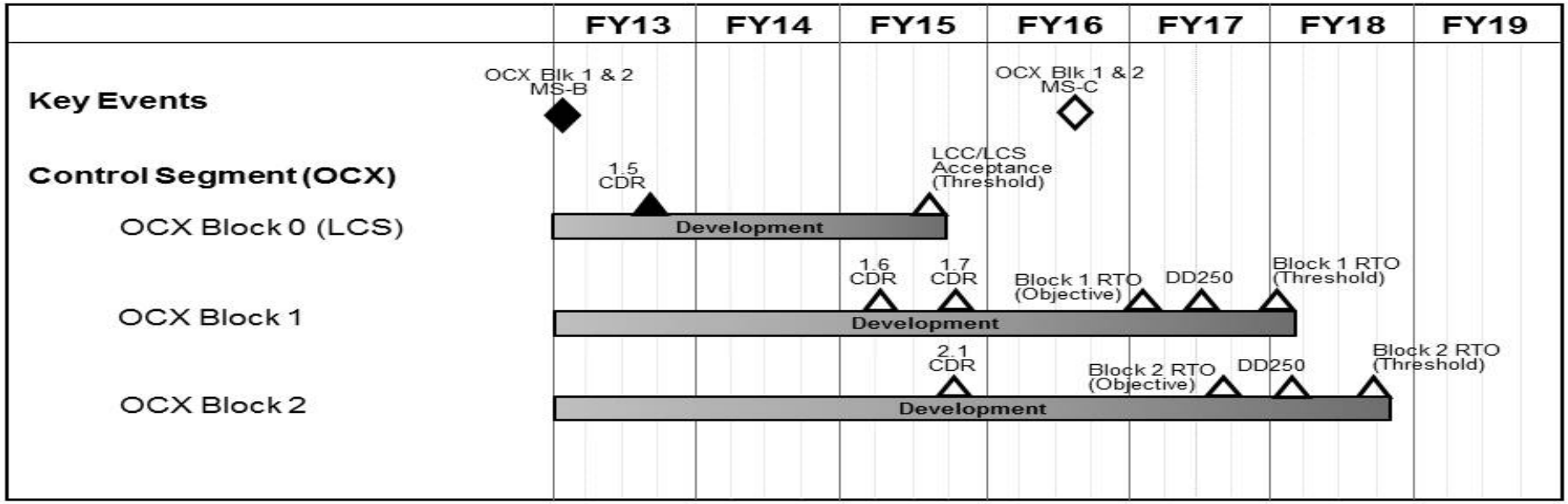
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GPS OCX FFRDC 1	RO	Aerospace : El Segundo, CA	80.994	10.581	Jan 2013	10.438	Jan 2014	10.855	Jan 2015	-		10.855	52.483	165.351	-
GPS OCX FFRDC 2	C/CPFF	MITRE : Bedford, MA	0.000	5.390	Apr 2013	2.839	Jan 2014	2.953	Jan 2015	-		2.953	17.272	28.454	-
GPS OCX FFRDC 3	C/CPFF	SEI : Pittsburgh, PA	0.000	1.030	Mar 2013	-		-		-		-	-	1.030	-
GPS OCX Program Management Administration (PMA)	Various	Various : ,	77.657	6.299	Apr 2013	14.127	Feb 2014	11.859	Feb 2015	-		11.859	20.431	130.373	-
		Subtotal	158.651	23.300		27.404		25.667		-		25.667	90.186	325.208	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,696.500	265.729		313.240		236.608		-		236.608	510.810	3,022.887	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A021 / *OCX*



CDR – Critical Design Review
LCC – Launch & Checkout Capability
LCS – Launch & Early Checkout System
RTO – Ready to Transition to Operations

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A021 / *OCX*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
OCX Blocks 1 & 2 MS B	1	2013	1	2013
Software Iteration 1.5 Incremental CDR	3	2013	3	2013
Software Iteration 1.7 Incremental CDR (Include Iteration 1.6 CDR and update dates)	4	2015	4	2015
LCC/LCS Acceptance (Threshold)	3	2015	3	2015
Software Iteration 2.1 Incremental CDR	4	2015	4	2015
OCX Blocks 1 & 2 MS C	3	2016	3	2016
OCX Block 1 Ready to Transition to Operations (RTO) (Objective)	1	2017	1	2017
OCX Block 2 RTO (Objective)	3	2017	3	2017
OCX Block 1 RTO (Threshold)	1	2018	1	2018
OCX Block 2 RTO (Threshold)	3	2018	3	2018

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A025 / *GPS Enterprise Integrator*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
67A025: *GPS Enterprise Integrator*	-	43.837	59.822	63.152	-	63.152	61.647	63.019	64.252	65.475	51.296	472.500
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Global Positioning System (GPS) Enterprise Integrator (EI) integrates, synchronizes, tests and verifies the seven ACAT I Defense Acquisition Programs that constitute the GPS Enterprise to deliver reliable Positioning, Navigation, and Timing signal capability to military operators, the civil user community, and international partners. The Government Program Office owns and approves the technical baseline and is responsible for the successful fielding of all the GPS Segments. To successfully execute its responsibilities, the Government relies upon the specific expertise of the GPS Enterprise Integrator to integrate segment products and verify that system requirements are met.

The GPS Enterprise Integrator project is responsible for the development and management of the Enterprise technical baseline. The technical baseline consists of more than 6400 specifications and 330 interface documents. The technical baseline reflects the requirements of multiple stakeholder groups such as the Department of Defense (DoD), foreign governments and allies, industry, the general public (through four Interface specifications), and ensures GPS capabilities meet the needs of warfighters, civil agencies, commercial entities, international treaties, and over 4B global GPS users. The Enterprise Integrator manages the process through which the JROC requirements are matured and flowed down to the segments of the system and that interfaces are clearly defined. This enables the GPS system to meet Title 10 of the U.S. Code, Section 2281, mandated GPS capabilities as well as obligations to the international community and allied nations, to provide, inter-operable PNT signals. The Enterprise Integrator is also responsible for all aspects of schedule and technical alignment across the segments. The Enterprise Integrator creates and manages plans that provide for early exercise of the products under development, compatibility analysis, and intersegment testing thereby reducing risk. The intersegment tests are required to prove the interoperability of OCX, GPS III, and modernized user equipment. The Enterprise Integrator's test efforts also extend to validating that GPS can be used for civil aircraft navigation.

The Enterprise Integrator activity supports the Government Program Office's GPS spectrum protection at international forums such as the International Telecommunications Union, assisting the United States when negotiating with foreign partners. In addition, the Enterprise Integrator provides technical expertise and continuity for maintaining relationships with other U.S. government agencies to include the FAA, NGA, NASA, as well as the Departments of State, Transportation, Homeland Security, and Commerce. Spectrum expertise from the Enterprise Integrator ensures GPS priority over eight essential spectrum signals such as the safety of life signal, L5, which is required for civil air navigation. Spectrum Protection prevents encroachment from commercial or foreign entities, which preserves reliable signals to warfighters and civil users, ensuring military operations and the integrity of the global economic infrastructure. The Enterprise Integrator is the GPS enterprise expert for Information Assurance (IA), System Safety, and System Security, ultimately ensuring a protected GPS Signal for both the military and civil users from emerging cyber threats. The Enterprise Integrator is accountable for the development, execution, and analysis of OCX IA test cases, which are necessary to deliver a secure, operational system, protected against adversarial cyber-attacks intended to deny, disrupt, or degrade GPS operations.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*

The Enterprise Integrator supports the Government development and implementation of various Systems engineering documents, defines the methods of verification, conducts the analyses or tests, and assists the government in leading Integrated System Tests. The Enterprise Integrator validates the system performance in various mission threat scenarios during its development. The Enterprise Integrator provides deep, technical, highly specific expertise that the government utilizes to enhances the government control, oversight and program accountability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: GPS Enterprise Integrator	43.837	59.822	63.152
Description: The integration and configuration control of all elements of the GPS system (space/ground/user equipment) with one another in support of both military and civil users. Execute five integrated exercises and rehearsals between space and ground leading up to the launch of GPS III SV-01. ***FY 2013 Accomplishments:*** Continued Enterprise system definition and integration across Generation II and III (space, control, and user segments). Conducted OCX-GPS III risk reduction demos for interface and functionality validation; evolved GPS III Space Modernization Initiatives specifications and interface control documents. Facilitated OCX Block 1&2 Milestone B. Conducted Launch and Checkout Capability Exercise and Rehearsals in support of GPS III SV-01. Conducted MGUE International Test demonstrations and integrated tests between ground, space and user segments. Completed third integration exercise. ***FY 2014 Plans:*** Conduct fourth integration exercise and begin planning for fifth exercise, during which LCS software iteration 1.5 will be in use. Conduct system integration demos to simulate key aspects of launch and on orbit operations. Oversee multiple Mission Readiness testing activities. Update tech baseline for M-Code Modernization to support MGUE certification towards RFP Release. ***FY 2015 Plans:*** Conduct fifth integration exercise, which will conclude the 'exercise' portion of readiness for launch. Conduct launch and early orbit operations rehearsals on delivered system between ground and space segment in support of SV01 launch. Conduct multiple system integration demos. IST 3-1 testing will be conducted before and after launch. Perform risk reduction demonstration for M-code.			
Accomplishments/Planned Programs Subtotals	43.837	59.822	63.152

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA04: PE 0305164F: *NAVSTAR Global Positioning System (User Equipment) (Space)*	63.687	127.172	156.659	-	156.659	152.011	155.335	97.590	99.506	55.700	907.660
• RDTE: BA07: PE 0305164F: *NAVSTAR Global Positioning System (User Equipment) (Space)*	26.011	-	-	-	-	-	-	-	-	-	26.011
• RDTE: BA07: PE 0305165F: *NAVSTAR Global Positioning System (Space and Control Segments)*	12.436	-	-	-	-	-	-	-	-	-	12.436
• RDTE: BA07: PE 0305265F: *GPS III Space Segment*	281.880	200.984	212.571	-	212.571	167.576	78.447	77.366	78.837	50.884	1,148.545
• RDTE: BA07: PE 0305913F: *NUDET Detection System*	58.074	42.506	20.468	-	20.468	6.444	4.230	13.756	14.016	Continuing	Continuing
• MPAF: BA05: Line Item # MGPS00: *Global Positioning System (Space)*	48.084	55.895	52.090	-	52.090	22.615	13.393	-	-	-	192.077
• MPAF: BA05: Line Item # GPSIII: *GPS III TOA*	492.260	450.238	292.397	-	292.397	414.982	854.612	814.663	914.139	4,782.520	9,015.811

Remarks

D. Acquisition Strategy

In accordance with a "back to basics" acquisition approach and exercise of strong oversight of development contractors, the Air Force is required to exercise complete ownership of the architecture, system definition, and integration of the GPS space, ground, and user segments. This complex inter-segment integration is traditionally performed by a prime contractor under a systems development contract. To eliminate the need to fund a development prime contractor to perform these functions, the government leverages systems engineering and integration expertise from both Federally Funded Research and Development Center (FFRDC) contractors and a Systems Engineering & Integration (SE&I) contractor. GPS Enterprise Integrator function of the SE&I contractor is currently funded within this Program Element (PE). The SE&I effort was originally procured in 2007 through a full and open competition. It was subsequently extended to support the timing and competitive award of a new SE&I contract which is currently in a full and open competition source selection. The SE&I follow-on strategy builds in year over year cost reductions as requirements stabilize.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A025 / *GPS Enterprise Integrator*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GPS Enterprise Integrator	C/CPAF	Leidos : El Segundo, CA	0.000	27.979	Jan 2013	40.290	Jan 2014	42.844	Jan 2015	-		42.844	208.092	319.205	-
GPS Enterprise Integrator 2	MIPR	Aerospace : El Segundo, CA	0.000	6.509	Oct 2012	9.626	Oct 2013	10.020	Oct 2014	-		10.020	56.965	83.120	-
GPS Enterprise Integrator 3	WR	MITRE : Bedford, MA	0.000	8.725	Oct 2012	8.526	Oct 2013	8.858	Oct 2014	-		8.858	36.116	62.225	-
		Subtotal	0.000	43.213		58.442		61.722		-		61.722	301.173	464.550	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Admistration	Various	Various : El Segundo, CA	0.000	0.624	Oct 2012	1.380	Oct 2013	1.430	Oct 2014	-		1.430	4.516	7.950	-
		Subtotal	0.000	0.624		1.380		1.430		-		1.430	4.516	7.950	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0603423F / *Global Positioning System III - Operational Control Segment*	Project (Number/Name) 67A025 / *GPS Enterprise Integrator*	

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	43.837		59.822		63.152		-		63.152	305.689	472.500	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*

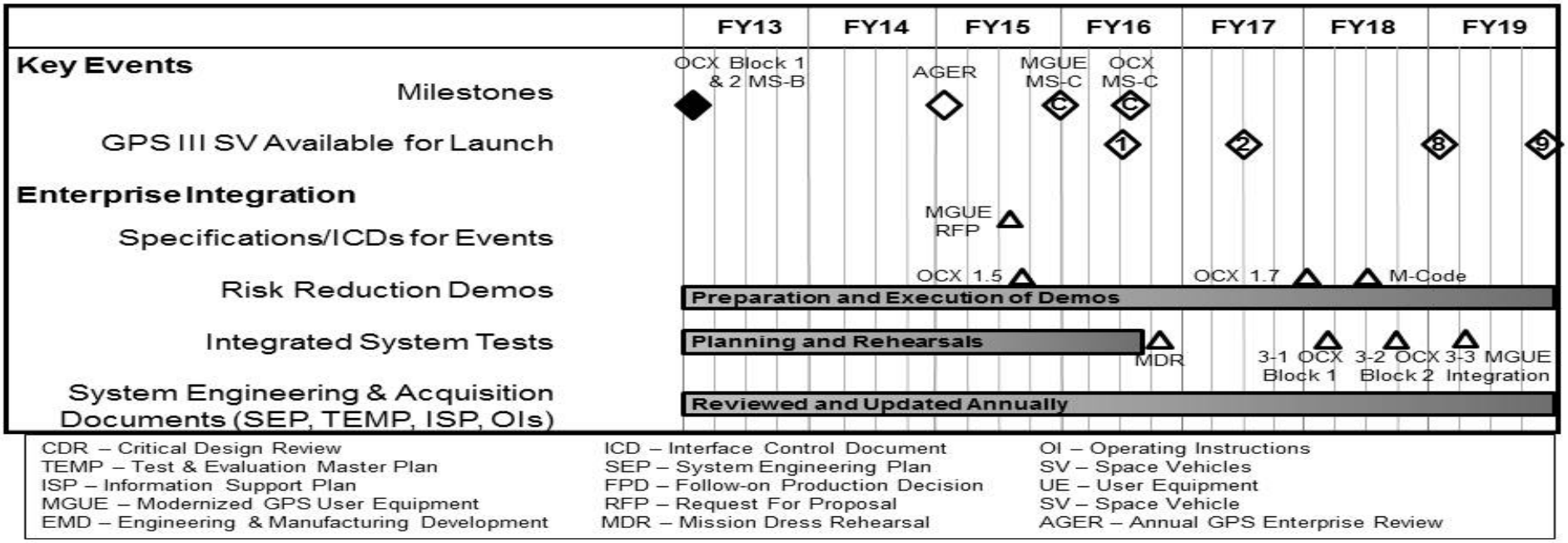


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0603423F / *Global Positioning System III - Operational Control Segment*	**Project (Number/Name)** 67A025 / *GPS Enterprise Integrator*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Specifications and ICDs for GPS III Space Modernization Initiative Technical Baseline	1	2015	1	2015
GPS III SV01 Delivery	3	2016	3	2016
Risk Reduction Demonstration for M-Code (18.1)	3	2018	3	2018
GPS III SV02 Delivery	3	2017	3	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0604445F / *Wide Area Surveillance*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	5.000	-	-	-	18.240	5.405	4.561	4.699	Continuing	Continuing
675895: *Wide Area Surveillance*	-	-	5.000	-	-	-	18.240	5.405	4.561	4.699	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

A. Mission Description and Budget Item Justification

The Stateside Affordable Radar System (STARS) is an ARMY effort managed by the Joint Integrated Air and Missile Defense Office (JIAMDO). Beginning in FY14, PE 0604445F funds the establishment of an Air Force program office and development of acquisition documentation in preparation for the program transferring to the AF in FY16. For further details please refer to PE 0604445J.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	5.000	41.700	-	41.700
Current President's Budget	-	5.000	-	-	-
Total Adjustments	-	-	-41.700	-	-41.700
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-41.700	-	-41.700

Change Summary Explanation

Wide Area Surveillance was a new start in the FY14 President's Budget.

FY15, -$41.7M: Program transition to the Air Force delayed from FY15 to FY16.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0604445F / *Wide Area Surveillance*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Program Office Establishment	-	5.000	-
Description: Establishment of Air Force program office and integration of Air Force development team with Army development team. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Establishment of an Air Force program office and integration of Air Force development team with Army development team. ***FY 2015 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	-	5.000	-

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA04: PE 0604445J: *Wide Area Surveillance*	-	30.000	53.000	-	53.000	-	-	-	-	-	83.000

Remarks

E. Acquisition Strategy

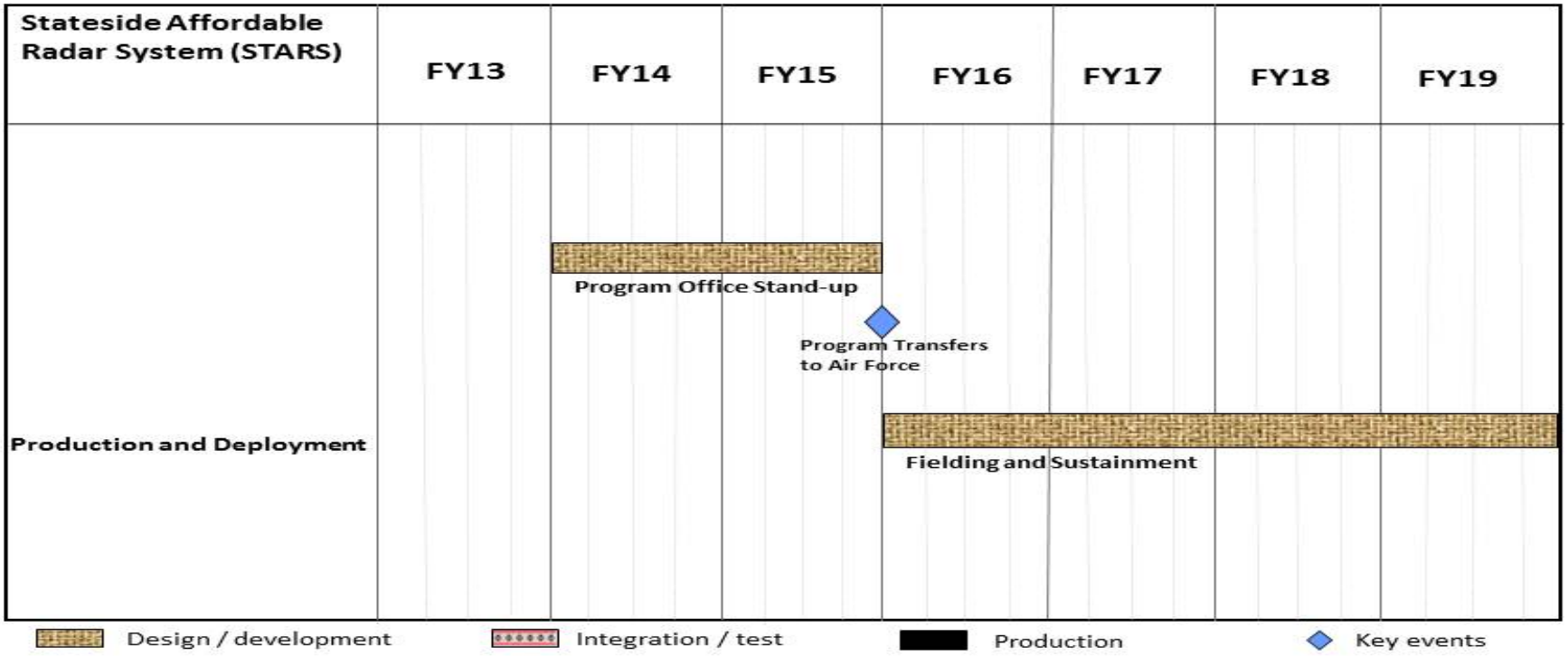
N/A

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604445F / *Wide Area Surveillance*	**Project (Number/Name)** 675895 / *Wide Area Surveillance*

AF STARS Program Schedule



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0604618F / *Joint Direct Attack Munition*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	-	-	2.469	-	2.469	-	-	-	-	-	2.469
674138: *JDAM DEVELOPMENT*	0.000	-	-	2.469	-	2.469	-	-	-	-	-	2.469
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
MDAP/MAIS Code: 503												

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 674138 JDAM Development efforts were transferred from Budget Activity 4.

A. Mission Description and Budget Item Justification

The 5000 lb demonstration is an integration of BLU-113 warhead with an existing production tail kit, scaled if necessary from smaller or larger warhead control design, to provide accurate, precision, reliable, hard target penetration capability. The required accuracy shall be "JDAM like" as defined by the operational requirements community. The greater overall system performance will tighten dispersion capability where multiple weapons are released from the same aircraft on the same pass, and hit the same impact crater. The BLU-113 is an objective requirement of the 2002 JDAM Operational Requirements Document (ORD). Weapon system will have an identical Concept of Operations (CONOPS) as existing USAF inventory for Global Positioning System-aided Inertial Navigation System (GPS-aided INS) weapons, and compatibility with aircraft Operational Flight Profile (OFP).

BA-07 - This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	2.469	-	2.469
Total Adjustments	-	-	2.469	-	2.469
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	2.469	-	2.469

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0604618F / *Joint Direct Attack Munition*

Change Summary Explanation

FY15 adjustment: Transfer of FY15 funding from BA04 to BA07 to properly align budget activity for PE0604618F

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: JDAM	-	-	2.469
Description: The 5000 lb demonstration is an integration of the BLU-113 warhead with a guidance kit that provides accurate, reliable, tight dispersion, hard target penetration capability. JDAM accuracy expands the drill down CONOPS used by the GBU-31 (2000 lb class warhead) to a 5000 lb concept, holding harder and deeper targets at risk. This is an objective requirement of the 2001 JDAM ORD. The 5000 lb weapon expands USG capability using JDAM proven performance, identical CONOPS as existing JDAM inventory, and compatibility with aircraft Operational Flight Profile (OFP). This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: N/A			
FY 2015 Plans: Design a BLU-113 conversion kit including BLU-113 strake assembly, BLU-113 umbilical cover, and BLU-113 wire harness extension and develop a unique Operational Flight Profile (OFP) with modified autopilot that provides JDAM like performance.			
Accomplishments/Planned Programs Subtotals	-	-	2.469

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDT&E:BA04: PE 0604618F: *JDAM DEVELOPMENT*	-	2.500	-	-	-	-	-	-	-	-	-

Remarks

N/A

E. Acquisition Strategy

Effort will be executed under a firm fixed price contract and will be a sole source activity.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0604618F / *Joint Direct Attack Munition*

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604618F / *Joint Direct Attack Munition*	Project (Number/Name) 674138 / *JDAM DEVELOPMENT*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
2.3Software Development and Hardware Fabrication	SS/TBD	TBD : ,	0.000	-		-		0.787	Jun 2016	-		0.787	-	0.787	-
		Subtotal	0.000	-		-		0.787		-		0.787	-	0.787	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Wind Tunnel Test	Various	TBD : ,	0.000	-		-		0.737	Apr 2015	-		0.737	-	0.737	-
Flight Test	Various	96th Test Wing : Eglin AFB, FL	0.000	-		-		0.770	Jul 2015	-		0.770	-	0.770	-
		Subtotal	0.000	-		-		1.507		-		1.507	-	1.507	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration (PMA)	Various	AFLCM/EBDJ : Eglin AFB, FL	0.000	-		-		0.175	Apr 2015	-		0.175	-	0.175	-
		Subtotal	0.000	-		-		0.175		-		0.175	-	0.175	-

	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		2.469		-		2.469	-	2.469	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0604618F / *Joint Direct Attack Munition*	Project (Number/Name) 674138 / *JDAM DEVELOPMENT*	

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604618F / *Joint Direct Attack Munition*	**Project (Number/Name)** 674138 / *JDAM DEVELOPMENT*

5K Demo Schedule

War-Winning Capabilities…On Time, On Cost

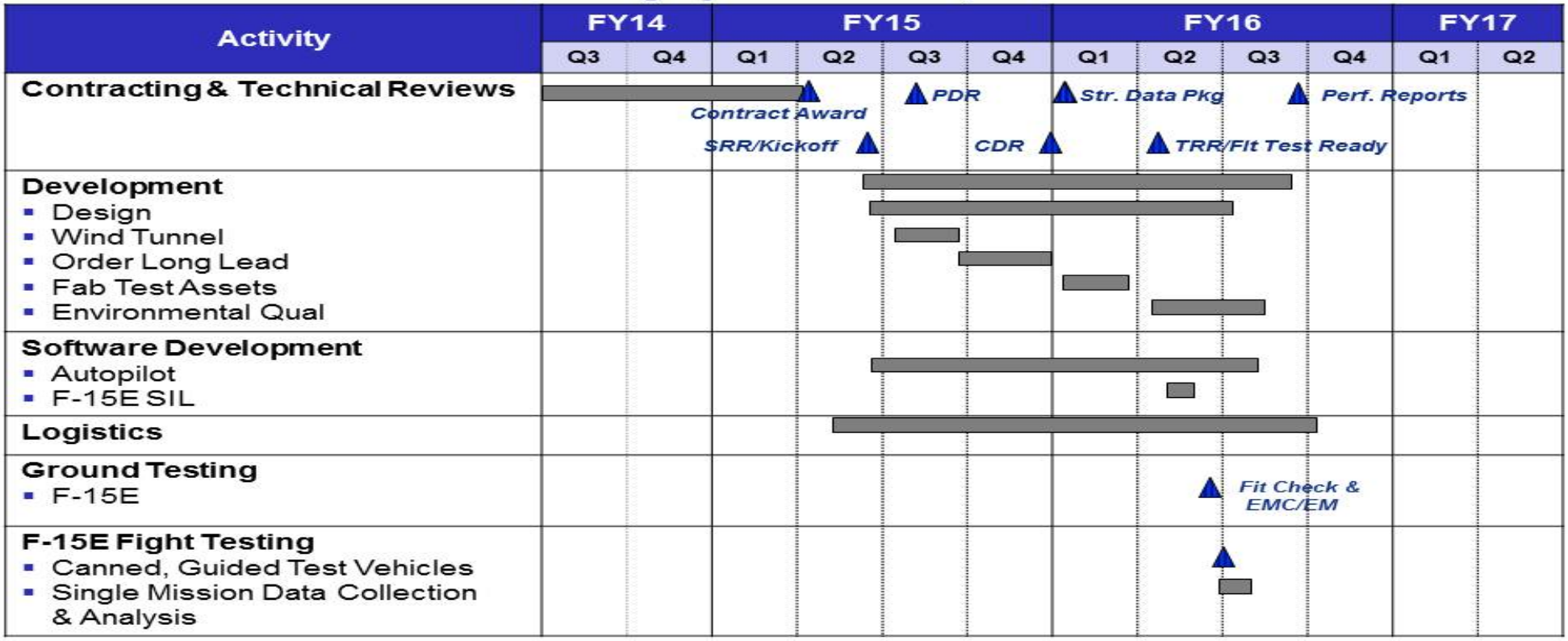


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0604618F / *Joint Direct Attack Munition*	**Project (Number/Name)** 674138 / *JDAM DEVELOPMENT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Requirements Development	3	2014	4	2014
Airframe Design	2	2015	3	2016
Aero Database Development	2	2015	3	2016
Autopilot & OFP Development	2	2015	3	2016
Wind Tunnel Testing	3	2015	3	2015
Hardware Fabrication	1	2016	1	2016
Weapon Build Up	1	2016	1	2016
Flight Certification	2	2016	2	2016
Flight Test	2	2016	3	2016
Quick Look Analysis Report	4	2016	4	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0605018F / *AF Integrated Personnel and Pay System (AF-IPPS)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	80.467	40.088	34.034	90.218	-	90.218	93.788	58.677	59.825	28.703	-	485.800
676003: *HRM Structural Development*	80.467	40.088	34.034	90.218	-	90.218	93.788	58.677	59.825	28.703	-	485.800
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: N86

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Air Force Integrated Personnel and Pay System (AFIPPS) will be a web enabled, Commercial-Off-The-Shelf (COTS)-based solution that will integrate many existing personnel and pay processes into one self-service system. The system represents the AF commitment to modernizing business practices and providing enhanced support for today's service members and their families. AFIPPS will align with DoD data standards for personnel, pay, and accounting, including the Common Human Resource Information Standards (CHRIS), which will ensure compliance with the Business Enterprise Architecture (BEA). AFIPPS will provide Enterprise Information Web (EIW) services. The AFIPPS program will be bound by using the BEA "Hire-to-Retire" (H2R) construct. Eighty-four percent of the BEA's H2R activities are within the scope of AFIPPS.

The purpose of AFIPPS is to provide the AF with a sustainable, cost-effective, auditable, and regulatory compliant method of effectively capturing and maintaining personnel information so that Service members are paid accurately and on-time without requiring repetitive action or onerous paperwork, while allowing commanders/ managers to easily access pertinent information.

The goal of AFIPPS, as documented in the Capability Development Document (CDD) signed 05 Jul 11, is to fully integrate personnel and pay management for the AF's Total Force (Regular Air Force (RegAF), Air National Guard (ANG), and Air Force Reserve (AFRes)). The future state will be characterized by streamlined, Total Force business processes; efficient and accurate management of pay entitlements; auditable financial statements with regard to military pay; improved access to accurate and timely personnel data for authorized users; and a modernized IT systems environment that is cost-effective and can adapt to future needs.

AFIPPS's customers include approximately 507,000 AF Service members across all components (330,000 RegAF, 107,000 ANG, and 70,000 AFRes) as well as thousands of military leaders of different ranks, specialties, and career fields who are responsible for the conduct of AF operations that rely on these services to ensure Service members with the appropriate skill sets are deployed where needed at home and on the battlefield. Congress, the rest of the Department of Defense (DoD), and other federal agencies all rely on accurate AF Human Resources (HR) data to make key decisions that affect how the US military is organized, funded, deployed, and maintained.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0605018F / *AF Integrated Personnel and Pay System (AF-IPPS)*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	91.697	90.097	128.149	-	128.149
Current President's Budget	40.088	34.034	90.218	-	90.218
Total Adjustments	-51.609	-56.063	-37.931	-	-37.931
• Congressional General Reductions	-0.061	-0.063			
• Congressional Directed Reductions	-46.000	-56.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.421	-			
• SBIR/STTR Transfer	-1.127	-			
• Other Adjustments	-	-	-37.931	-	-37.931

Change Summary Explanation

FY13 Congressional Directed Reduction (-$46.0M) due to Contract 1 award delay.
FY14 Congressional Directed Reduction (-$56.0M) due to availability of FY12 funds for development.
FY15 funding decrease to support higher DoD priorities.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Product Development	39.667	33.834	89.251

Description: Acquire and develop the activities that support the acquisition of a personnel/pay capability for USAF personnel across all components (i.e., RegAF, ANG, and AFRes).

FY 2013 Accomplishments:
Released the Contract 1 Request For Proposal (RFP). Awarded Contract 1 for Blueprinting/Conference Room Piloting (CRP) for all AFIPPS capability releases and an option for Release 1 (Leave) including requirements analysis, design, integration, functional/systems test, deployment, and training. Obtained full accreditation of the following development environments [i.e., received Authority to Operate (ATO)]: Data Management Environment (DME), Common Tools Environment (CTE) and Common Services Environment (CSE). Built the development environment of the initial AFIPPS development / test environment and extended existing DISA services (i.e., cloud computing). Established Contract 1 post award Independent Verification and Validation (IV&V). Continued DME efforts of extracting, cleansing, consolidating, and preparing data. Purchased and renewed COTS software (S/W) to support data management, development, and deployment activities. Continued supporting AF information technology efforts (e.g., implementation & operational baselines, application services, etc.) to ensure AFIPPS is fully integrated into the AF & DoD enterprise networks, databases, and information systems. Continued acquisition planning and reporting,

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0605018F / *AF Integrated Personnel and Pay System (AF-IPPS)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
conducted Contract 1 source selection and award, and executed Contract 1 activities. Refined documentation in preparation for Milestone B. Continued Contract 2 RFP development for implementation of the current acquisition strategy. Includes contracted personnel and other program management expenses to support implementation of the program. ***FY 2014 Plans:*** Release the Contract 2 RFP. Continue the following efforts: (1) Contract 1 including Blueprinting/CRP and Release 1 (Leave) , (2) DME, (3) the AF information technology efforts (e.g., implementation & operational baselines, application services, etc.) to ensure AFIPPS is fully integrated into the AF & DoD enterprise networks, databases, and information systems, (4) Contract 1 IV&V, (5) Building production, Continuity of Operations (COOP), and additional development environments to the AFIPPS development and test environment and extend existing DISA services (i.e., cloud computing), (6) Purchasing and renewing COTS S/W to support data management and development activities, (7) Leading the integration for Contract 1 and managing the interaction between all contractor and Government activities. Prepare for and achieve Milestone B. Obtain the Authority to Proceed (ATP) for Release 1, 2, and 3. Continue acquisition planning, reporting, and the execution of Contract 1 activities. Continue Contract 2 RFP development for implementation of the acquisition strategy. Initiate Contract 2 source selection activities. Includes contracted personnel and other program management expenses to support implementation of the program. ***FY 2015 Plans:*** Continue with source selection activities and subsequently award Contract 2. Initiate Roll Out for Release 1. Establish Contract 2 phase three IV&V. Continue the following efforts: (1) Contract 1 including Blueprinting/CRP and Release 1, (2) DME, (3) the AF information technology efforts (e.g., implementation & operational baselines, application services, etc.) to ensure AFIPPS is fully integrated into the AF & DoD enterprise networks, databases, and information systems, (4) Contract 1 IV&V, (5) Building production, COOP, and additional development environments to the AFIPPS development and test environment and extend existing DISA services (i.e., cloud computing), (6) Purchasing and renewing COTS S/W to support data management and development activities, (7) Leading the integration for Contract 1 and managing the interaction between all contractor and Government activities. Achieve Milestone C. Continue acquisition planning, reporting, and the execution of Contract 1 activities. Continue RFP development for implementation of future capabilities. Includes contracted personnel and other program management expenses to support implementation of the program.			
Title: Test and Evaluation ***Description:*** Government integrated test and evaluation activities. ***FY 2013 Accomplishments:*** Finalized test strategy and developed test plans for Release 1. ***FY 2014 Plans:***	0.421	0.200	0.967

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0605018F / *AF Integrated Personnel and Pay System (AF-IPPS)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Conduct test and evaluation for Release 1 and prepare test plans for subsequent Releases. ***FY 2015 Plans:*** Conduct Qualification Test and Evaluation, as well as Operational Test and Evaluation for Release 1. Continue preparing and finalizing test plans for subsequent Releases.			
Accomplishments/Planned Programs Subtotals	40.088	34.034	90.218

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA03: Line Item # 834010: *General Information Technology*	-	-	-	-	-	10.244	2.985	-	-	Continuing	Continuing

Remarks

E. Acquisition Strategy

AFIPPS's acquisition strategy consists of a multiple release/multiple contract strategy. The Government will conduct a Full and Open Competition (trade-off) to award contracts to deliver the integrated personnel and pay system for the military Total Force (i.e., RegAF, ANG, and AFRes).

The AFIPPS acquisition strategy will be executed in severable and discrete capability releases. Each capability release builds upon and incorporates the previous baseline. Contract 1 includes the effort to blueprint for all releases with an option to develop, integrate, test, train, deploy, and sustain Release 1 (Leave). The primary contract type is Fixed Price Incentive Firm (FPIF). Cost Plus Incentive Fee (CPIF) and Firm Fixed Price (FFP) are used for the smaller portions of the contract, as appropriate.

The acquisition strategy for Contract 2 includes separate task orders, each of which represents a fieldable capability for the Air Force human resources mission. AFIPPS will provide a fully integrated personnel and pay service capability for the Total Force to fully utilize capabilities in the COTS software, minimize customization of the ERP and sustainment costs and maximize the life of the system. Contract 2 plans to use a multiple award Indefinite Delivery Indefinite Quantity (IDIQ) which will be determined via the Contract 2 acquisition strategy process.

Air Force Program Executive Officer for Business and Enterprise Systems (AFPEO BES) is the PEO for AFIPPS. Air Force Life Cycle Management Center (AFLCMC) is the Contracting Authority for the AFIPPS Program and provides Contracts, Legal, and Comptroller support. The Under Secretary of Defense for Acquisition, Technology, and Logistics / Defense Acquisition Executive is the program's Milestone Decision Authority (MDA).

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0605018F / *AF Integrated Personnel and Pay System (AF-IPPS)*

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0605018F / *AF Integrated Personnel and Pay System (AF-IPPS)*	**Project (Number/Name)** 676003 / *HRM Structural Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AFIPPS Environments	Various	DISA, Various SW Vendors : TBD,	10.065	7.764	Oct 2012	6.276	Oct 2013	11.801	Oct 2014	-		11.801	39.574	75.480	TBD
Contract 1	C/Various	IBM : Bethesda, MD	12.000	8.750	Jul 2014	1.496	Jul 2014	1.000	Oct 2014	-		1.000	-	23.246	TBD
Contract 2	C/Various	TBD : TBD,	0.000	-		-		27.310	Nov 2014	-		27.310	75.086	102.396	-
DMS Other	Various	Various IT Vendors : TBD,	23.790	14.461	Nov 2012	15.784	Nov 2013	36.757	Nov 2014	-		36.757	86.203	176.995	TBD
PeopleSoft Licenses	MIPR	Oracle : Reston, VA	6.777	2.373	Dec 2013	2.400	Dec 2014	2.731	Dec 2015	-		2.731	12.214	26.495	TBD
Independent Verification & Validation (IV&V)	C/Various	Various : TBD,	1.680	0.674	Feb 2014	1.140	Oct 2014	1.426	Oct 2015	-		1.426	3.240	8.160	TBD
		Subtotal	54.312	34.022		27.096		81.025		-		81.025	216.317	412.772	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Gov't Integrated Test & Evaluation Activities	C/Various	Various : Orlando, FL	0.377	0.421	Apr 2013	0.200	Apr 2014	0.967	Apr 2015	-		0.967	3.796	5.761	TBD
		Subtotal	0.377	0.421		0.200		0.967		-		0.967	3.796	5.761	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0605018F / *AF Integrated Personnel and Pay System (AF-IPPS)*	**Project (Number/Name)** 676003 / *HRM Structural Development*

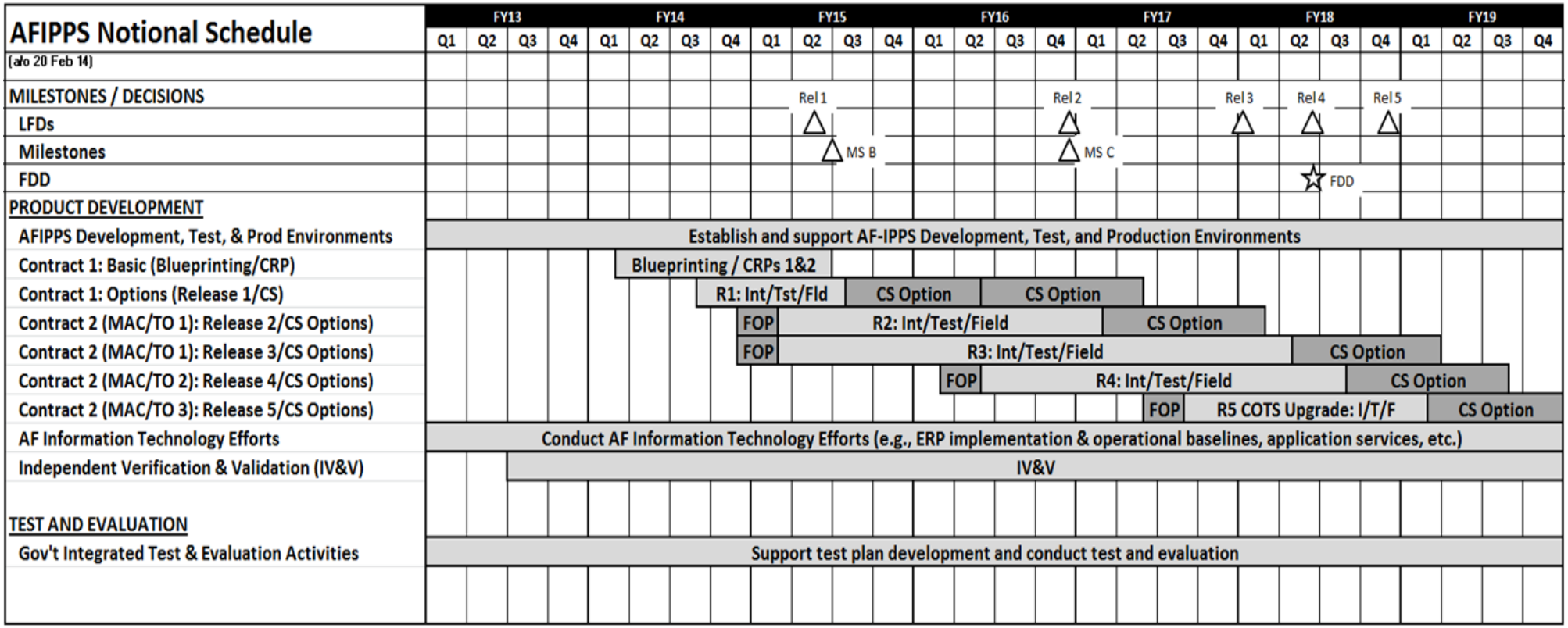
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Technology Acquisition Support Services (ETASS)	C/CPFF	Jacobs Technology : Bedford, MA	8.442	0.795	May 2013	-		-		-		-	-	9.237	TBD
Program Office Engineering (FFRDC)	SS/CPFF	MITRE : Lexington, MA	4.067	1.071	Oct 2012	0.167	Oct 2013	-		-		-	-	5.305	TBD
Other PMA	Various	Various : TBD,	6.570	0.632	Oct 2012	2.379	Oct 2013	3.351	Oct 2014	-		3.351	4.359	17.291	TBD
Professional Acquisition Support Services (PASS)	C/CPFF	Oasis Systems, Inc. : Lexington, MA	5.330	2.882	Apr 2013	3.653	Feb 2014	4.317	Feb 2015	-		4.317	14.524	30.706	TBD
Specialized Cost Services (SCS)	C/CPFF	Tecolote : Bedford, MA	1.369	0.265	Oct 2012	0.539	Oct 2013	0.558	Oct 2014	-		0.558	1.997	4.728	TBD
		Subtotal	25.778	5.645		6.738		8.226		-		8.226	20.880	67.267	-

	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	80.467	40.088		34.034		90.218		-		90.218	240.993	485.800	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0605018F / *AF Integrated Personnel and Pay System (AF-IPPS)*	**Project (Number/Name)** 676003 / *HRM Structural Development*



- On 3 Sep 13, the Government received a protest to the Contract 1 award and IBM was directed to stop work. The Government Accountability Office (GAO) process to evaluate the protest took 111 days (11-day delay to GAO timeline due to government shutdown) and was resolved on 23 Dec 2013. The stop work order was rescinded on 24 Dec 13 via a letter from the AFIPPS PCO.

CS - Contractor Support
CRP - Conference Room Pilot
DO - Delivery Order
FDD - Full Deployment Decision
FOP - Fair Opportunity Process
Int - Integration
I/T/F - Integration/Test/Field
LFD - Limited Fielding Decision
MAC - Multiple Award Contract
MS - Milestone

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0605018F / *AF Integrated Personnel and Pay System (AF-IPPS)*	**Project (Number/Name)** 676003 / *HRM Structural Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AFIPPS Development, Test, & Production Environments	1	2013	4	2019
Contract 1: Basic (Blue Printing/CRP)	1	2014	2	2015
Contract 1: Options (Release 1/CS)	3	2014	3	2017
Contract 2 (MAC/DO 1): Release 2/CS Options)	4	2014	1	2018
Contract 2 (MAC/DO 1): Release 3/CS Options)	4	2014	1	2019
Contract 2 (MAC/DO 2): Release 4/CS Options)	1	2016	3	2019
Contract 2 (MAC/DO 3): Release 5/CS Options)	2	2017	4	2019
AF Information Technology Efforts	1	2013	4	2019
Independent Verification and Validation (IV&V)	3	2013	4	2019
Government Integrated Test and Evaluation	1	2013	4	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0605024F / *Anti-Tamper Technology Executive Agency*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	30.413	26.541	34.815	-	34.815	29.895	28.308	28.823	29.369	Continuing	Continuing
675066: *Anti-Tamper Technology Executive Agent*	-	30.413	26.541	34.815	-	34.815	29.895	28.308	28.823	29.369	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Air Force is the DoD Anti-Tamper Executive Agent (ATEA). The ATEA is responsible for developing and implementing Anti-Tamper (AT) policy, coordinating and providing financial support for AT technology development and evaluations, hardware/software vulnerability assessments, laboratory infrastructure, establishing and maintaining a data bank/library of Anti-Tamper technologies, providing proper security mechanisms, and conducting effective validation and verification of AT implementations. The purpose of AT is to protect critical program information in U.S. weapon systems that may be sold to foreign governments or that could possibly fall into enemy hands. AT protections will permit the U.S. to preserve its technological advantage of critical weapons systems while supporting the warfighters mission requirements. Furthermore, AT will add longevity to DoD critical technologies by deterring efforts to reverse engineer or develop weapon countermeasures against a system or system component.

The DoD ATEA will coordinate technology development and enhancement efforts among the DoD Services/Agencies, National Laboratories, and industry. The DoD ATEA acquisition strategy is to fund development of new AT technology, as well as enhancing existing AT technology efforts to increase the technology readiness level (TRL). The AT technology development and enhancement efforts will occur in multiple areas, including the following: Advanced sensor hardware, secure processing, crypto-analysis, tamper penalties, and power solutions. Emerging research in the areas of materials, cryptography and electronic circuits has the potential to bring new AT capabilities that have reduced power needs and smaller form factor. The goal of the research is to mature promising technologies to the point that they can be transitioned to a program office or industry for implementation in our weapons systems. Priorities will be given to those technologies that most benefit the DoD AT community.

All DoD acquisition programs, Foreign Military Sales, and Direct Commercial Sales with critical program information (CPI) and/or resident-critical program information (R-CPI) require a validated AT Plan. The AT program includes resources required for the subject matter experts (SMEs) to review AT Plans and conduct AT validation, and perform AT assessments of both commercial off the shelf and government of the shelf products. To maintain its advantage, the AT program continues to improve its AT hardware/software assessment capabilities. These capabilities include the acquisition of specialized equipment, maintenance and/or renovations to support the integration of this equipment, and modifications to new and/or existing laboratory facilities to meet equipment and security requirements.

This program is in Budget Activity 07, Operational System Development, because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0605024F / *Anti-Tamper Technology Executive Agency*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	17.037	32.086	39.830	-	39.830
Current President's Budget	30.413	26.541	34.815	-	34.815
Total Adjustments	13.376	-5.545	-5.015	-	-5.015
• Congressional General Reductions	-0.049	-			
• Congressional Directed Reductions	-	-5.545			
• Congressional Rescissions	-	-			
• Congressional Adds	20.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.470	-			
• SBIR/STTR Transfer	-0.531	-			
• Other Adjustments	-0.574	-	-5.015	-	-5.015

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2013	FY 2014
Project: 675066: *Anti-Tamper Technology Executive Agent*		
Congressional Add: *Alternative Power Sources*	20.000	-
Congressional Add Subtotals for Project: 675066	20.000	-
Congressional Add Totals for all Projects	20.000	-

Change Summary Explanation

FY13: Reduction in other adjustments for sequestration; reprogrammed funds due to higher Air Force priorities.

FY14: Congressional Directed Reduction due to forward financing.

FY15: Reduction due to higher Air Force priorities.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Anti-Tamper Technology	7.913	23.706	31.865
Description: Continue development of AT technology development and evaluations, hardware/software vulnerability assessments, laboratory infrastructure, alternate power sources, conduct effective validation and verification of AT implementation as well as implementation of AT policy.			
FY 2013 Accomplishments:			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0605024F / *Anti-Tamper Technology Executive Agency*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue development of AT technology development and evaluations, hardware/software vulnerability assessments, laboratory infrastructure, alternate power sources, conduct effective validation and verification of AT implementation as well as implementation of AT policy. ***FY 2014 Plans:*** Continue advanced Anti-Tamper Technology Executive Agent activities including: AFRL/RYW Management, ATEA outsourcing, Anti-Tamper Verification and Validation, Assessments and Technology Development. ***FY 2015 Plans:*** Continue development of AT technology development and evaluations, hardware/software vulnerability assessments, laboratory infrastructure, alternate power sources, conduct effective validation and verification of AT implementation as well as implementation of AT policy.			
Title: Program Management Support ***Description:*** Includes A&AS, travel,supplies, civilian pay, AFLCMC/WWG support ***FY 2013 Accomplishments:*** Includes A&AS, travel,supplies, civilian pay, AFLCMC/WWG support ***FY 2014 Plans:*** Includes A&AS, travel,supplies, civilian pay, AFLCMC/WWG support ***FY 2015 Plans:*** Includes A&AS, travel,supplies, civilian pay, AFLCMC/WWG support	2.500	2.835	2.950
Accomplishments/Planned Programs Subtotals	10.413	26.541	34.815

	FY 2013	FY 2014
Congressional Add: Alternative Power Sources ***FY 2013 Accomplishments:*** Alternative power sources for anti-tamper technology	20.000	-
Congressional Adds Subtotals	20.000	-

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• NONE: *N/A*	-	-	-	-	-	-	-	-	-	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0605024F / *Anti-Tamper Technology Executive Agency*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost

Remarks

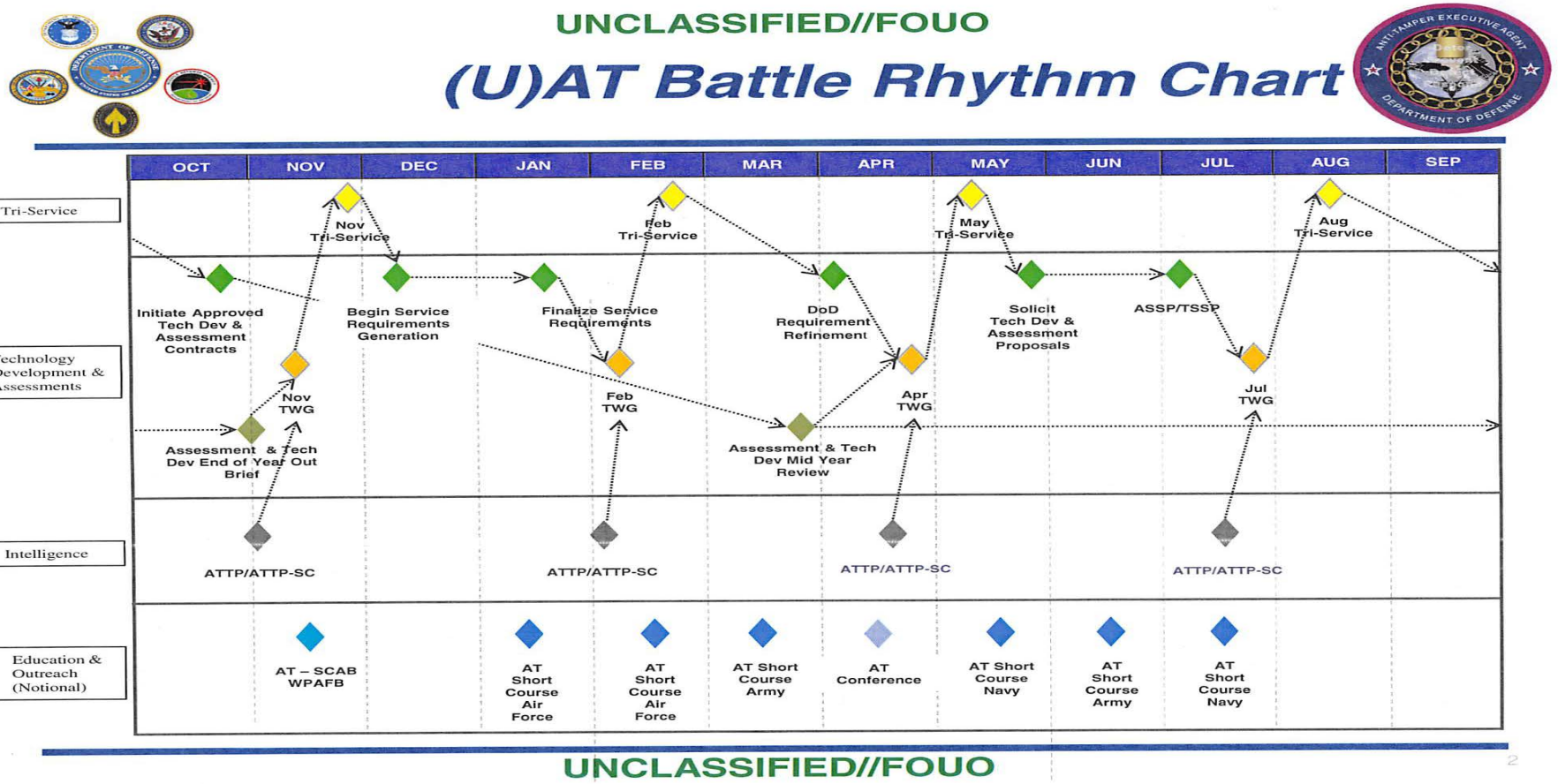
E. Acquisition Strategy

The DoD ATEA acquisition strategy is to fund development and assessments of new AT technology, as well as enhance existing AT technology efforts by increasing TRL. The AT technology development and enhancement efforts will occur in multiple areas, including the following: Advanced sensor hardware, secure processing, crypto-analysis, tamper penalties, and power solutions. Emerging research in the areas of materials, cryptography and electronic circuits has the potential to bring new AT capabilities that have reduced power needs and smaller form factor. The goal of the research is to mature promising technologies to the point that they can be transitioned to a program office or industry for implementation in our weapons systems. Priorities will be given to those technologies that most benefit the DoD AT community.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0605024F / *Anti-Tamper Technology Executive Agency*	**Project (Number/Name)** 675066 / *Anti-Tamper Technology Executive Agent*



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101113F / *B-52 SQUADRONS*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	17.951	17.007	55.457	-	55.457	62.642	28.653	20.328	4.365	-	206.403
675039: *B-52 System Improvements*	-	0.052	-	-	-	-	-	-	-	-	-	0.052
675048: *1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)*	-	15.659	4.373	41.134	-	41.134	60.665	26.277	15.370	-	-	163.478
675049: *MODE S/5 IFF*	-	1.511	-	-	-	-	-	-	-	-	-	1.511
675050: *CONECT*	-	-	12.634	14.323	-	14.323	1.977	2.376	4.958	4.365	-	40.633
675051: *ANTI-SKID*	-	0.729	-	-	-	-	-	-	-	-	-	0.729

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, 675048, 1760 IWBU includes new start efforts.

A. Mission Description and Budget Item Justification

B-52 SYSTEM IMPROVEMENTS (BPAC 675039)
Project 675039 System Improvements, changed from B-52 Modernization.

B-52 System Improvements is a comprehensive project to ensure B-52 viability to perform current and future wartime missions to include datalinks, navigation, sensors, weapons, electronic warfare (EW), and training capabilities. B-52 System Improvements integrates and adds both tactical and global datalink communications for real time command and control, targeting, and intelligence. It upgrades antiquated Air Traffic Management (ATM) systems with those supported by three key functions using satellite technology: Communications, Navigation and Surveillance (CNS). B-52 System Improvements upgrades training devices to support aircrew and maintenance training with the latest B-52 capability. In addition, it improves conventional warfare capability with additional MIL-STD-1760 smart weapons and improved weapons carriage and fully integrates advanced targeting pods with the offensive avionics system. It studies, analyzes, and tests aircraft systems' hardness to Chemical, Biological, Radiological, and Nuclear (CBRN) weapons effects, such as Low Level Continuous Wave (LLCW) and High altitude Electromagnetic Pulse (HEMP) Survivability tests. It upgrades mission critical systems to survive in CBRN environments. B-52 System Improvements upgrades or replaces legacy defensive EW systems to include the radar warning receiver, jammers, chaff and flare dispensers and situational awareness displays as well as integration of offensive EW such as the Miniature Air-Launched Decoy (MALD) and MALD-Jammer (MALD-J).

Engineering Studies & Analysis and Test & Evaluation

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*

B-52 system improvements funds test activities at the Air Force Flight Test Center (AFFTC), engineering and planning studies for potential future weapon system enhancements (weapons, sensors, avionics, and EW) and emerging requirement on current projects, upgrades to the B-52 Systems Integration Laboratory (SIL), Avionics Integration Support Facility (AISF), and Weapon System Trainers (WSTs), and weapon system operational/safety, supportability, reliability, and Total Ownership Cost (TOC) improvements.

Additional Efforts
B-52 system improvements funds additional efforts that stem from the operation and maintenance of a 50-plus-year-old aircraft, such as parts obsolescence, Diminishing Manufacturing Sources (DMS), and emerging requirements to add to or maintain the existing capabilities. Examples include, but are not limited to upgrades to outdated avionics computers, mission planning interfaces to Joint Mission Planning Software (JMPS), Air Force Mission Support System (AFMSS), upgrades to the EW suite, and studies and analysis. All B-52 development projects support planned requirements for unique identification in their production phases.

B-52 COMBAT NETWORK COMMUNICATIONS TECHNOLOGY (CONECT) (BPAC 675050)
The B-52 CONECT acquisition project supports nuclear and conventional operations by upgrading the B-52 fleet with tactical datalink and voice communications capabilities along with improved threat and situational awareness to support participation in network centric operations. The CONECT upgrade includes new Multi-Functional Color Displays (MFCDs) and a digital interphone system, which will survive and function through the nuclear environment to enhance crew interaction and situational awareness. To enable net centric operations, the CONECT upgrade integrates: on-board client/server architecture supporting distributed processing with independent control functions; UHF Beyond Line-Of-Sight (BLOS) Joint Range Extension (JRE) capability via ARC-210 Warrior radio to exchange J-Series messaging within theater; Intelligence Broadcast Receiver (IBR); limited Internet Protocol (IP) based UHF BLOS link supporting voice, e-mail and file transfers; and Improved Data Modem (IDM)-based digital Variable Message Format (VMF) datalink to significantly enhance close air support (CAS) missions. This integrated suite will provide the B-52 fleet with a machine-to-machine data transfer capability supporting aircraft re-tasking and retargeting of Conventional Air Launched Cruise Missile (CALCM) and J-series weapons across the range of B-52 military operations and missions. This requirement's Capability Development Document (CDD) was validated by the Air Force Requirement's Oversight Capability Council (AFROCC) on 18 March 2004.

Trainers and Upgrades for CONECT
In order to maintain currency with the latest aircraft configuration, the CONECT project will update existing trainers or use computer-based training to add CONECT functionality to meet user-training requirements, and update/maintain the SIL for the WSTs.

B-52 1760 INTERNAL WEAPONS BAY UPGRADE (IWBU) (BPAC 675048)
The 1760 IWBU requires the integration of the 1760 weapons capability into the bomb bay on 78 B-52H aircraft, which includes two Ground Instructional Training Aircraft (GITA), utilizing 44 Common Strategic Rotary Launcher (CSRLs) converted into Conventional Rotary Launchers (CRLs), where three of the CRLs will be modified under Engineering Manufacturing and Development (EMD) for test purposes. This requirement's Capability Development Document (CDD) was validated by the AFROCC in April 2013. The 1760 IWBU project provides internal and external carriage for eight weapons and consists of two sub increments: 1.1 and 1.2.

Increment 1.1 consists of internal carriage of eight Joint Direct Attack Munitions (JDAM) and variants, to include Laser JDAM (LJDAM), on a rotary launcher. Additionally, this increment develops the capability for external carriage for 16 LJDAM.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*

Increment 1.2 develops the capability for internal carriage of eight Joint Air-to-Surface Standoff Missiles (JASSM) and its variants, to include JASSM-Extended Range (JASSM-ER), and eight Miniature Air Launched Decoys (MALD) and its variants, to include MALD Jammer (MALD-J). This increment also develops the capability for external carriage for 12 JASSM-ER.

B-52 MODE S/5 IFF (BPAC 675049)
Mode S/5 Identification, Friend or Foe (IFF) is part of the Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) effort and will develop and integrate modern IFF technology into the B-52 to enable it to operate in the evolving air traffic environment. This effort is driven by International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) mandates to comply with performance standards to allow the B-52 to operate safely in controlled airspaces. Aircraft not equipped with appropriate capabilities will not be able to operate in airspace where new separation standards and air traffic management procedures are implemented. An additional benefit is the significant fuel savings that will result in being able to fly at optimum and more efficient routes and altitudes. DoD mandates Joint Requirements Oversight Council Memorandum (JROCM) 047-07 (signed March 2007) and JROCM 122-08 (signed June 2008) dictate replacement of the B-52's APX-64 IFF (Identification, Friend or Foe) Transponder with a modern Mode S/5 transponder. This requirement was validated by Air Force Form 1067, signed in November 2011.

B-52 ANTI-SKID REPLACEMENT (BPAC 675051)
The B-52 Anti-skid system is used to maintain control of aircraft during landings and taxi operations. The B-52 Anti-skid system prevents aircraft skidding by sensing the exact amount of brake pressure needed for safe braking under all runway conditions without tire damage. Previous B-52 Anti-skid supportability analysis, completed in 2006 by General Atomics indicated a supportability end date of 2011, based on parts obsolescence, a lack of test equipment, and a lack of repair personnel. Parts obsolescence continues to be a major supportability factor. However, since the previous analysis, test equipment and new depot maintenance procedures to refurbish previously failed Anti-skid detectors have been put in place in order to provide spares through 2015 when the replacement will be available. The Anti-skid Replacement project develops and installs a new system. This effort includes an upgrade of the maintenance trainers. This requirement was validated by Air Force Form 1067, signed in July 2009.

ARMS CONTROL ACTIVITIES (Funding is in the ARMS Control PE, 0305145F)
Arms Control Activities under the New START Treaty drives the need to modify a number of B-52s to a conventional only role by removing the Code Enable Switch and associated equipment. This effort requires a complete design to remove the equipment from the aircraft and install metal plates prohibiting reinstallation of removed equipment to comply with treaty protocols.

These projects are in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force					Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*		R-1 Program Element (Number/Name) PE 0101113F / *B-52 SQUADRONS*			
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	53.208	24.007	20.187	-	20.187
Current President's Budget	17.951	17.007	55.457	-	55.457
Total Adjustments	-35.257	-7.000	35.270	-	35.270
• Congressional General Reductions	-0.025	-			
• Congressional Directed Reductions	-34.700	-7.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.532	-			
• Other Adjustments	-	-	35.270	-	35.270

Change Summary Explanation

FY13 adjustments: -$34.7M Congressional Mark for CONECT Restructure, -$.532 for Small Business Innovation Research (SBIR), and -$.025M in Congressional General Reductions.

FY14 adjustments: -$3.0M Congressional Mark 1760 Internal Weapons Bay Upgrade Flight Test Delay, and -$4.0M Program decrease.

FY15 adjustments: +$2.40M for fully funded CONECT (76 acft), and +$32.87M for fully funded 1760 IWBU Inc 1.1 and Inc 1.2

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / *B-52 SQUADRONS*	Project (Number/Name) 675039 / *B-52 System Improvements*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675039: *B-52 System Improvements*	-	0.052	-	-	-	-	-	-	-	-	-	0.052
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

B-52 SYSTEM IMPROVEMENTS
Project 675039 System Improvements, changed from B-52 Modernization.

B-52 System Improvements is a comprehensive project to ensure B-52 viability to perform current and future wartime missions to include datalinks, navigation, sensors, weapons, electronic warfare (EW), and training capabilities. B-52 System Improvements integrates and adds both tactical and global datalink communications for real time command and control, targeting, and intelligence. It upgrades antiquated Air Traffic Management (ATM) systems with those supported by three key functions using satellite technology: Communications, Navigation and Surveillance (CNS). B-52 System Improvements upgrades training devices to support aircrew and maintenance training with the latest B-52 capability. In addition, it improves conventional warfare capability with additional MIL-STD-1760 smart weapons and improved weapons carriage and fully integrates advanced targeting pods with the offensive avionics system. It studies, analyzes, and tests aircraft systems' hardness to Chemical, Biological, Radiological, and Nuclear (CBRN) weapons effects, such as Low Level Continuous Wave (LLCW) and High altitude Electromagnetic Pulse (HEMP) Survivability tests. It upgrades mission critical systems to survive in CBRN environments. B-52 System Improvements upgrades or replaces legacy defensive EW systems to include the radar warning receiver, jammers, chaff and flare dispensers and situational awareness displays as well as integration of offensive EW such as the Miniature Air-Launched Decoy (MALD) and MALD-Jammer (MALD-J).

BA7- This project is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: B-52 Radar Modernization Program Initiative (RMP)	0.052	-	-
Description: Campaign-level modeling and simulation (M&S) effort to support a future B-52 RMP initiative. Specifically, M&S will provide quantitative justification highlighting the increased reliability and operational leverage a new active electronically scanned array (AESA) radar will provide current and future mission sets to support the Defense Strategic Guidance and the President's rebalance to the Pacific. ***FY 2013 Accomplishments:*** Completed studies for Campaign-level M&S effort to support a future B-52 Radar Modernization Program initiative.			
Accomplishments/Planned Programs Subtotals	0.052	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675039 / *B-52 System Improvements*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA07: PE 0305145F: *Arms Control Implementation*	4.000	-	-	-	-	-	-	-	-	-	4.000
• APAF: BA 05: Line Item # B05200: *Arms Control Implementation*	-	0.500	0.198	-	0.198	0.099	0.198	-	-	-	0.995

Remarks

D. Acquisition Strategy

The RMP M&S effort was conducted organically by AFGSC/A5B and various AFLCMC (Wright-Patterson AFB) organizations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675039 / *B-52 System Improvements*

UNCLASSIFIED

B-52 Squadrons

System Improvements Schedule

Activity		FY13				FY14				FY15				FY16				FY17				FY18				FY19			
		Q2	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
System Improvements	Milestones	Radar Modernization Program								M&S effort																			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / *B-52 SQUADRONS*	Project (Number/Name) 675048 / *1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675048: *1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)*	-	15.659	4.373	41.134	-	41.134	60.665	26.277	15.370	-	-	163.478
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, 675048, 1760 IWBU includes new start efforts.

A. Mission Description and Budget Item Justification

MIL-STD-1760 Internal Weapons Bay Upgrade (IWBU) requires the integration of the 1760 weapons capability into the bomb bay on 78 B-52H aircraft, which includes two Ground Instructional Training Aircraft (GITA), utilizing 44 Common Strategic Rotary Launcher (CSRLs) converted into Conventional Rotary Launchers (CRLs), where three of the CRLs will be modified under Engineering Manufacturing and Development (EMD) for test purposes. The 1760 IWBU project is segmented into increments. Increment 1.0 provides internal and external carriage for eight weapons and consists of two sub increments: 1.1 and 1.2. This requirement's Capability Development Document (CDD) was validated by the Air Force Requirements Oversight Capability Council (AFROCC) in April 2013.

Increment 1.1

Increment 1.1 consists of internal carriage of eight Joint Direct Attack Munitions (JDAM) and variants, to include Laser JDAM (LJDAM), on a rotary launcher. This increment also develops the capability for external carriage for 16 LJDAM. The CRL Hardware modification consists of Group A (equipment racks and electrical wiring) and Group B (one Survivability/Vulnerability (SV) junction box and one Integrated Weapons Interface Unit (IWIU) per CRL). The IWIU Line Replaceable Unit (LRU) was previously developed under the Advanced Weapons Integration (AWI) project. No CSRL replacements will be required as a result of this project. Increment 1.1 completed Preliminary Design Review in February 2013 and awarded an EMD contract in September 2013. Critical Design Review (CDR) was conducted in October 2013.

Aircraft Hardware Development: None

Software Development: Consists of modifying aircraft Operational Flight Program (OFP) software, JDAM Stores Management Overlays (SMO) and ground based Joint Mission Planning System (JMPS).

CRL Hardware Development: Consists of modifying USSTRATCOM provided CSRLs by replacing nuclear mission equipment with Group B hardware and wiring interfaces. Group A includes equipment racks and electrical wiring; Group B includes one Survivability/Vulnerability (SV) junction box and one IWIU per CRL. The

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675048 / *1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)*

IWIU LRU was previously developed under the AWI project and work was previously accomplished during a 2005 demonstration and developed using 2006 and 2007 Congressional Add funding. Three CSRLs will be modified using RDT&E funds.

Support Equipment: Consists of developing software and 38 rotary launcher cable adapter sets on existing Multi-Use System Tester Armament Next Generation (MUSTANG) testers to interface with the CRL.

Increment 1.2

Increment 1.2 develops the capability for internal carriage of eight Joint Air-to-Surface Standoff Missiles (JASSM) and its variants, to include JASSM Extended Range (JASSM-ER), and eight Miniature Air Launched Decoys (MALD) and its variants, to include MALD Jammer (MALD-J). This increment also develops the capability for external carriage for 12 JASSM-ER.

Aircraft Hardware Development: Development of Group A wiring and circuit breakers to supply additional power to the CRL per JASSM-ER requirements, for all 76 operational B-52H aircraft, and two GITA aircraft.

Software Development: Development of a modification to existing aircraft SMO and weapon (JASSM and MALD) OFP software to allow for internal and external carriage and modification to ground based JMPS.

CRL Hardware Development: Develops Group A associated interface hardware and two Group B LRUs (one power supply and one power distribution box). Three CRLs will be modified using RDT&E funds.

Support Equipment: Consists of developing software updates to the existing MUSTANG to interface with the CRL and the development of additional ground handling support equipment.

BA7- This project is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: 1760 IWBU Inc 1.1	15.659	4.373	16.140
Description: Provides internal J-series weapons capability through modification of CSRLs with IWIUs and upgraded weapon management software.			
FY 2013 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675048 / *1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continued Increment 1.1 activities: Conducted SEEK EAGLE safe separation analysis, preliminary design review, critical design review, technical readiness review, continued formal qualification testing of JDAM SMO software, and entered the EMD phase. Continued B-52 JMPS development, testing, and certification. Began the design, coding, and testing of the ground maintenance computer program software. ***FY 2014 Plans:*** Continue Increment 1.1 development: Continue SEEK EAGLE safe separation analysis. Conduct ground testing of CRL prototype and JDAM SMO. Continue B-52 JMPS and Trainer/Ground Maintenance Computer Program (GMCP) software. Finalize drawings for CRL, and test support equipment modification kits to support Milestone C activity. Continue development of technical orders in preparation for kit-proof. Modify three prototype CRLs. ***FY 2015 Plans:*** Continue Increment 1.1 development: Continue SEEK EAGLE safe separation analysis. Continue ground and initiate flight testing of CRL prototype and JDAM SMO. Continue B-52 JMPS and Trainer/GMCP software. Finalize drawings for CRL, and test support equipment modification kits to support Milestone C activity. Continue development of technical orders in preparation for kit-proof. Continue modification of three prototype CRLs.			
Title: 1760 IWBU Inc 1.2 ***Description:*** Provides internal J-series weapons capability through modification of CSRLs with IWIUs, aircraft hardware modifications, and upgraded weapon management software. ***FY 2015 Plans:*** Implement Increment 1.2 development: Enter Tech Development phase. Award Tech Development and Weapon Operational Flight Program Software contracts. Begin designing and coding of software.	-	-	24.994
Accomplishments/Planned Programs Subtotals	15.659	4.373	41.134

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # B05200: *B-52*	-	-	6.724	-	6.724	14.599	3.763	0.377	41.986	-	-
• APAF: BA06: Line Item # 000999: *Initial Spares/Repair Parts*	-	-	0.449	-	0.449	1.093	0.952	-	0.112	-	-
• APAF: BA07: Line Item # B05200: *Depot Activation*	-	-	-	-	-	3.960	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675048 / *1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

The 1760 Internal Weapons Bay Upgrade project will acquire software development and hardware design via a sole-source contract to Boeing Defense, Space & Security (DSS), Oklahoma City, OK. Deliverables include an updated J-series weapon SMOs (software), three prototype modified CSRLs, six Low Rate Initial Production (LRIP) assets, logistics support, ground and flight test support, and engineering drawings. The project will competitively procure the CRL modification kits for full rate production, and installs of the kits will be completed via Contract Field Teams (CFTs).

Increment 1.1 consists of internal carriage of eight JDAM and variants, to include LJDAM, on a rotary launcher. This increment also develops the capability for external carriage for 16 LJDAM. The CRL Hardware modification consists of Group A (equipment racks and electrical wiring) and Group B (one SV junction box and one IWIU per CRL).

Increment 1.2 develops the capability for internal carriage of eight JASSM and its variants, to include JASSM-ER, or eight MALD and its variants, to include MALD-J. This increment also develops the capability for external carriage for 12 JASSM-ER.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675048 / *1760 INTERNAL WEAPONS BAY UPGRADE (IWBU)*

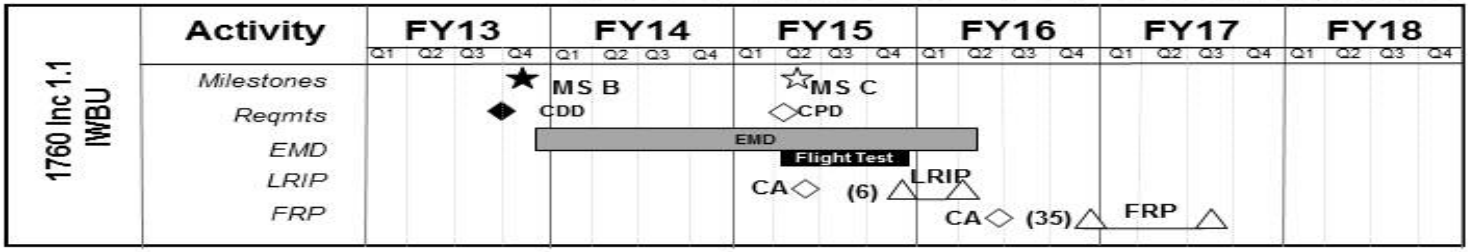
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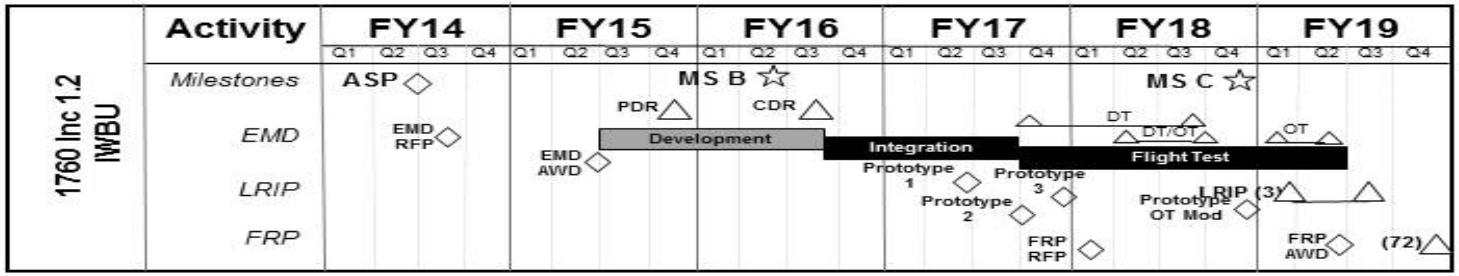
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B-52 Squadrons

1760 IWBU 1.1 Schedule



1760 IWBU 1.2 Schedule



Concept activities | Design / development | Integration / test
Production / fielding | Operations / sustainment | Key events

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Integrity - Service - Excellence

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / *B-52 SQUADRONS*	Project (Number/Name) 675049 / *MODE S/5 IFF*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675049: *MODE S/5 IFF*	-	1.511	-	-	-	-	-	-	-	-	-	1.511
Quantity of RDT&E Articles	4.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

The RDT&E effort for this project ends with FY13 funding.

A. Mission Description and Budget Item Justification

Mode S/5 IFF

Mode S/5 Identification, Friend or Foe (IFF) is part of the Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) effort and will develop and integrate modern IFF technology into the B-52 to enable it to operate in the evolving air traffic environment. This effort is driven by International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA) mandates to comply with performance standards to allow the B-52 to operate safely in controlled airspaces. Aircraft not equipped with appropriate capabilities will not be able to operate in airspace where new separation standards and air traffic management procedures are implemented. An additional benefit is the significant fuel savings that will result in being able to fly at optimum and more efficient routes and altitudes. DoD mandates Joint Requirements Oversight Council Memorandum (JROCM) 047-07 (signed March 2007) and JROCM 122-08 (signed June 2008) dictate replacement of the B-52's APX-64 IFF (Identification, Friend or Foe) Transponder with a modern Mode S/5 transponder. This requirement was validated by Air Force Form 1067, signed in November 2011.

CNS/ATM

Capabilities identified under CNS/ATM activities will include Frequency Modulation (FM) immunity management, digital communications (voice and data), improved navigation accuracy such as Required Navigation Performance (RNP) or Global Positioning System (GPS) enhancements, Reduced Vertical Separation Minimum (RVSM), enhanced situational awareness such as Mode S/Mode 5 IFF, Communications Management Unit, HF Data Link, Auto Dependent Surveillance-Broadcast (ADS-B), Selective Availability Anti-spoofing Module (SAASM) and any follow-on activities to associated components/systems resulting from modifications to CNS/ATM systems.

BA7- This project is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Mode S/5 IFF	1.511	-	-
Description: Integrates modern IFF technology onto the B-52 by replacing the current system with APX-119 required by DoD, FAA and the ICAO.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675049 / *MODE S/5 IFF*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: Upgraded the Systems Integration Lab (SIL); created developmental and operational test procedures; modified Electromagnetic Interference/Electromagnetic Compatibility (EMI/EMC) (safety of flight) test procedures; identified long-lead components; completed all fabrication drawings; developed Installation drawing packages; conducted SIL testing; supported ground/flight testing and completed Air Traffic Control Radar System IFF Mark XII/Mark XIIA, Air Traffic Control Radar Beacon System (ATCRBS); IFF, Mark XII/XIIA, Systems (AIMS); completed AFLCMC/HBAI Systems platform certification; and reported certification results. Updated technical orders and weapon system trainer configurations to include Mode S/5 IFF. Maintained interoperability with multiple configurations in the B-52 fleet.			
Accomplishments/Planned Programs Subtotals	1.511	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # B05200: *B-52*	-	9.590	10.626	-	10.626	2.488	-	-	-	-	-
• APAF: BA06: Line Item # 000999: *Initial Spares/Repair Parts*	-	0.143	0.896	-	0.896	0.074	-	-	-	-	-
• APAF: BA07: Line Item # B05200: *Depot Activation*	-	-	1.460	-	1.460	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

The Mode S/5 IFF Program's EMD contract is sole source to Boeing Defense, Space and Security (DSS), Oklahoma City, OK. This modification will be implemented via Contract Field Team (CFT).

E. Performance Metrics

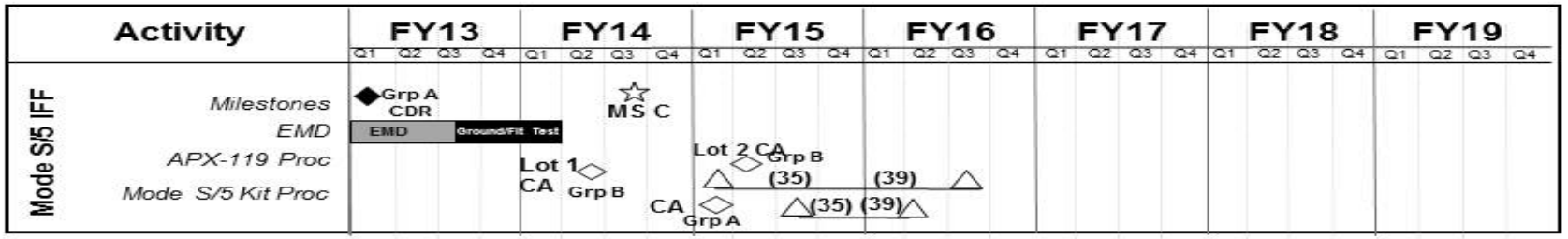
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675049 / *MODE S/5 IFF*

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B-52 Squadrons
Mode S/5 Schedule



Concept activities
Production / fielding
Design / development
Operations / sustainment
Integration / test
Key events

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / *B-52 SQUADRONS*	Project (Number/Name) 675050 / *CONECT*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675050: *CONECT*	-	-	12.634	14.323	-	14.323	1.977	2.376	4.958	4.365	-	40.633
Quantity of RDT&E Articles	2.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

PRIOR YEAR COSTS FOR CONECT FY 05 - FY 12 ARE CONTAINED IN BPAC 675039 B-52 MODERNIZATION. THIS DOCUMENT REFLECTS NEW BPAC 675050 WHICH WAS ESTABLISHED FY 13.

A. Mission Description and Budget Item Justification

The B-52 Combat Network Communications Technology (CONECT) acquisition project supports nuclear and conventional operations by upgrading the B-52 fleet with tactical datalink and voice communications capabilities along with improved threat and situational awareness to support participation in network centric operations. The CONECT upgrade includes new Multi-Functional Color Displays (MFCDs) and a digital interphone system, which will survive and function through the nuclear environment to enhance crew interaction and situational awareness. To enable net centric operations, the CONECT upgrade integrates: on-board client/server architecture supporting distributed processing with independent control functions; UHF Beyond Line-Of-Sight (BLOS) Joint Range Extension (JRE) capability via ARC-210 Warrior radio to exchange J-Series messaging within theater; Intelligence Broadcast Receiver (IBR); limited Internet Protocol (IP)-based UHF BLOS link supporting voice, e-mail and file transfers; and Improved Data Modem (IDM)-based digital Variable Message Format (VMF) datalink to significantly enhance close air support (CAS) missions. This integrated suite will provide the B-52 fleet with a machine-to-machine data transfer capability supporting aircraft re-tasking and re-targeting of Conventional Air Launched Cruise Missile (CALCM) and J-series weapons across the range of B-52 military operations and missions. This requirement's Capability Development Document (CDD) was validated by the Air Force Requirement's Oversight Capability Council (AFROCC) on 18 March 2004.

Additional funds have been added to the project for the completion of the CONECT capability development and the CONECT capability inclusion into the required B-52 training systems, and production/installation/initial support for a total of 76 CONECT capable aircraft (2 kits were funded in EMD). The LRIP Lot 1 contract awarded in May 2013. The test aircraft will maintain the installed CONECT configuration and will be used to evaluate efforts to maintain and/or update B-52 CONECT capabilities. As the CONECT upgrade brings additional capability to the B-52, emerging communication requirements (upgrades to IBR, JRE messages, etc.) and aircraft upgrades (1760 Internal Weapons Bay Upgrade, Mode S/Mode 5 Identification, Friend or Foe (IFF), etc.) may require study for potential impacts to CONECT.

TRAINERS AND UPGRADES FOR CONECT
In order to maintain currency with the latest aircraft configuration, the CONECT project will update existing trainers or use computer-based training to add CONECT functionality to meet user-training requirements, and update/maintain the system integration laboratory (SIL) for the Weapon System Trainers (WST).

This project is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675050 / *CONECT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: CONECT	-	12.634	14.323
Description: Continue Diminishing Manufacturing Source (DMS) redesign development and test effort. Continuation of engineering design of CONECT capability into the B-52 training systems. Begin incorporating changes required due to updates in Government Furnished Equipment (GFE) and crypto modernization requirements. Incorporate/integrate CONECT with recurring updates of the B-52 software baseline. As the CONECT upgrade brings additional capability to the B-52, emerging communication requirements (upgrades to the IBR, JRE messages, etc.) and aircraft upgrades (1760 Internal Weapons Bay Upgrade, Mode S/Mode 5 IFF, etc.) may require study for potential impacts to CONECT. CONECT will begin update of the existing trainers or use computer-based training to add CONECT functionality to meet user-training requirements, and update/ maintain the SIL for the WST. ***FY 2014 Plans:*** Continue DMS redesign development and test effort. Continuation of engineering design of CONECT capability into the B-52 training systems. Incorporate changes required due to updates in GFE and crypto modernization requirements. Incorporate/ integrate CONECT with recurring updates of the B-52 software baseline. As the CONECT upgrade brings additional capability to the B-52, emerging communication requirements (upgrades to the IBR, JRE messages, etc) and aircraft upgrades (1760 Internal Weapons Bay Upgrade, Mode S/Mode 5 IFF, etc) may require study for potential impacts to CONECT. CONECT will begin update of the existing trainers or use computer-based training to add CONECT functionality to meet user-training requirements, and update/maintain the SIL for the WST. ***FY 2015 Plans:*** Complete DMS redesign development and test effort. Continuation of engineering design of CONECT capability into the B-52 training systems. Incorporate changes required due to updates in GFE and crypto modernization requirements. Incorporate/ integrate CONECT with recurring updates of the B-52 software baseline. As the CONECT upgrade brings additional capability to the B-52, emerging communication requirements (upgrades to the IBR, JRE messages, etc) and aircraft upgrades (1760 Internal Weapons Bay Upgrade, Mode S/Mode 5 IFF, etc) may require study for potential impacts to CONECT. CONECT will begin update of the existing trainers or use computer-based training to add CONECT functionality to meet user-training requirements, and update/maintain the SIL for the WST.			
Accomplishments/Planned Programs Subtotals	-	12.634	14.323

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # B05200: *B-52*	-	74.221	153.778	-	153.778	142.606	123.631	81.921	56.840	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675050 / *CONECT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA06: Line Item # B05200: *Initial Spares\Repair Parts*	-	2.226	5.966	-	5.966	5.504	4.366	1.688	1.888	-	-
• APAF: BA07: Line Item # B05200: *Post Production Support*	-	7.000	5.249	-	5.249	7.041	8.731	-	-	-	-
• APAF:BA07: Line Item # B05200: *Depot Activation*	-	-	0.198	-	0.198	0.198	1.488	13.208	15.901	-	-

Remarks

D. Acquisition Strategy

The B-52 CONECT EMD prime contract is a sole source to Boeing Defense, Space & Security (DSS), Oklahoma City, OK. Boeing designs, develops, tests and procures necessary equipment from their subcontractors; developed engineering drawings, logistic and technical data, and time compliance technical order (TCTO) for installation on the B-52. Pro-Active Systems is the current contractor for the trainer update to integrate CONECT into the existing trainers.

E. Performance Metrics

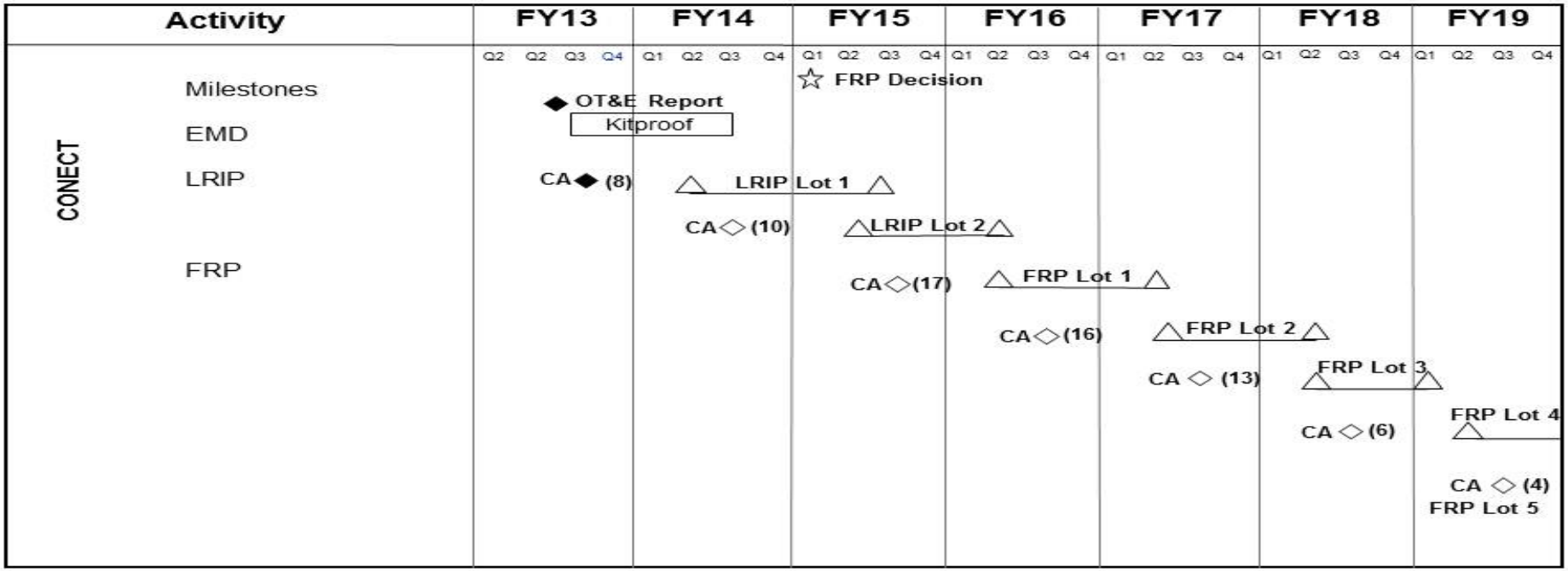
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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675050 / *CONECT*

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U.S. AIR FORCE

B-52 Squadrons
CONECT Schedule



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Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101113F / *B-52 SQUADRONS*	Project (Number/Name) 675051 / *ANTI-SKID*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675051: *ANTI-SKID*	-	0.729	-	-	-	-	-	-	-	-	-	0.729
Quantity of RDT&E Articles	2.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

The RDT&E effort for this project ends with FY13 funding.

A. Mission Description and Budget Item Justification

The B-52 Anti-skid system is used to maintain control of aircraft during landings and taxi operations. The B-52 Anti-skid system prevents aircraft skidding by sensing the exact amount of brake pressure needed for safe braking under all runway conditions without tire damage. Previous B-52 Anti-skid supportability analysis, completed in 2006 by General Atomics indicated a supportability end date of 2011, based on parts obsolescence, a lack of test equipment, and a lack of repair personnel. Parts obsolescence continues to be a major supportability factor. However, since the previous analysis, test equipment and new depot maintenance procedures to refurbish previously failed Anti-skid detectors have been put in place in order to provide spares through 2015 when the replacement will be available. The Anti-skid Replacement project develops and installs a new system. This effort includes an upgrade of the maintenance trainers. This requirement was validated by Air Force Form 1067, signed in July 2009.

BA7- This project is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Anti-skid	0.729	-	-
Description: Replaces legacy B-52 Anti-skid system with modernized system improving safety and cockpit display. Anti-skid detector has been identified a critical obsolescence item, which begins to be unsupportable in FY15. Development activities completed in FY13.			
FY 2013 Accomplishments: Completed flight test activities and flight test reports.			
Accomplishments/Planned Programs Subtotals	0.729	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675051 / *ANTI-SKID*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # B05200: *B-52*	-	4.637	5.879	-	5.879	0.891	0.907	0.924	0.941	-	-
• APAF: BA06: Line Item # B05200: *Initial Spares/Repair Parts*	-	0.384	0.583	-	0.583	0.048	-	-	-	-	-

Remarks

D. Acquisition Strategy

The B-52 Anti-skid program is a combined effort between the Oklahoma City Air Logistics Complex (OC-ALC) and the Ogden Air Logistics Complex (OO-ALC). The modification will be implemented via Contract Field Team (CFT).

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101113F / *B-52 SQUADRONS*	**Project (Number/Name)** 675051 / *ANTI-SKID*

UNCLASSIFIED

U.S. AIR FORCE

B-52 Squadrons
Anti-Skid Schedule

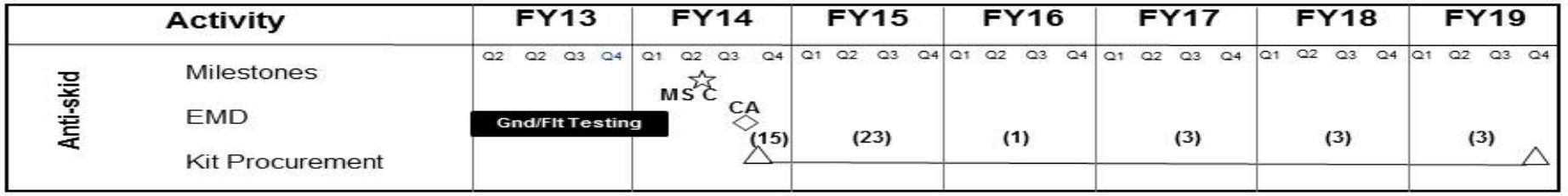


Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101122F / *Air-Launched Cruise Missile (ALCM)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.322	0.450	0.450	-	0.450	0.454	0.462	0.471	0.481	Continuing	Continuing
674797: *Flight Testing & Navigation Enhancement*	-	0.322	0.450	0.450	-	0.450	0.454	0.462	0.471	0.481	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The AGM-86B, Air Launched Cruise Missile (ALCM), is a subsonic, air-to-surface strategic nuclear missile, operational since 1982. Armed with a W80 warhead, it is designed to evade air and ground-based defenses in order to strike targets at any location within any enemy's territory. The ALCM is designed for B-52H internal and external carriage.

The purpose of this program is to ensure ALCM sustainability through 2030 in support of Air Force strategic nuclear deterrence and global strike mission requirements.

An ALCM Service Life Extension Program (SLEP) was developed to support ALCM Service Life through 2030. The results of SLEP studies identified system components and support equipment that will become non-supportable prior to 2030. Service life extension of this critical weapon is essential to meet United States Strategic Command (USSTRATCOM) deliberate planning commitments. Development funds are required to add capabilities to assist in identifying candidate components for future SLEP efforts.

The Aging and Surveillance program for ALCM continuously assesses critical components such as those in the safe arm and fuze subsystem, navigation/guidance system, and electrical/power distribution system. The program identifies aging trends prior to failures in fielded components that would result in fleet-wide reliability and supportability problems. Development funds are required to update software, test procedures, and test equipment. FY15 funding will complete the Guided Missile Flight Controller sub-component testing and allow for the development of test capabilities for additional ALCM components.

As part of the build phase of the sustaining engineering approach, the program has developed a plan for ALCM sustainment using a computer-aided decision making process called the ALCM Sustainment Enhancement Toolbox (ASET). The first phase of ASET is the ALCM Report Recommendation Tool (ARRT). FY15 funds are required to continue developing test procedures to implement the Chairman of the Joint Chiefs of Staff (CJCS)-directed requirement for High-Altitude Electromagnetic Pulse (HEMP) testing for nuclear systems.

BA7- This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101122F / *Air-Launched Cruise Missile (ALCM)*	

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	0.431	0.450	0.455	-	0.455
Current President's Budget	0.322	0.450	0.450	-	0.450
Total Adjustments	-0.109	-	-0.005	-	-0.005
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.009	-			
• Other Adjustments	-0.100	-	-0.005	-	-0.005

Change Summary Explanation

FY13: Other Adjustments, -$.100M due to Sequestration

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: ALCM Aging and Surveillance Program (DMS A&S)	0.280	0.185	0.339
Description: Continue Aging and Surveillance program for ALCM system components to identify age-related failure trends and prevent reliability and supportability issues. ***FY 2013 Accomplishments:*** Continued Aging and Surveillance program for ALCM system components to identify age-related failure trends and prevent reliability and supportability issues. Developed High Altitude Electromagnetic Pulse (HEMP) Test procedures. Continued development of ALCM Sustainment Enhancement Toolbox (ASET). ***FY 2014 Plans:*** Continue Aging and Surveillance program for ALCM system components at a reduced level of effort due to a higher HEMP test priority. Will resume planned level of Aging and Surveillance effort in FY15. ***FY 2015 Plans:*** Continue Aging and Surveillance Program for ALCM system components to identify age-related failure trends and prevent reliability and supportability issues.			
Title: ALCM HEMP Test Plan Development (DMS A&S)	0.042	0.225	0.111

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101122F / *Air-Launched Cruise Missile (ALCM)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Develops test procedures to implement a new CJCS-directed requirement for High-Altitude Electromagnetic Pulse (HEMP) testing for nuclear systems. ***FY 2013 Accomplishments:*** Developed test procedures to implement a new CJCS-directed requirement for High-Altitude Electromagnetic Pulse (HEMP) testing for nuclear systems. ***FY 2014 Plans:*** Continue development of test procedures to implement CJCS-directed requirement for High-Altitude Electromagnetic Pulse (HEMP) testing for nuclear systems. ***FY 2015 Plans:*** Complete development of test procedures to implement CJCS-directed requirement for High-Altitude Electromagnetic Pulse (HEMP) testing for nuclear systems.			
Title: ALCM Sustainment Enhancement Tool (ASET) (DMS A&S) ***Description:*** Develop a plan for ALCM sustainment using a computer-aided decision-making process. The first phase of ASET is the ALCM Report Recommendation Tool (ARRT). ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Develop a plan for ALCM sustainment using a computer-aided decision-making process. The first phase of ASET is the ALCM Report Recommendation Tool (ARRT). ***FY 2015 Plans:*** N/A	-	0.040	-
Accomplishments/Planned Programs Subtotals	0.322	0.450	0.450

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• MPAF: BA03: Line Item # MALCBG: *ALCM, Missile Modifications*	13.602	6.888	16.083	-	16.083	3.059	-	-	-	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101122F / *Air-Launched Cruise Missile (ALCM)*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• MPAF: BA04: Line Item # MALCBG: *ALCM, Replenishment Spares*	5.206	4.561	4.767	-	4.767	2.216	2.258	2.299	2.342	Continuing	Continuing
• OPAF: BA03: Line Item # MALCBG: *ALCM, Electronics & Telecomunications Equipment (BP83)*	1.632	1.125	1.989	-	1.989	1.920	1.738	1.768	1.800	Continuing	Continuing

Remarks

E. Acquisition Strategy

The ALCM Aging and Surveillance Program is being executed by the prime contractor utilizing annual delivery orders on a Firm Fixed Price (FFP) contract.

The HEMP test development will be funded via a Military Interdepartmental Purchase Request (MIPR) to White Sands Missile Range, NM.

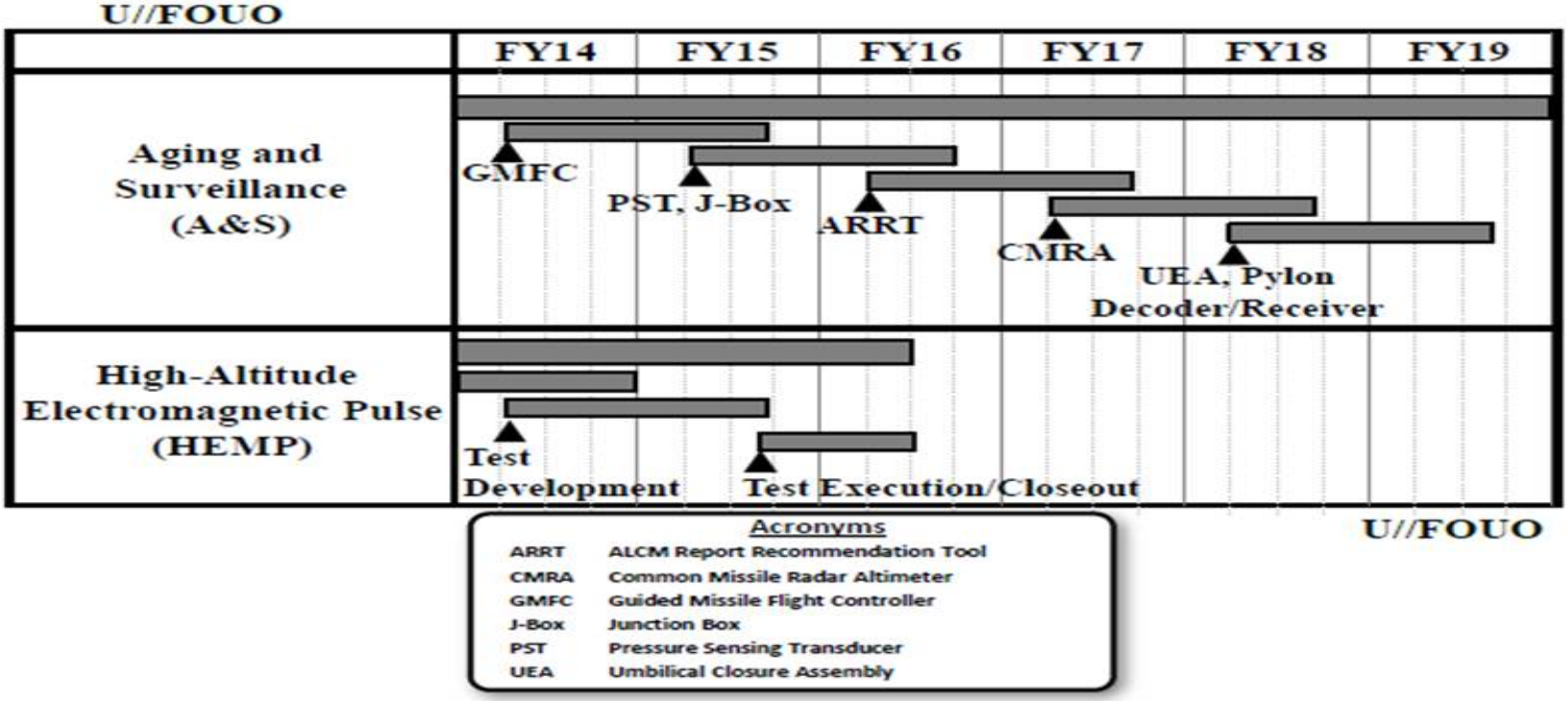
ARRT is a 206-funded organic workload to the Tinker Software Lab.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101122F / *Air-Launched Cruise Missile (ALCM)*	**Project (Number/Name)** 674797 / *Flight Testing & Navigation Enhancement*

Air Launched Cruise Missile



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101126F / *B-1B Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	13.126	12.774	5.353	-	5.353	4.040	1.945	-	-	-	37.238
675344: *B-1B Modernization*	-	13.126	12.774	5.353	-	5.353	4.040	1.945	-	-	-	37.238
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The B-1B Lancer is a swing-wing, supersonic, long-range, conventional bomber. It carries the largest payload of both guided and unguided weapons in the United States Air Force inventory. The multi-mission B-1B is the backbone of America's long-range conventional bomber force and can rapidly deliver massive quantities of precision and non-precision weapons against any adversary, anywhere in the world, at any time. The current service life extends beyond 2040.

This effort provides funding for B-1B modernization programs. These modernization programs alleviate aircraft obsolescence issues due to Diminishing Manufacturing Sources (DMS) while at the same time providing improved capabilities to the B-1B weapon system that require significant hardware and software development and testing.

Funds address upgrades to the Secure Line of Sight (SLOS) / Beyond Line of Sight (BLOS) / Air Radio Communication (ARC-210) voice capability. The SLOS/BLOS ARC 210 voice capability adds secure voice capabilities to the radio currently utilized only for secure data. This will add much needed capability to our forces currently operating in forward locations. This program is an Urgent Operational Need (UON).

B-1B training systems upgrades(both flight and maintenance simulators/trainers) are complementary to the aircraft Central Integrated Test System (CITS), Fully Integrated Data Link (FIDL), and Vertical Situational Display Upgrade (VSDU) modernization programs. These upgrades are required to bring the simulators up to the same configuration of the modernized aircraft. The B-1B training system provides the war fighter fully integrated, cost effective, high fidelity training in flight operations, weapons employment, and maintenance of the B-1B weapon system.

Aircraft RDT&E efforts include development of a Self-Contained Standby Attitude Indicator (SCAI). This development activity will replace three standby flight indicators (attitude indicator, altimeter, and airspeed indicator) with a more reliable/supportable commercial off-the-shelf display that combines all necessary flight information into one device. If the primary flight instruments are lost, SCAI will continue to provide the primary flight information needed to fly the aircraft. Standby instrumentation must be functional and reliable in the event of primary flight display failure, and is a Mission-Essential Subsystem List (MESL) item required for flight.

Upgrades to the B-1B flight test aircraft are included in the modernization programs to keep the test flight systems current. RDT&E funded test jets are currently configured with Engineering, Manufacture, and Development (EMD) Line Replaceable Units (LRUs) for CITS, FIDL and VSDU. Replacement of the EMD LRUs is required to bring two flight test aircraft to fleet representative configuration. Maintenance and logistic support from the manufacturer is required until the Air Force supply chain is established. Replacement of the LRUs will ensure maximum supportability, maintainability, and reliability for continued and future flight tests.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101126F / *B-1B Squadrons*

Additionally, program funds cover engineering/planning studies, related engineering efforts, and auxiliary equipment needed for development programs that have not yet fielded. Cost includes Program Management Administrative (PMA) costs and initiatives for anticipated weapon system enhancements, including efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total ownership cost. All B-1B development programs support planned requirements for unique identification in their production phases.

This program is in Budget Activity 7, Operational System Development; budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipated production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	16.265	19.589	11.384	-	11.384
Current President's Budget	13.126	12.774	5.353	-	5.353
Total Adjustments	-3.139	-6.815	-6.031	-	-6.031
• Congressional General Reductions	-0.021	-			
• Congressional Directed Reductions	-	-6.815			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.573	-			
• SBIR/STTR Transfer	-0.467	-			
• Other Adjustments	-1.078	-	-6.031	-	-6.031

Change Summary Explanation

FY13 change of -$1.078M due to sequestration
FY13 change of -$1.573M due to reprogramming for higher USAF priority reprogramming
FY14 change of -$6.815M due to Congressional program decrease
FY15 change of -$6.031M due to higher USAF priorities

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: B-1B Secure Line of Sight (SLOS) / Beyond Line Of Sight (BLOS) ARC-210	2.500	-	-
Description: This is an upgrade to the Secure Line of Sight (SLOS) / Beyond Line of Sight (BLOS) Air Radio Communication (ARC) 210 voice capability.			
FY 2013 Accomplishments:			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101126F / *B-1B Squadrons*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Initiated upgrades to software and testing to support fielding of SLOS/BLOS ARC 210 voice capability. ***FY 2014 Plans:*** N/A			
Title: B-1B Vertical Situation Display Upgrade ***Description:*** Vertical Situation Display Upgrade (VSDU) is a program to replace the primary flight displays in the forward cockpit, which have become increasingly unsupportable due to Diminishing Manufacturing Sources (DMS). ***FY 2013 Accomplishments:*** Completed work on Vertical Situation Display Upgrade (VSDU) modification to test aircraft 0068, concluded Engineering Manufacturing and Development (EMD) activities, and began EMD contract closeout activities. ***FY 2014 Plans:*** N/A	3.622	-	-
Title: B-1B IBS Simulator Development ***Description:*** B-1B Integrated Battle Station (IBS) Simulator Development upgrades existing training systems (both flight and maintenance) to the IBS configuration (IBS is the combined production phase of CITS, FIDL, VSDU development efforts). ***FY 2013 Accomplishments:*** Simulator and training upgrades continued with software and hardware development and testing to support fielding of Vertical Situation Display Upgrade (VSDU), Central Integrated Test Systems (CITS), and Fully Integraded Data Link (FIDL). ***FY 2014 Plans:*** Simulator and training upgrades will continue software and hardware development, integration and testing to support fielding of VSDU, Central Integrated Test Systems (CITS), and Fully Integrated Data Link (FIDL). ***FY 2015 Plans:*** Continue simulator and training upgrades	4.004	3.324	4.353
Title: B-1B Self-Contained Attitude Indicator ***Description:*** The B-1B Self-Contained Attitude Indicator (SCAI) program will replace the legacy standby attitude indicator that uses an obsolete spinning mass gyro with a reliable and supportable standby attitude indicator. ***FY 2013 Accomplishments:***	3.000	5.200	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101126F / *B-1B Squadrons*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Developed and tested a replacement standby attitude indicator for the B-1B. ***FY 2014 Plans:*** Accomplish prototype development, ground / flight testing, and complete EMD activities.			
Title: B-1B Flight Test Upgrades ***Description:*** B-1B Flight Test Upgrades modifies the two flight test aircraft at Edwards AFB to the production IBS configuration; the EMD LRUs that are currently on the aircraft will be removed and replaced with production units. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Replace EMD LRUs with production kits on test aircraft and provided interim contract support for CITS, FIDL, VSDU EMD LRUs on RDT&E funded test jets. ***FY 2015 Plans:*** Provides interim contractor support for CITS, FIDL and VSDU EMD LRUs for RDT&E funded test jets.	-	4.250	1.000
Accomplishments/Planned Programs Subtotals	13.126	12.774	5.353

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # B01B00: *Training Support to Units, Mods*	0.269	0.333	0.427	-	0.427	0.438	0.447	0.455	0.463	-	-
• APAF: BA05: Line Item # B01B00: *Bomber Tactical Data Link, Mods*	-	-	0.223	-	0.223	0.138	1.319	1.490	-	-	-
• APAF: BA05: Line ITem # B01B00: *B-1B Squadrons, Mods*	136.025	104.135	140.252	-	140.252	129.338	114.507	71.220	88.128	-	-
• APAF: BA05: Line Item # B01B00 S...: *B-1B Squadrons, Spares*	16.735	14.267	9.793	-	9.793	18.883	8.960	3.224	3.470	-	-
• APAF: BA05: Line Item # B01B00:: *Bomber Tactical Data Link, Spares PE0207446F*	-	0.696	1.038	-	1.038	0.995	-	-	-	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101126F / *B-1B Squadrons*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA07: Line Item # B00100: *B-1B Squadrons, Post Production Support*	0.964	3.683	-	-	-	-	-	-	-	-	-
• APAF: BA07: Line Item #B00100: *B-1 Aircraft Common/ Peculiar Support Equipment*	6.505	-	-	-	-	-	-	-	-	-	-

Remarks

(U) Program Element 0208006F, Air Force Mission Planning Systems (AFMPS), Joint Mission Planning System (JMPS)
(U) Program Element 0207446F, Bomber Tactical Data Link

E. Acquisition Strategy

Upgrades to the B-1B flight test will use a sole source Cost Plus Firm Fixed (CPFF) contract with a prime / integrating contractor (Boeing).

Self-Contained Standby Attitude Indicator (SCAI) acquisition strategy will consist of two years EMD, three years production and installation. The EMD portion of the Contract will be a Cost Plus Fixed Fee with A Performance Incentive (CPFF PI) with Firm Fixed Price (FFP) for production.

The acquisition strategy for simulator upgrades for Vertical Situation Display Upgrade (VSDU), Central Integrated Test Systems (CITS), and Fully Integrated Data Link (FIDL) is a Fixed Price Incentive Firm (FPIF) competitive award contract.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101126F / *B-1B Squadrons*	**Project (Number/Name)** 675344 / *B-1B Modernization*

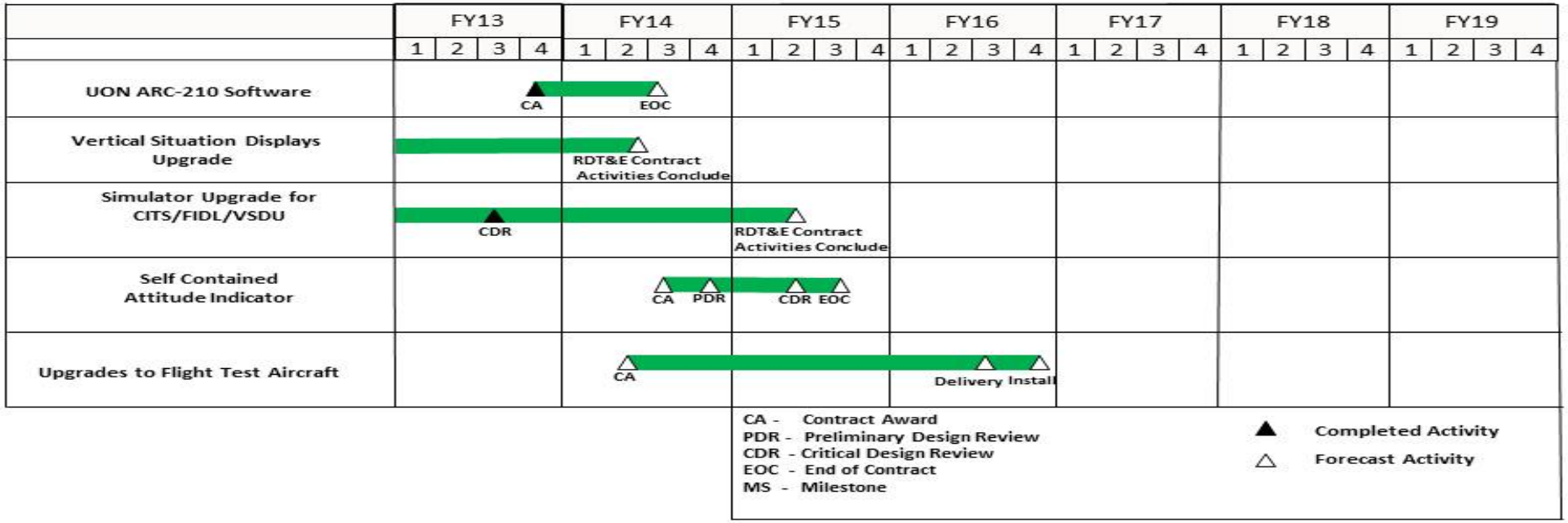


Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101127F / *B-2 SQUADRONS*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	38.203	29.805	87.810	131.580	-	131.580	81.904	54.923	32.072	32.683	Continuing	Continuing
675345: *B-2 Modernization*	0.000	13.043	73.474	111.909	-	111.909	68.252	41.017	17.894	18.236	Continuing	Continuing
676021: *BASELINE SUPPORT*	0.000	13.607	14.336	19.671	-	19.671	13.652	13.906	14.178	14.447	Continuing	Continuing
676022: *EHF SATCOM and Computer*	38.203	3.155	-	-	-	-	-	-	-	-	-	41.358
MDAP/MAIS Code: 224												

The FY 2015 OCO Request will be submitted at a later date.

Note

Because B-2 EHF Increment 1 changed BPACs twice and was originated in a different Program Element, prior year and total amounts for Project 676022 give a misleading summary of development cost. EHF Increment 1 development funding is $415M, as detailed below:

$275M in PE 0604240F Project 653843 in years FY05 - FY09
$ 98M in PE 0101127F Project 675345 in years FY10 -FY11
$ 39M in PE 0101127F Project 676022 in FY12
$ 3M in PE 0101127F Project 676022 in FY13

$415M total development costs for B-2 EHF Increment 1.

EHF Increment 2 program funding was removed in the FY13 PB.

A. Mission Description and Budget Item Justification

The B-2 Spirit is the world's most advanced long-range strike asset. The unique combination of range, precision, payload, and ability to operate in anti-access area denial environments allow the B-2 to identify, locate, target, and destroy the highest value enemy targets. The B-2 can, with necessary upgrades, accomplish its mission regardless of location, return to base safely, and permit freedom of movement for follow-on forces, including other long range strike platforms. An array of planned RDT&E projects are necessary to preserve a strategic advantage against 21st century threats as well as increase flexibility, lethality, and survivability of this national asset tasked across a broad spectrum of tactical and national strategic objectives. B-2 will achieve these objectives by adapting mature technologies/systems in the fleet to rapidly deliver affordable and relevant combat capability, leveraging other Department of Defense investments and programs utilizing innovative acquisition strategies.

The B-2 has a projected service life through 2058. To ensure the fleet can accomplish its nuclear and conventional mission in highly defended and anti-access environments, periodic modernization efforts must be undertaken to upgrade combat capability as well as improve the viability, supportability, and survivability of the

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*

weapon system. Recent and ongoing investments in avionics, structures, communications, and weapons upgrades keep the B-2 viable in the immediate future. Current system upgrades include Defensive Management System Modernization, Extremely High Frequency Satellite Communications (SATCOM) and Computers Increments 1, alternative communication solutions such as Common Very Low Frequency Receiver and Adaptable Communications Suite, Massive Ordnance Penetrator integration and modernization of Global Positioning System hardware and signal enhancement, Joint Air-to-Surface Standoff missile-Extended Range integration, Flexible Strike Phase 1, Link-16 Center Instrument Display/In-Flight Replanner, Low Observable Signature and Supportability Modifications, Aircraft Supportability Modifications, Training System Upgrades, Mission Planning System improvements, flight test aircraft upgrades and base of operations support, Advanced Low Detection Data Link studies, other weapons integration and engine improvements, as well as B-2 platform studies and acquisition planning.

B-2 modernization of weapons carriage and armament interfaces, communications, navigation, avionics, and supportability efforts will establish an improved foundation for Moving Target Kill and Non-Traditional Surveillance and Reconnaissance combat capabilities necessary to ensure air superiority in 21st century nuclear and conventional combat environments. Flexible Strike Phase 2 efforts will modify Stores Management hardware and software necessary to accommodate integration of updated conventional and nuclear System 2 weapons into the B-2 fleet. It will provide for mixed carriage of an assortment of weapons on the B-2, providing any combination of weapons in both B-2 weapons bays. B-2 will have the capability to carry a fully loaded conventional Rotary Launcher Assembly along with a fully loaded Smart Bomb Rack Assembly or a Monitor and Control Assembly with Massive Ordnance Penetrator weapon on a single B-2 aircraft, providing unprecedented capability to destroy a wider array of target sets. Other efforts include: the development of a Universal Armament Interface, integrating multi-platform advanced data links with high bandwidth satellite communication links, integration of the Global Positioning System M-Code hardware and software necessary for modernization of Air Traffic Management communications/navigation/ surveillance systems, and enhancement of the Mode 5/S Identification Friend or Foe system with Automatic Dependence Surveillance-Broadcast capability mandated by US and European military and civil aviation agencies to improve situational awareness of controlled and contested airspaces. Finally, improvements are required on the B-2 data/voice/video recorders to comply with Air Force Safety Board mandates to provide specific flight and aircraft data, frequency of update, data precision, and recording duration that do not exist in the B-2 recorders today.

After the above modifications are implemented, the B-2 fleet will be poised to deliver a Moving Target Kill combat capability, forming a foundation to exploit the modularity and improved precision algorithms of Universal Armament Interface. The inherent low observable characteristics of the B-2 will enable accomplishment of a Non-Traditional Surveillance and Reconnaissance mission. Necessary modifications include, but are not limited to, enhancement of current radar modes, high resolution improvements to the synthetic aperture radar, and improved information fusion required to gather, analyze, and communicate enemy movements and combat capabilities to friendly follow-on forces, the National Command Authority, and other operation centers via the Global Information Grid.

In FY13, Defensive Management System Modernization transfered to PE 65931F, project 653844.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes developmental efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force					Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0101127F / *B-2 SQUADRONS*		
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	35.970	100.194	128.597	-	128.597
Current President's Budget	29.805	87.810	131.580	-	131.580
Total Adjustments	-6.165	-12.384	2.983	-	2.983
• Congressional General Reductions	-0.048	-			
• Congressional Directed Reductions	-	-12.384			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.015	-			
• SBIR/STTR Transfer	-1.102	-			
• Other Adjustments	-	-	2.983	-	2.983

Change Summary Explanation

FY2013 reduction of -$1.102M for Small Business Innovative Research (SBIR) and -$5.015M for higher Air Force priorities.
FY2014 change: -$12.384M Common VLF Receiver Increment 1 contract delay

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101127F / *B-2 SQUADRONS*	Project (Number/Name) 675345 / *B-2 Modernization*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675345: *B-2 Modernization*	-	13.043	73.474	111.909	-	111.909	68.252	41.017	17.894	18.236	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The B-2 is currently undergoing modernization of avionics/communications systems, engines, armament systems, low observable components, core training system components, aircraft supportability improvements, support equipment development, as well as studying future Integrated Strike Warfare and Advanced Tactical Data Link integration requirements.

Low Observable Signature and Supportability Modifications (LOSSM) and Aircraft Supportability Modifications (ASM) directly address B-2 aircraft availability, the primary stated B-2 user requirement. Given the extremely small fleet size (20 aircraft), mission accomplishment is particularly sensitive to the availability of this high-demand strategic asset. LOSSM projects increase aircraft availability, decrease low observable (LO) maintenance, and maintain and improve the combat-ready LO signature for the B-2 fleet ensuring survivable combat operations. LOSSM projects improve materials, structures, and diagnostic tools necessary to evaluate LO materials and systems in the B-2 fleet. LOSSM structure improvement projects include, but are not limited to, advanced high frequency materials placement, windshield bounce patch and tape improvements, composite plies, advanced signature reduction, and radome improvements. Material improvements include, but are not limited to, tailpipe and inlet coatings, pre-cured gap fillers, and other advanced LO materials development. Diagnostic tool efforts include, but are not limited to, improved radar frequency diagnostics, signature diagnostic system database upgrades, Tier One Material Inspection System improvements, Portable Laser Removal Tool development, Integrated Collections And Reporting System, Mobile Diagnostics Laboratory, Ground Air Radar System development, and other low observable special test equipment and information systems upgrades.

The Air Force will also study multiple structural, avionics, and engine modifications that could improve the performance of the aircraft and engines as well as reduce maintenance manhours and the logistics footprint of the fleet. Focus of the studies will be on non-mission capable (maintenance) drivers, safety issues, and obsolescence issues through modernization of key components in the airframe, avionics, and engines resulting in improved aircraft availability of a high demand/low density fleet. Potential structural and avionics modifications include, but are not limited to, B-2 Common Processor, Proximity Sensor Logic Unit, Generator Control Unit, Rudder Access Panel and Elevon Drain Hole upgrades, Cockpit Voice and Flight Data Recorder, Radomes, Audio Control Display Unit, Center Instrument Display improvements, Aft Deck Doublers, Center Instrument Display connection to the aircraft Digital Video Recorder, Multi-function Information Distribution System Power Transfer, Global Positioning System Splitter Cable, Airborne Integrated Terminal Crypto, and upgraded cryptological functionality of all B-2 communications systems as necessary. Engine improvements include, but are not limited to, the F118 engine Service Life Extension Program, Extended Mission Oil Tank, and the Next Generation Engine Core upgrade. Stage 1 and 3 engine fan blade improvements will reduce engine changes while increasing aircraft availability and reducing maintenance costs. Engine upgrades are necessary to maintain commonality with the F110 engine core and reduce maintenance and repair costs of divergent engine configurations.

Modern communications are key enablers for the B-2 in the Anti-Access/Area Denial battlespace, and directly enhance lethality and force multiplication. The Common Very Low Frequency (VLF) Receiver effort develops and integrates a receive-only very low bandwidth VLF receiver and antenna subsystem to provide a secure,

survivable strategic nuclear communication capability for the B-2. The receiver will be adaptable for use by other Department of Defense platforms. Secure, survivable two-way communications in an Anti-Access/Area Denial environment remains a requirement for the B-2, and the Air Force will study requirements and potential efforts which might address those requirements. The Adaptable Communications Suite provides a non-integrated communications system that allows B-2 to receive a complete integrated mission, time sensitive targeting information, intelligence updates, and positive command and control procedures while en route to a combat theater. Link-16 Center Instrument Display/In-Flight Replanner upgrade allows B-2 access to theater tactical data links, improving on-board situational awareness while greatly enhancing the ability of theater commanders to coordinate B-2 with other assets. Mode 5/S Identification Friend or Foe with Automatic Dependence Surveillance-Broadcast will provide improved situational awareness of controlled and contested airspaces in the United States and Europe.

B-2 Armament upgrades integrate new and/or advanced weapons on the B-2 to destroy a wider array of target sets, to include moving target sets, and hardened, deeply buried targets, as well as destroy more targets per sortie. Integration of the 30K pound Massive Ordnance Penetrator (MOP) provides the nation with the ability to hold additional hardened, deeply buried targets at risk that are currently unachievable with 5K pound penetrator munitions. The B-2 is the only anti-access area denial penetrating platform capable of carrying the MOP, a capability which meets Urgent Operational Need requirements. The MOP integration project designs, develops, integrates, and tests hardware, software, and support equipment required for carriage, jettison, and release of two MOP weapons from the B-2. The MOP integration effort also includes modernization of the Global Positioning Signal (GPS) antenna enabling an enhanced GPS signal to be routed into the weapon bays to allow Monitor and Control Equipment (MACE) weapons, Smart Bomb Rack Assembly (SBRA) weapons, and Rotary Launch Assembly (RLA) weapons to acquire and track GPS satellites prior to weapons release, maintaining unjammed delivery accuracy in a jamming environment. The MOP Quick Reaction Capability effort includes dual fuze control and single Smart Bomb Rack Controller per bay weapon control and monitor. The Flexible Strike Phase 1 program will recombine and rehost the current B-2 stores management software onto a new integrated processor; Flexible Strike Phase 2 will update other Operational Flight Plans and hardware to enable simultaneous configuration of multiple weapons carriage capabilities, providing B-2 with maximum strategic nuclear and conventional strike flexibility. Planned weapons integration efforts also include integration of currently fielded weapons and upgraded weapons such as, but not limited to, GBU-28 E/B Selective Availability Anti-Spoofing Module (SAASM) with impact angle control, GBU-28D/B SAASM with impact angle control, Hard Target Void Sensing Fuse, extended range Joint Air-to-Surface Standoff Missile, JDAM-5000, GBU 56, Long Range Standoff Missile, and Small Diameter Bomb II. The B-2 Weapons System Tester and its associated Test Program Sets (TPS), to include but not limited to, the Common Organizational Level Tester (COLT), MUSTANG, and B-2 Armament Tester, will be continually upgraded for increased reliability and performance to support current and new B-2 weapon suspension and release systems.

Peculiar support equipment development activities include design, development, test, and procurement of new peculiar support equipment, to include but not limited to, special test equipment for newly emerging test and support requirements of legacy B-2 capabilities and/or functionality. Development of new peculiar support equipment will support test and sustainment activities at the B-2 Weapon System Support Center Ground Test Facility, Program Depot Maintenance facility, Test Range facilities, and AFGSC operating locations.

The B-2 Training System upgrades include updates to training device hardware and components, simulation software, courseware and academic materials, instructional system design architectures, engineering drawings, and system documentation that is not driven by a funded aircraft modification. Improvements include, but are not limited to, threat systems parametrics and order of battle information, radar display emulation improvements, improved aero fidelity of key pilot procedures, courseware improvements, and upgrades to display systems, subsystems, and simulation and computational processors. Other upgrades include, but are not limited to, conventional and nuclear guided weapons delivery training, expanded crypto keyfill capability in simulators, upgraded capability to train weapons as powered up upon completion of initial conditions, as well as upgrades to the electronic combat environment threat database tools to include threat laydown, threat parametrics, and Integrated Air

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 675345 / *B-2 Modernization*

Defense System. Upgrades also include the current Defensive Management System (DMS) simulation, improved DMS alternative/ emergency procedures courseware, and upgraded Mission Generation System, Suppressor tool, and simulation and computational processors as necessary. Enhancements are provided to the B-2 family of trainers to include the Weapon System Trainers, Mission Trainer, Cockpit Procedures Trainers, Computerized Maintenance Training System, Weapon System Training Aids, Weapons Load Trainer, Crew Escape System Maintenance Trainer, Flight Control System Trainer, instructor-operator station, and Training System Support Center.

The Integrated Strike Warfare Airborne Network effort models and simulates combat effects and performance constraints in an environment that can demonstrate, integrate, generate, and validate four generic waveform models which will be used on the B-2 platform. Additionally, this effort establishes a viable end-to-end distributed modeling and simulation network.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: B-2 Common Very Low Frequency Receiver (CVR)	7.197	13.035	45.460
Description: Provides secure, survivable, receive-only strategic nuclear communication for the B-2. ***FY 2013 Accomplishments:*** Began Common VLF Receiver development effort, conducted Milestone B, and entered Engineering and Manufacturing Development phase. ***FY 2014 Plans:*** Continue Engineering and Manufacturing Development efforts and conduct System Functional Review. ***FY 2015 Plans:*** Continue Engineering and Manufacturing Development efforts and conduct System Preliminary Design Review and System Critical Design Review.			
Title: B-2 Flex Strike Phase 1	1.358	58.500	64.519
Description: Recombine the currently separate Stores Management Operational Flight Programs and rehost the software onto the new integrated processor unit made available by the B-2 EHF Increment 1 program. ***FY 2013 Accomplishments:*** Continued requirements maturation and risk reduction efforts, and prepared for the Milestone B decision and entry into Engineering and Manufacturing Development ***FY 2014 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 675345 / *B-2 Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue requirements maturation efforts and Conduct System Preliminary Design Review. Conduct Milestone B and enter Engineering and Manufacturing Development phase. Conduct System Critical Design Review. ***FY 2015 Plans:*** Continue Engineering and Manufacturing Development efforts; conduct software/hardware integration testing and begin flight test.			
Title: Low Observable Signature and Supportability Mods ***Description:*** B-2 Modernization includes, but is not limited to, Low Observable Signature and Supportability Modifications, Aircraft Supportability Modifications, Massive Ordnance Penetrator with accuracy improvements, Joint Air-to-Surface Standoff Missile-Extended Range integration, armament tester improvements, Training System core upgrades, Adaptable Communication Suite improvements, Link 16 Center Instrument Display/Inflight Replanner, Integrated Strike Warfare/Advanced Tactical Data Link modeling and simulation, Mode S/5 Identification Friend or Foe with Automatic Dependence Surveillance-Broadcast capability improvements, Moving Target Kill and Non-Traditional Surveillance and Reconnaissance capability improvements, information fusion upgrades, Special Test Equipment development, and future weapons integration efforts. ***FY 2013 Accomplishments:*** Continued development of on-going Low Observable Signature and Supportability Modifications, Training System core upgrades, Adaptable Communications Suite improvements, Massive Ordnance Penetrator integration, Aircraft Supportability Modifications, and other weapons integration improvements. ***FY 2014 Plans:*** Continue development of on-going Low Observable Signature and Supportability Modifications, Training System core upgrades, Adaptable Communications Suite improvements, Aircraft Supportability Modifications, and other weapons integration improvements. ***FY 2015 Plans:*** Continue development of on-going Low Observable Signature and Supportability Modifications, Training System core upgrades, Adaptable Communications Suite improvements, Aircraft Supportability Modifications, and other weapons integration improvements.	4.488	1.939	1.930
Accomplishments/Planned Programs Subtotals	13.043	73.474	111.909

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item #B00200: *B-2 CVR Inc 1 Mod Funding*	-	-	-	-	-	19.190	18.758	9.407	9.582	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 675345 / *B-2 Modernization*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # B00200: *B-2 Training Support Modification, PE 0809731F*	4.003	2.006	6.415	-	6.415	6.575	7.715	7.862	8.009	Continuing	Continuing
• APAF: BA07: Line Item #B00200: *B-2 Post Production Support, B-2A ICS for CVR Inc 1: PE 0101127F*	-	-	-	-	-	-	0.010	0.132	0.134	Continuing	Continuing
• APAF: BA06: Line Item #B00200: *B-2 Squadrons, A/C Initial Spares for CVR Inc 1*	-	-	-	-	-	-	2.054	2.595	2.664	Continuing	Continuing
• APAF:BA07: Line Item #B00200: *B-2 Depot Activation for CVR Inc 1, PE0101127F*	-	-	-	-	-	3.476	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman), employ the program office as the system integrator when practical, leverage mature technology and systems development investments by other Department of Defense organizations, encourage prime contractor competition of subsystems and key components to reduce risk and cost, use of cost plus incentive fee (CPIF) development contracts, and combine developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 675345 / *B-2 Modernization*

B-2 FY-2015 PB Modernization Detailed Schedule

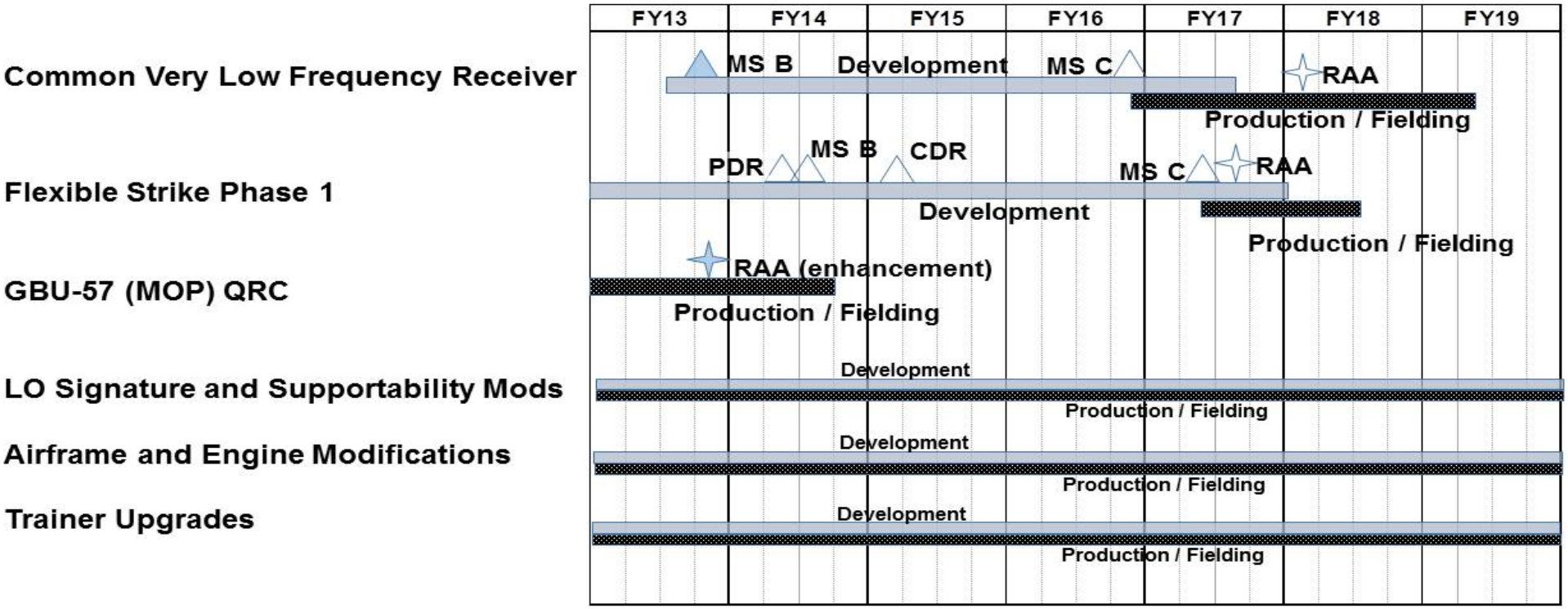


Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101127F / *B-2 SQUADRONS*	Project (Number/Name) 676021 / *BASELINE SUPPORT*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
676021: *BASELINE SUPPORT*	-	13.607	14.336	19.671	-	19.671	13.652	13.906	14.178	14.447	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Baseline Support maintains and upgrades the B-2 unique flight test aircraft as well as hardware/software and test equipment to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerating deployment of advanced operational capabilities to the warfighter. Baseline Support also ensures the Mission Planning System keeps pace with aircraft modifications and improves the mission planning core system. Baseline Support provides for other B-2 unique government costs and includes assorted studies of aircraft performance and cost trades as well as acquisition planning activities, up to and including proposal preparation, for future capabilities such as, but not limited to, Advanced Tactical Data Link efforts, Moving Target Kill capability, High Resolution Synthetic Aperture Radar, Enhanced Radar Modes, F118 Service Life Extension, F118 Extended Mission Oil Tank Upgrades, Next Generation Engine Core upgrade, Universal Armament Interface, System 2 Nuclear Interface, Global Positioning System/M Code Receivers, Joint Precision Approach and Landing System upgrades, Radar Processor Modernization, Mode 5/S Identification Friend or Foe, Automatic Dependence Surveillance Broadcast, Flight Data and Voice Recorder upgrade, Communications/ Navigation/Surveillance-Air Traffic Management, Information Fusion, and integration of currently fielded or new weapons including, but not limited to, GBU E/B Selective Availability and Anti Spoofing Module (SAASM) with impact angle control, GBU D/B SAASM with impact angle control, Hard Target Void Sending Fuze, Joint Air-to-Surface Standoff Missile Extended Range, Joint Direct Attack Munition-5000, and GBU-56.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Baseline Support Acquisition Planning	2.877	0.456	4.238
Description: Baseline Support provides for other B-2 unique government costs and includes acquisition planning activities for future capabilities, long range planning, studies, and program integration activities.			
FY 2013 Accomplishments: Continued Baseline Support activities including acquisition planning for future capabilities, long range planning, studies, and program integration activities.			
FY 2014 Plans: Continue Baseline Support activities including acquisition planning for future capabilities, long range planning, studies, and program integration activities.			
FY 2015 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 676021 / *BASELINE SUPPORT*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue Baseline Support activities including acquisition planning for future capabilities, long range planning, studies, program integration activities and refine requirements and study affordable options to satisfy B-2 communications requirements in an A2/AD environment			
Title: Baseline Support Flight Test ***Description:*** Baseline Support Flight Test maintains and upgrades the B-2 unique flight test aircraft as well as hardware/software and test equipment, to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerating deployment of advanced operational capabilities to the warfighter. ***FY 2013 Accomplishments:*** Continued B-2 Flight Test activities, maintaining and upgrading the B-2 unique flight test aircraft as well as hardware/software and test equipment, to support developmental systems integration and flight test. ***FY 2014 Plans:*** Continue B-2 Flight Test activities, maintaining and upgrading the B-2 unique flight test aircraft as well as hardware/software and test equipment, to support developmental systems integration and flight test. ***FY 2015 Plans:*** Continue B-2 Flight Test activities, maintaining and upgrading the B-2 unique flight test aircraft as well as hardware/software and test equipment, to support developmental systems integration and flight test.	8.728	11.111	13.176
Title: Baseline Support Mission Planning ***Description:*** Baseline Support Mission Planning System improvements ensure the mission planning system keeps pace with aircraft modifications and improves mission planning core systems. ***FY 2013 Accomplishments:*** Continued B-2 Mission Planning activities, keeping pace with aircraft modifications and improving mission planning core systems. ***FY 2014 Plans:*** Continue B-2 Mission Planning activities, keeping pace with aircraft modifications and improving mission planning core systems, to include beginning the transition from the current AFMSS mission planning to the Joint Mission Planning System (JMPS). ***FY 2015 Plans:*** Continue B-2 Mission Planning activities, keeping pace with aircraft modifications and improving mission planning core systems, to include continuation of the transition from the current AFMSS mission planning to the Joint Mission Planning System (JMPS).	2.002	2.769	2.257
Accomplishments/Planned Programs Subtotals	13.607	14.336	19.671

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 676021 / *BASELINE SUPPORT*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman); use of cost plus award fee/ incentive fee (CPAF/IF) development contracts; and the combination of developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 676021 / *BASELINE SUPPORT*

B-2 FY-2015 PB Baseline Support Detailed Schedule

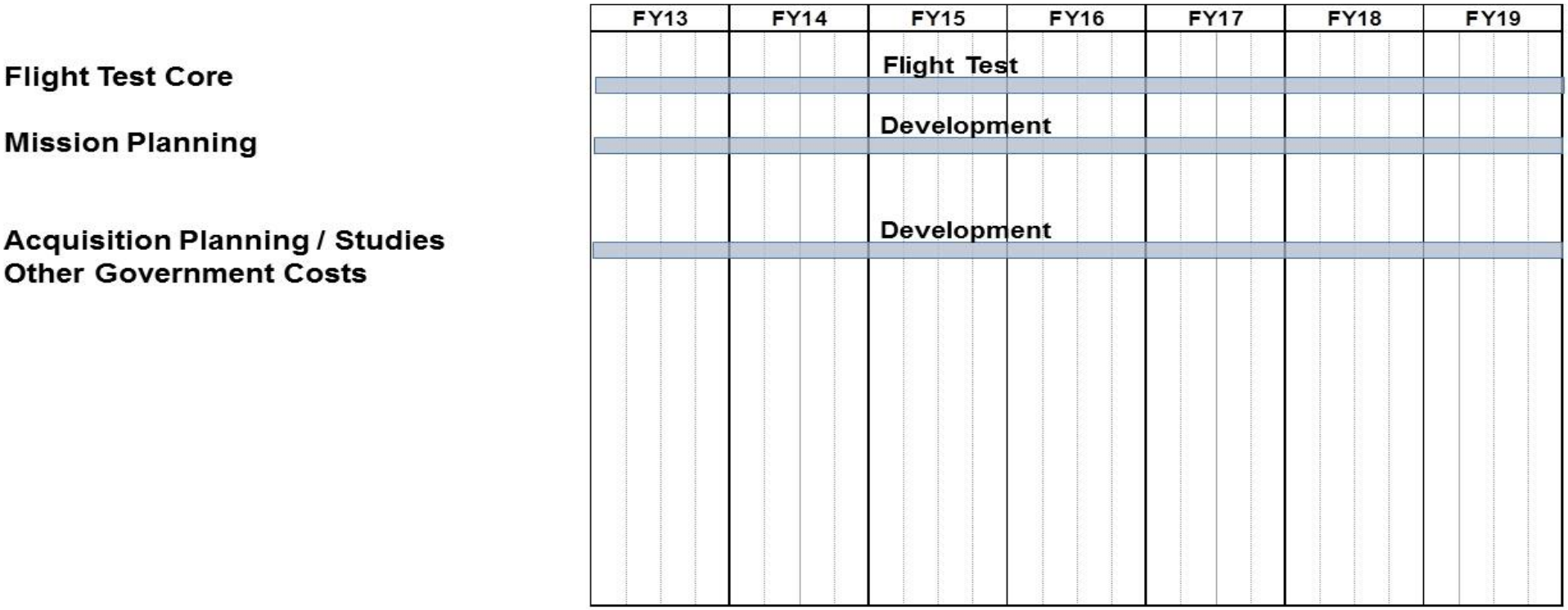


Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0101127F / *B-2 SQUADRONS*				Project (Number/Name) 676022 / *EHF SATCOM and Computer*			
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
676022: *EHF SATCOM and Computer*	38.203	3.155	-	-	-	-	-	-	-	-	-	41.358
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

Because B-2 EHF Increment 1 changed BPACs twice and was originated in a different Program Element, prior year and total amounts for Project 676022 give a misleading summary of development cost. EHF Increment 1 development funding is $415M, as detailed below:

$275M in PE 0604240F Project 653843 in years FY05 - FY09
$ 98M in PE 0101127F Project 675345 in years FY10 -FY11
$ 39M in PE 0101127F Project 676022 in FY12
$ 3M in PE 0101127F Project 676022 in FY13

$415M total development costs for B-2 EHF Increment 1.

EHF Increment 2 program funding was removed in the FY13 PB.

A. Mission Description and Budget Item Justification

Originally the first of three increments to replace the Ultra High Frequency communication system with Extremely High Frequency (EHF) Satellite Communications System (SATCOM), B-2 EHF Increment 1 is a high-speed computing upgrade that provides upgraded flight management computer processors, increased data storage, re-hosted Flight Management Operational Flight Program, and a high bandwidth data bus to prevent degradation of existing capabilities resulting from future upgrades. Additionally, the new Integrated Processing Units and Disk Drive Unit architectures establish a high-speed fiber optic structure network while maintaining connectivity to legacy interfaces. This upgrade provides the required processing growth path to future B-2 upgrades such as, but not limited to, future communications capabilities, Defensive Management System Modernization, Flexible Strike, B61-12 and other weapons integration efforts.

Four kits were developed with Research Development Test and Evaluation (RDT&E) funds for three aircraft installs, which includes two Force Development Evaluation installs and one Developmental/Operational Test aircraft install. The fourth development kit will be refurbished and utilized as a production install via procurement funding. Procurement funding will purchase the remaining 16 kits/installs for a total of 20 aircraft. Modification of the training system will be accomplished at the operational base and other locations as required. This effort also includes updating the aircrew and maintenance trainers and academics/courseware. The Production and Deployment phase acquisition strategy is based on a two lot buy: Low Rate Initial Production (LRIP) in FY2012 and Full Rate Production (FRP) in FY2013. Funds on the Support Equipment line are for upgrades to related support equipment.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 676022 / *EHF SATCOM and Computer*

EHF Increment 2 was deferred in the FY13 President's Budget. The Air Force will pursue an alternative strategic communications method, the Common Very Low Frequency Receiver, to satisfy the immediate user need date. However, secure, survivable two-way communication remains a requirement for the warfighter.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate
production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: B-2 EHF SATCOM and Computers Increment 1	3.155	-	-
Description: EHF Increment 1 provides upgraded flight management computer processors, increased data storage, rehosted Flight Management Operational Flight Program and a high bandwidth data bus. Additionally, the Increment 1 Integrated Processing Unit and Disk Drive Unit architectures establish a high speed fiber optic structure network as well as maintain connectivity to legacy interfaces. Increment 1 provides a processing growth path to future B-2 upgrades. ***FY 2013 Accomplishments:*** Completed EHF SATCOM and Computers Increment 1 System Development and Demonstration phase, completed IOT&E, and began Full Rate Production.			
Accomplishments/Planned Programs Subtotals	3.155	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # B00200: *EHF Inc I Kits and Installs B-2A: PE 0101127F, B-2 Squadrons, Modifications*	51.998	7.469	8.189	-	8.189	-	-	-	-	-	-
• APAF: BA07: Line Item # B00200: *EHF Inc 1 Interim Contract Support B-2A ICS: PE 0101127F, Post Prod Support*	0.480	0.489	-	-	-	-	-	-	-	-	-
• APAF: BA06: Line Item # B00200: *EHF Inc 1 Initial Spares PE 0101127F, B-2 Squadrons A/C Initial Spares*	6.029	3.078	0.421	-	0.421	0.767	0.201	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 676022 / *EHF SATCOM and Computer*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost

Remarks

In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 PE 0101127F, B-2 Squadrons to project 676022 PE 0101127F, B-2 Squadrons.

D. Acquisition Strategy

Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman), leverage mature technology and system development investments by other Department of Defense organizations, encourage prime contractor to conduct competitions at the subsystem/key component level to reduce risk and cost, use cost plus incentive fee (CPIF) development contracts, and combine developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101127F / *B-2 SQUADRONS*	Project (Number/Name) 676022 / *EHF SATCOM and Computer*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vehicle - EHF Increment 1	SS/CPAF	Northrop Grumman : Palmdale, CA	30.733	2.554	Oct 2012	-		-		-		-	-	33.287	-
		Subtotal	30.733	2.554		-		-		-		-	-	33.287	-

Remarks

EHF Increment 1 is primarily delivery orders with Northrop-Grumman as the prime contractor and lead integrator.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	PO	AFFTC : ,	2.599	0.414	Oct 2012	-		-		-		-	-	3.013	-
		Subtotal	2.599	0.414		-		-		-		-	-	3.013	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA	Various	Various : ,	4.871	0.187	Oct 2012	-		-		-		-	-	5.058	-
		Subtotal	4.871	0.187		-		-		-		-	-	5.058	-

	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	38.203	3.155		-		-		-		-	-	41.358	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101127F / *B-2 SQUADRONS*	Project (Number/Name) 676022 / *EHF SATCOM and Computer*	

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Award dates listed are the first incremental funding opportunity associated with each cost category.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 676022 / *EHF SATCOM and Computer*

B-2 FY-2015 PB EHF SATCOM and Computer Detailed Schedule

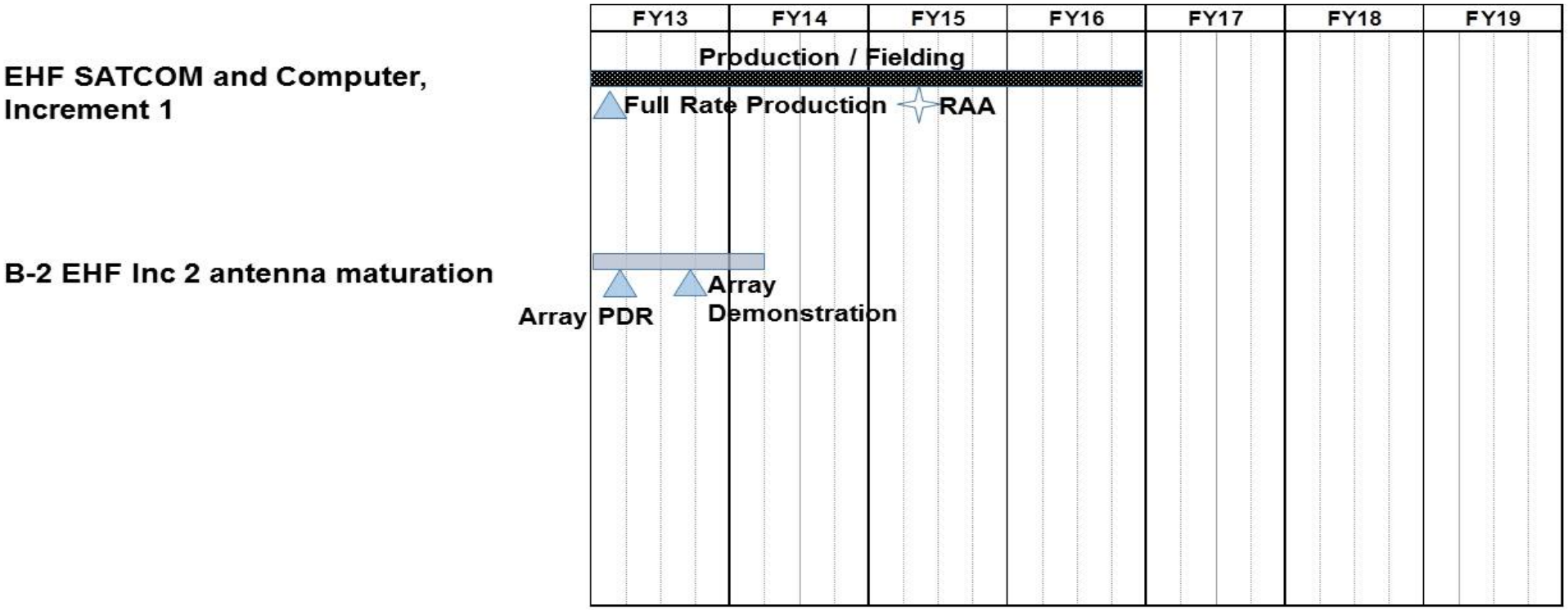


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101127F / *B-2 SQUADRONS*	**Project (Number/Name)** 676022 / *EHF SATCOM and Computer*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EHF Increment 1 FRP Contract Award	1	2013	1	2013
EHF Increment 2 Array Preliminary Design Review	3	2013	3	2013
EHF Increment 2 Array Demonstration	3	2013	3	2013
EHF Increment 1 Required Assets Available	2	2015	2	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101213F / *Minuteman Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	-	139.109	-	139.109	173.067	206.749	235.276	232.633	Continuing	Continuing
672983: *MM Ground and Comm Equipment*	-	-	-	23.678	-	23.678	40.654	36.461	2.891	3.653	Continuing	Continuing
672984: *MM III Baseline Support*	-	-	-	21.934	-	21.934	44.160	40.058	13.760	-	Continuing	Continuing
672985: *MM Support Equip*	-	-	-	40.466	-	40.466	9.589	22.977	20.861	6.023	Continuing	Continuing
672986: *MM Crypto Mods*	-	-	-	36.672	-	36.672	14.698	-	-	-	Continuing	Continuing
672987: *MM Ops Equip*	-	-	-	16.359	-	16.359	63.966	107.253	197.764	222.957	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 672983, Minuteman (MM) Ground and Comm Equipment, was established under PE 0101213F, and includes new start efforts for Automatic Switching Unit (ASU), Ultra-High Frequency (UHF) Receiver, and Launch Control Center (LCC) Block Upgrades.

In FY 2015, Project 672984, MM III Baseline Support, was established under PE 0101213F, and includes new start efforts for Modular Mechanical Ordnance Destruct System (MMODS), Ground Test Upgrades, and Baseline Support.

In FY 2015, Project 672984, MM III Baseline Support, efforts were transferred from PE 0604851F, Intercontinental Ballistic Missile (ICBM) - Engineering Manufacturing Development (EMD), Project 655037, Support Equipment, in order to consolidate ICBM investment efforts under a common PE. Specific efforts transferred include the Instrumentation Wafer Replacement Program and Signal Conditioner Monitor. These programs were consolidated into the MM III Instrumentation Wafer Replacement Program (MMIWRP).

In FY 2015, Project 672985, MM Support Equipment, was established under PE 0101213F, and includes new start effort for the Re-Entry Support Equipment Replacement (RSERP).

In FY 2015, Project 672985, MM Support Equip, efforts were transferred from PE 0604851F, ICBM - EMD, Project 655037, Support Equipment, in order to consolidate ICBM investment efforts under a common PE. Specific efforts transferred include the Reentry Field Support Equipment (RFSE), Code System Media (CSM), Reentry Support Equipment Replacement Program (RSERP), Strategic Targeting Applications Computer System (STACS), and Transporter Erector Replacement Program (TERP).

In FY 2015, Project 672986, MM Crypto Mods, was established under PE 0101213F and ongoing efforts were transferred from PE 0604851F, ICBM - EMD, Project 655081, ICBM Crypto in order to consolidate ICBM investment efforts under a common PE. Specific efforts transferred include the ICBM Crypto Unit II (ICU II).

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*

In FY 2015, Project 672987, MM Ops Equip, was established under PE 0101213F and includes new start effort for Guidance Modernization.

In FY 2015, Project 672987, MM Ops Equip, Solid Rocket Motor Modernization (SRMM) efforts are a continuation of FY 2013 SRMM efforts in PE 0604851F, ICBM - EMD, Project 657010, Ops Equipment.

A. Mission Description and Budget Item Justification

Minuteman (MM) Squadrons development efforts will ensure the extension of the operational life of the MM III ICBM weapon system through 2030.

The MM III Ground and Comm Equipment program replaces obsolete/unsupportable ground-based weapon system equipment located at Launch Control Centers (LCCs) and Launch Facilities (LFs) necessary to continue MM III operations through 2030. Current efforts include development, qualification, integration, and testing of replacement equipment such as the LCC Block Upgrades, ASU, and UHF Receiver. As other similar equipment is identified for replacement, it will be added to this program.

MM III Baseline Support program replaces or upgrades obsolete/unsupportable flight test unique equipment installed on the missile during flight test, used to test MM III systems on the ground, or located at test facilities to collect, process and analyze test data. Flight test equipment supports test and evaluation of newly developed or modified MM III capabilities and to conduct MM III Force Development Evaluations (FDEs) determining ICBM force readiness, reliability and capability shortfalls. Current efforts include development, qualification, integration and testing of replacement equipment such as the MMIWRP, MMODS and Ground Test Upgrades. As other similar equipment is identified for replacement, it will be added to this program. Baseline support also provides for other MM III unique government costs, studies of system performance, contract closeout costs, cost trades and acquisition planning activities, up to and including proposal preparation, for future capabilities.

MM Support Equipment program designs, develops, and tests replacement of obsolete/non-serviceable weapon system support equipment. Current efforts include design, development, and testing of support equipment such as RFSE, CSM, STACS, TERP and RSERP.

MM Crypto Mods executes USSTRATCOM, Air Force Global Strike Command, and Nuclear Weapon Safety Center requirements by implementing the KS-60 capabilities of remote key/code change and irreversible transformation as mandated in the approved Capabilities Development Document (dated 4 Jan 05) and addresses Nuclear Weapon System Safety Group Operational Safety Review requirements 98-2, 00-1 and 02-2. It also incorporates continuous signal lockout capabilities to prevent the widespread loss of status monitoring. These features will greatly increase security during code changes by reducing the frequency of open sites 75 days annually and will reduce associated resource costs for 450 Launch Facilities and 45 Launch Control Centers.

MM Operational Equipment program designs, develops, and tests replacement of weapon system equipment including the Guidance Modernization effort and SRM Modernization effort. Beginning in FY15, the Guidance Modernization effort will provide modifcations or replacements for the current MM III guidance subsystem necessary to ensure operations through 2030 and to support future Ground Based Strategic Deterrent (GBSD) requirements. Beginning in FY15, the SRM Modernization effort will provide modifcations or replacements for the current MM III propulsion subsystem necessary to ensure operations through 2030 and to support future GBSD requirements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*

This program is in Budget Activity 7, Operational System Development, because this budget activity includes developmental efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal years.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	139.109	-	139.109
Total Adjustments	-	-	139.109	-	139.109
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	139.109	-	139.109

Change Summary Explanation

FY15 funding reflects increase of $58.508M due to transfer from PE 0604851F, ICBM - EMD in order to consolidate ICBM investment activities under a common PE. FY15 also includes the following increases: $23.678M for MM Ground and Comm Equipment (LCC Block Upgrades, UHF Receiver and ASU), $21.934M for Baseline Support (MMIWRP, MMODS, Ground Test Upgrades, and Baseline Support), $3.900M for MM Support Equipment (RSERP), $14.730M for MM Crypto Mods (ICU II), and $16.359M for MM Operational Equipment (Guidance Modernization and Solid Rocket Motor Modernization).

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101213F / *Minuteman Squadrons*	Project (Number/Name) 672983 / *MM Ground and Comm Equipment*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
672983: *MM Ground and Comm Equipment*	-	-	-	23.678	-	23.678	40.654	36.461	2.891	3.653	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 672983, Minuteman III (MM III) Ground and Comm Equipment, was established under PE 0101213F, and includes new start efforts for LCC Block Upgrades, MM III Auto Switching Unit (ASU), and MM III Ultra High Frequency Reciever (UHF Reciever).

A. Mission Description and Budget Item Justification

The MM III Ground and Comm Equipment program replaces obsolete/unsupportable ground-based weapon system equipment located at Launch Control Centers (LCCs) and Launch Facilities (LFs) necessary to continue MM III operations through 2030. Current efforts include development, qualification, integration and testing of replacement equipment such as the LCC Block Upgrades, ASU, and UHF Receiver. As other similar equipment is identified for replacement, it will be added to this program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: LCC Block Upgrades - FY15 New Start ***Description:*** The LCC Block Upgrades program replaces the Journal Memory Loader (JML) and aging electrolytic capacitors. The current JML provides inadequate memory space to support mission requirements. Capacitors and other parts have exceeded life expectancy. When combined with parts obsolescence, these factors threaten the ability to remain compliant with CJCS and USSTRATCOM OPLAN 8010 Directives. In addition, it replaces the current printer which has reached the end of life-cycle and is having significant sustainability issues. The printer provides capability to handle and process Emergency Action Messages in hardcopy format when necessary. Finally, it replaces current equipment at LCCs for handling voice communications. The performance of current equipment is degraded, interferes with communication, and is unreliable. ***FY 2015 Plans:*** Begin design, development, fabrication and test of LCC Block Upgrades.	-	-	15.778
Title: MM III Ultra High Frequency Reciever (UHF Reciever) - FY15 New Start ***Description:*** The UHF Receiver program will replace current receiver which is becoming unsupportable. The UHF receiver is required to support airborne launch control from the E-6B. Airborne Launch Control System equipment on-board the E-6B communicates through the UHF receivers and provides sustained and survivable capability to transmit launch codes to ICBMs if	-	-	3.300

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672983 / *MM Ground and Comm Equipment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
LCCs are disabled. Current repair times for UHF receivers exceed 12 months due to parts obsolescence and additional spares cannot be procured. ***FY 2015 Plans:*** Begin design, development, fabrication and test of UHF Radio Receiver replacement equipment, and refresh training and repair capabilities.			
Title: MM III Automatic Switching Unit (ASU) - FY15 New Start ***Description:*** The ASU program will replace the current Minuteman ASU and Minuteman Power Processor (MPP). The ASU is controlled by the MPP, which contains software and electronics to measure incoming and standby power characteristics. Technical data does not exist for repair or reprogramming of the MPP. Current equipment and lack of repair/reprogram capability cause inadvertent source transfers by the MPP. The ASU contacts have exceeded their service life, and unnecessary source transfers stress mission critical components. ***FY 2015 Plans:*** Begin design, development and test of ASU replacement. Develop technical requirement documents to establish the procurement criteria for the replacement transfer switch and controller.	-	-	4.600
Accomplishments/Planned Programs Subtotals	-	-	23.678

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• MPAF: BA 03: M30MLG: *Minuteman III Modifications*	-	-	16.707	-	16.707	51.959	102.872	59.390	61.084	Continuing	Continuing

Remarks

Project 672983, MM Ground and Comm Equipment, is related to only a portion of MPAF funding in Other Program Funding Summary.

D. Acquisition Strategy

Support and test equipment replacement efforts are reviewed to determine the best method for execution including vendor qualification and procurement with no development required, develop and/or modification with organic depot capabilities or development with industry. Industry development efforts will be executed through contracts available under the Future ICBM Acquisition and Sustainment Construct (FISAC) or competitive source selections. Nuclear Surety Cross Check Analysis (NSCCA) and Independent Verification and Validation (IV&V) efforts are contracted separately under a Cost Plus Award Fee (CPAF) Contract.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672983 / *MM Ground and Comm Equipment*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672983 / *MM Ground and Comm Equipment*

MM Ground and Comm Equipment

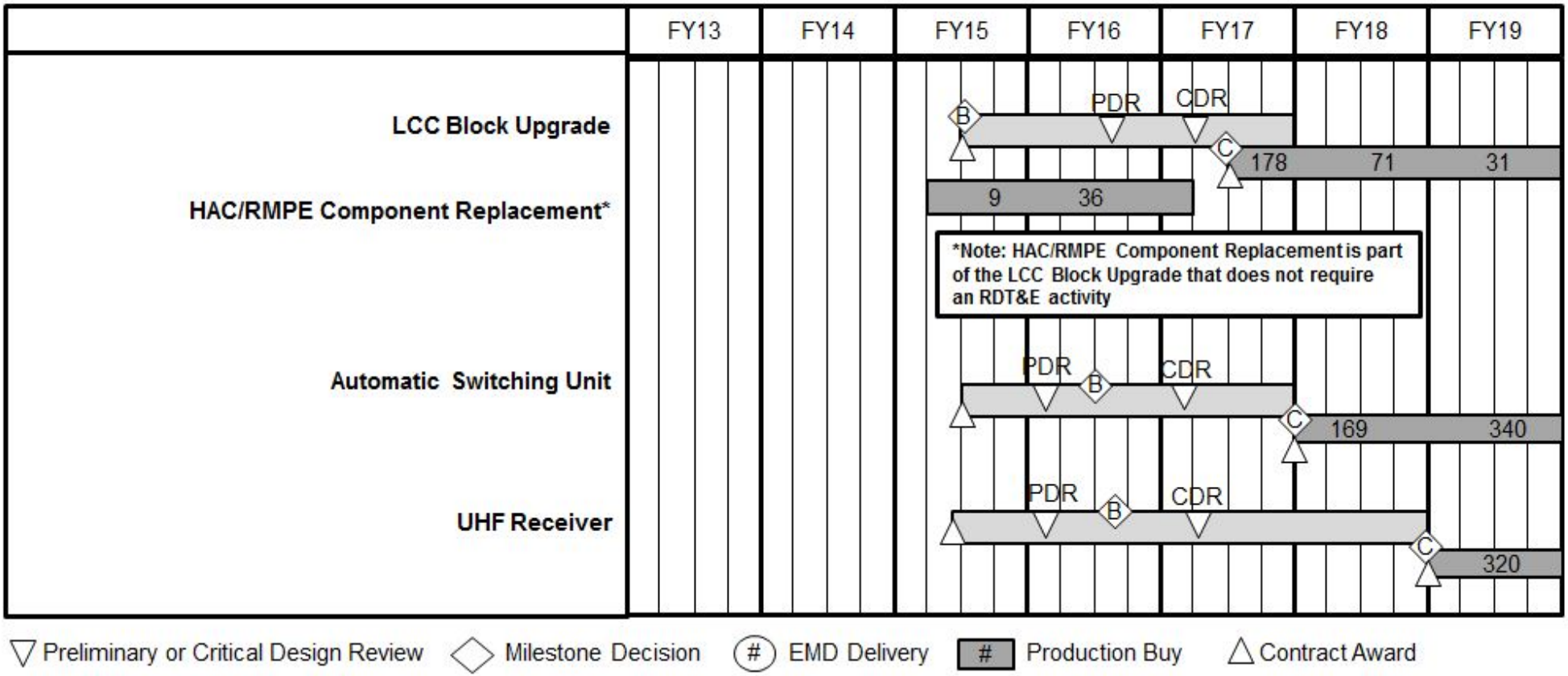


Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101213F / *Minuteman Squadrons*	Project (Number/Name) 672984 / *MM III Baseline Support*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
672984: *MM III Baseline Support*	-	-	-	21.934	-	21.934	44.160	40.058	13.760	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 672984, MM III Baseline Support, was established under PE 0101213F, and includes new start efforts for MM III Modular Mechanical Ordnance Destruct System (MMODS), Ground Test Upgrades, and Baseline Support.

In FY 2015, Project 672984, MM III Baseline Support, efforts were transferred from PE 0604851F, Intercontinental Ballistic Missile (ICBM) - Engineering Manufacturing Development (EMD), Project 655037, Support Equipment, in order to consolidate ICBM investment efforts under a common PE. Specific efforts transferred include the Instrumentation Wafer Replacement Program and Signal Conditioner Monitor. These programs were consolidated into the MM III Instrumentation Wafer Replacement Program (MMIWRP).

A. Mission Description and Budget Item Justification

Minuteman III (MM III) Baseline Support program replaces or upgrades obsolete/unsupportable flight test unique equipment installed on the missile during flight test, used to test MM III systems on the ground, or located at test facilities to collect, process and analyze test data. Flight test equipment supports test and evaluation of newly developed or modified MM III capabilities and to conduct MM III Force Development Evaluations (FDEs) determining ICBM force readiness, reliability and capability shortfalls. Current efforts include development, qualification, integration and testing of replacement equipment such as the MMIWRP, MMODS and Ground Test Upgrades. As other similar equipment is identified for replacement, it will be added to this program. Baseline support also provides for other MM III unique government costs, studies of system performance, contract closeout costs, cost trades and acquisition planning activities, up to and including proposal preparation, for future capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: MM III Instrumentation Wafer Replacement Program (MMIWRP)	-	-	5.788
Description: MMIWRP will design and develop replacements for the Mod 7 Instrumentation Wafer and associated signal conditioner monitor. The instrumentation wafer transmits missile performance telemetry and position data and receives command destruct messages during missile flight tests and evaluations. The Signal Conditioner Monitor, Missile Discrete Monitor and associated cabling capture Reentry System performance data during FDE and developmental flight tests. MMIWRP is needed to mitigate the risk of postponing MM III test launches due to parts obsolescence, asset depletion, 30th Space Wing Range Safety requirement deficiencies, and multiple failures of the Mod 7 Instrumentation Wafer System. This effort is not a new start in FY15. Reflected in PE 0604851F ICBM - EMD, Project 655037, Support Equipment in FY14.			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672984 / *MM III Baseline Support*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Not Applicable ***FY 2015 Plans:*** Continue design, development, fabrication and test of the replacement wafer, determine specific Commercial Off-the-Shelf components and begin review of all Range Safety requirements. Conduct PDR.			
Title: MM III Modular Mechanical Ordnance Destruct System (MMODS) - FY15 New Start ***Description:*** MMODS will replace the current flight destruct capability on MM III used during flight test and FDEs and flight tests. It is used in the event of a flight anomaly where it would be necessary to destroy the missile. The current system is becoming unsupportable and does not meet updated Range Safety Standards (RCC00319-07). ***FY 2015 Plans:*** Begin design, development, fabrication, and test of MMODS. Conduct PDR and CDR.	-	-	10.646
Title: MM III Baseline Support - FY15 New Start ***Description:*** MM III Baseline Support provides for other MM III unique government costs, studies of system performance, contract closeout costs, cost trades, and acquisition planning activities, up to and including proposal preparation, for future capabilities. ***FY 2015 Plans:*** Conduct studies of system performance, contract closeout costs, cost trades and acquisition planning activities, up to and including proposal preparation, for future capabilities.	-	-	0.500
Title: Ground Test Upgrades - FY15 New Start ***Description:*** Ground Test Upgrades will design a replacement for the Simulated Electronic Launch Minuteman and Guided Missile Launcher Electronic Circuit test sets. Both test sets enable operational checkout and test of Launch Facilities up to the point of actual MM III launch. Program will address parts obsolescence and combine the two test sets into one using the same interfaces and cables. ***FY 2015 Plans:*** Begin design, development, fabrication and testing of replacement equipment for Ground Test Upgrades. Award the EMD contract and conduct a successful Preliminary Design Review (PDR).	-	-	5.000
Accomplishments/Planned Programs Subtotals	-	-	21.934

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101213F / *Minuteman Squadrons*	Project (Number/Name) 672984 / *MM III Baseline Support*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA05: PE 0604851F: *ICBM - EMD*	120.375	112.760	-	-	-	-	-	-	-	-	-
• MPAF: BA01: M30GLG: *Missile Replacement Equipment - Ballistic*	24.845	38.940	80.187	-	80.187	84.156	47.261	42.543	43.038	Continuing	Continuing

Remarks

Project 672984, MM Baseline Support, is related to only a portion of RDT&E and MPAF funding in Other Program Funding Summary.

D. Acquisition Strategy

Baseline Support replacement efforts are reviewed to determine the best method for execution including vendor qualification and procurement with no development required, develop and/or modification with organic depot capabilities or development with industry. Industry development efforts will be executed through contracts available under the Future ICBM Acquisition and Sustainment Construct (FISAC) or competitive source selections. Nuclear Surety Cross Check Analysis (NSCCA) and Independent Verification and Validation (IV&V) efforts are contracted separately under a Cost Plus Award Fee (CPAF) Contract.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672984 / *MM III Baseline Support*

MM III Baseline Support

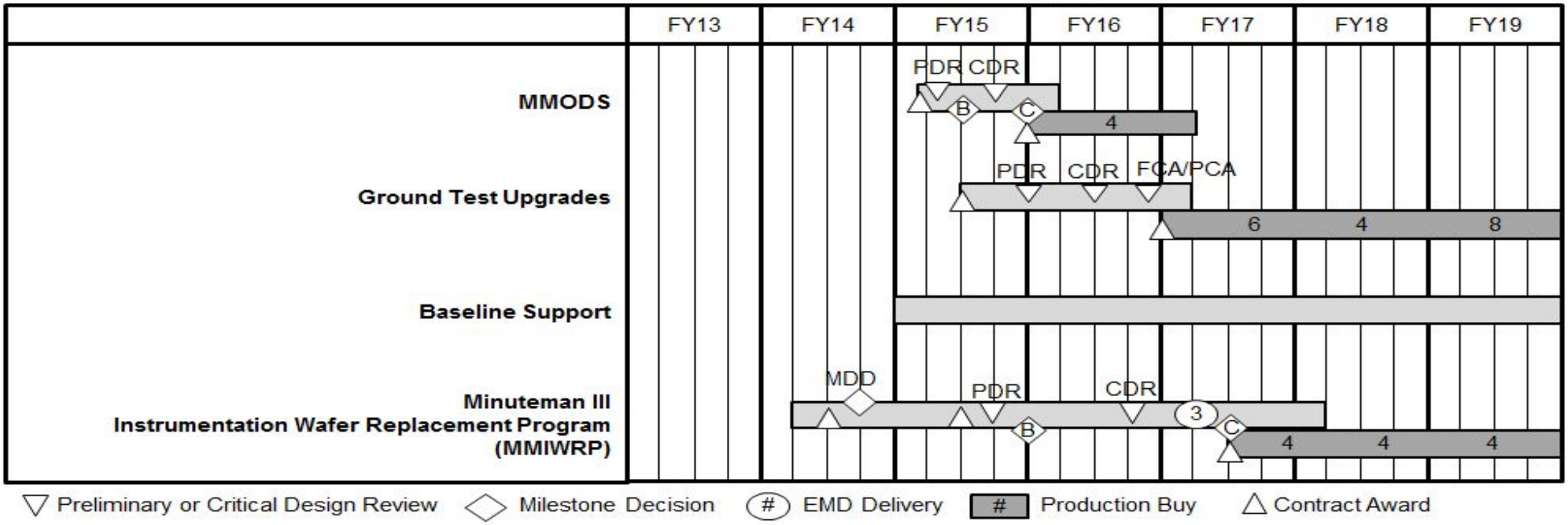


Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101213F / *Minuteman Squadrons*	Project (Number/Name) 672985 / *MM Support Equip*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
672985: *MM Support Equip*	-	-	-	40.466	-	40.466	9.589	22.977	20.861	6.023	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 672985, MM Support Equip, was established under PE 0101213F, and includes new start effort for the MM III Reentry Support Equipment Replacement Program (RSERP).

In FY 2015, Project 672985, MM Support Equip, efforts were transferred from PE 0604851F, ICBM - EMD, Project 655037, Support Equipment, in order to consolidate ICBM investment efforts under a common PE. Specific efforts transferred include the Reentry Field Support Equipment (RFSE), Code System Media (CSM), Strategic Targeting Applications Computer (STACS), and Transporter Erector Replacement Program (TERP).

A. Mission Description and Budget Item Justification

MM Support Equipment program designs, develops, and tests replacement of obsolete/non-serviceable weapon system support equipment. Current efforts include design, development, and testing of support equipment such as RFSE, CSM, STACS, TERP and RSERP.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Reentry Field Support Equipment (RFSE)	-	-	12.476
Description: Design and develop the RFSE to replace the current reentry system (RS) test set. RFSE will increase the Mean Time Between Failure, eliminate unneeded Mk12 functions, and add new Mk21 functions. It will provide capability to meet Department of Energy mandated Limited Life Component warhead swaps and to test electrical continuity during buildup of Minuteman III reentry systems. Reflected in PE 0604851F, ICBM - EMD, Project 655037, Support Equipment in FY13/14. ***FY 2013 Accomplishments:*** Not Applicable ***FY 2014 Plans:*** Not Applicable ***FY 2015 Plans:*** Continue design, development, fabrication and testing of RFSE units. Conduct a successful Milestone C briefing. Continue Independent Validation and Verification (IV&V) activities.			
Title: Code System Media (CSM)	-	-	4.549

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672985 / *MM Support Equip*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: The CSM program supports the replacement of obsolete tape cartridges with more modern and available magnetic media. Segment #1, responsible for providing software to accept National Security Agency (NSA) codes, Operations Plan (OPLAN) changes and software updates on compact disk (CD), has been completed. Segment #2 will provide software and hardware necessary to import all other data on CD and produce Wing Codes Processing System products on CD. Segment #2 will also replace the Cartridge Transfer Unit (CTU) with the Data Transfer Unit (DTU). CSM effectively supports the replacement of aging media required to transport and handle mission essential codes and data throughout the ICBM weapon system. The shelf life of the current stock of DC300 tape cartridges and 9-track tapes begin to expire in 2015. CSM delivers the capability to load codes/software on Minuteman III ICBMs through 2030 and is critical to code change activities. Reflected in PE 0604851F, ICBM - EMD, Project 655037, Support Equipment in FY13/14. ***FY 2013 Accomplishments:*** Not Applicable ***FY 2014 Plans:*** Not Applicable ***FY 2015 Plans:*** Continue design, development, fabrication and testing of CSM software. Complete first article production, Test Readiness Review, and system qualification testing of DTU. Hold Functional and Physical Configuration Audits (FCA/PCA). Certify design readiness for Full Rate Production decision. Verify and deliver of tech data to accompany First Article Test and Evaluations. Conduct a successful Milestone C briefing.			
Title: Strategic Targeting Applications Computer System (STACS) ***Description:*** Design and develop a replacement for the STACS hardware, software and tape cartridge media, which are becoming obsolete and unsupportable. STACS will provide new targeting computer equipment and software, and CD media for data import and export. STACS enables USSTRATCOM required OPLAN changes and updates to ICBM missile wings for execution. Reflected in PE 0604851F, ICBM - EMD, Project 655037, Support Equipment for FY13 and FY14. ***FY 2013 Accomplishments:*** Not Applicable ***FY 2014 Plans:*** Not Applicable ***FY 2015 Plans:*** Continue design and development activities. Complete FCA/PCA. Complete certification and deliver the STACS replacement.	-	-	1.739
Title: Transporter Erector Replacement Program (TERP)	-	-	17.787

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672985 / *MM Support Equip*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Design and develop the capabilities necessary to replace the current transporter erector (TE). The TE is used to emplace, extract and transport Minuteman III boosters to and from the launch facilities. TERP will update existing drawings, specifications and technical orders to eliminate parts obsolescence and address intended usage through 2030 and will qualify the new system prior to production. Reflected in PE 0604851F, ICBM - EMD, Project 655037, Support Equipment in FY14 ***FY 2014 Plans:*** Not Applicable ***FY 2015 Plans:*** Continue design, development, fabrication and testing of replacement TE. Complete first article production, Test Readiness Review, and system qualification testing. Complete FCA/PCA. Certify design readiness for Full Rate Production decision. Verify and deliver of tech data to accompany First Article TE. Conduct a successful Milestone C briefing.			
Title: Reentry Support Equipment Replacement (RSERP) - FY15 New Start ***Description:*** Design, develop, fabricate and test the RSERP to modify or replace the 30+ year old suite of test equipment necessary to continue checkout, screening, repair, and refurbishment of Mk12A/Mk21 Arming Fuzing Assemblies. ***FY 2015 Plans:*** Begin the design, development, fabrication, and test of RSERP. Conduct a successful Milestone B briefing.	-	-	3.915
Accomplishments/Planned Programs Subtotals	-	-	40.466

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA05: PE 0604851F: *ICBM - EMD*	120.375	112.760	-	-	-	-	-	-	-	-	-
• MPAF: BA01: M30GLG: *Missile Replacement Equipment - Ballistic*	24.845	38.940	80.187	-	80.187	84.156	47.261	42.543	43.038	-	-

Remarks

Project 672985, MM Support Equipment, is related to only a portion of RDT&E and MPAF funding in Other Program Funding Summary.

D. Acquisition Strategy

Support and test equipment replacement efforts are reviewed to determine the best method for execution including vendor qualification and procurement with no development required, develop and/or modification with organic depot capabilities or development with industry. Industry development efforts will be executed through

contracts available under the Future ICBM Acquisition and Sustainment Construct (FISAC) or competitive source selections. Nuclear Surety Cross Check Analysis (NSCCA) and Independent Verification and Validation (IV&V) efforts are contracted separately under a Cost Plus Award Fee (CPAF) Contract.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672985 / *MM Support Equip*

MM III Support Equipment

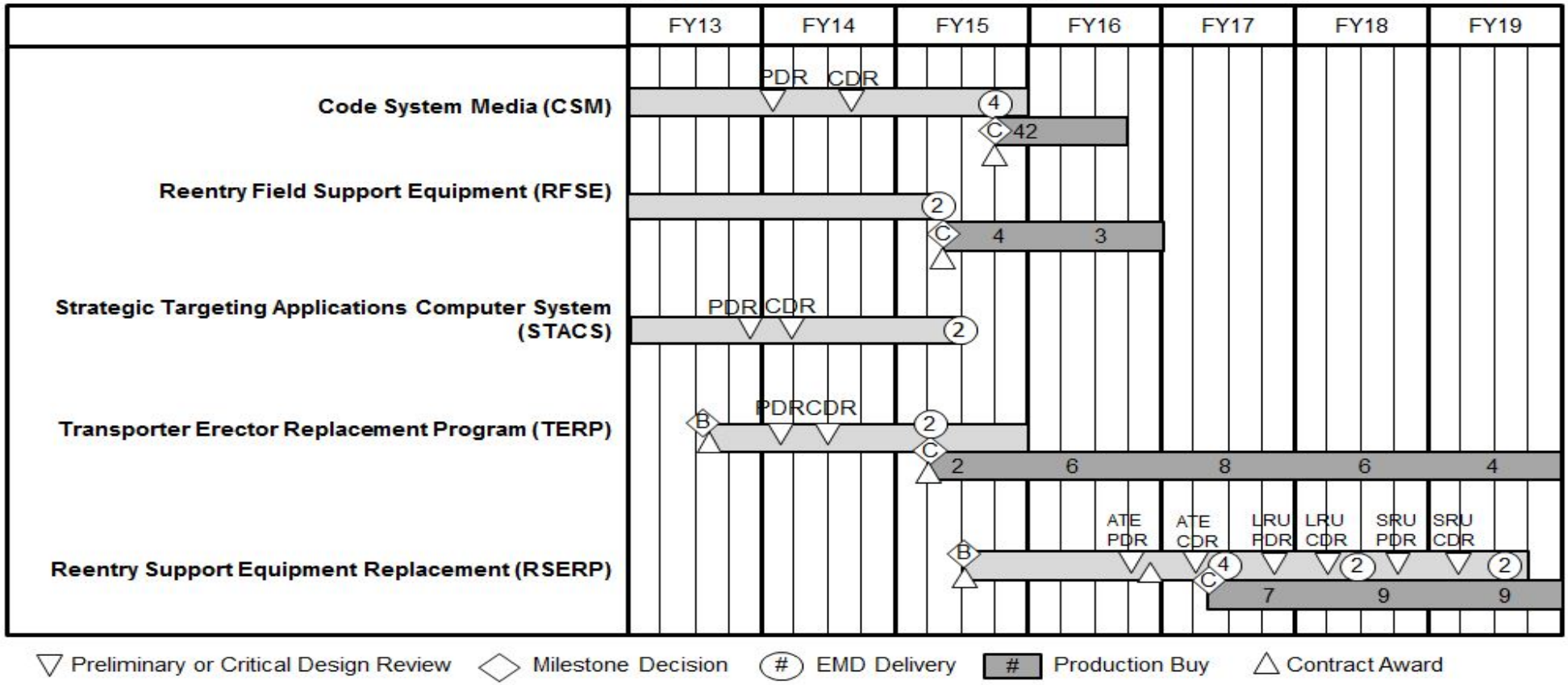


Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101213F / *Minuteman Squadrons*	Project (Number/Name) 672986 / *MM Crypto Mods*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
672986: *MM Crypto Mods*	-	-	-	36.672	-	36.672	14.698	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 672986, MM Crypto Mods, was established under PE 0101213F and efforts were transferred from PE 0604851F, ICBM - EMD, Project 655081, ICBM Crypto, in order to consolidate ICBM investment efforts under a common PE. Specific efforts transferred include the ICBM Crypto Unit II (ICU II).

A. Mission Description and Budget Item Justification

MM Crypto Mods executes USSTRATCOM, Air Force Global Strike Command, and Nuclear Weapon Safety Center requirements by implementing the KS-60 capabilities of remote key/code change and irreversible transformation as mandated in the approved Capabilities Development Document (dated 4 Jan 05) and addresses Nuclear Weapon System Safety Group Operational Safety Review requirements 98-2, 00-1 and 02-2. It also incorporates continuous signal lockout capabilities to prevent the widespread loss of status monitoring. These features will greatly increase security during code changes by reducing the frequency of open sites 75 days annually and will reduce associated resource costs for 450 Launch Facilities and 45 Launch Control Centers.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: ICBM Crypto Upgrade Increment II (ICU II)	-	-	36.672
Description: ICBM Cryptography Upgrade II completes design and development, implements KS-60 remote key/code change, irreversible transformation capabilities, and prevents continuous signal lockout. Reflected in PE 0604851F, ICBM - EMD, Project 655081, ICBM Crypto in FY13/14. ***FY 2013 Accomplishments:*** Not applicable ***FY 2014 Plans:*** Not Applicable ***FY 2015 Plans:*** Complete A4 Drawer qualification and weapon system testing. Prepare documentation for Milestone C and the Production and Deployment phase.			
Accomplishments/Planned Programs Subtotals	-	-	36.672

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672986 / *MM Crypto Mods*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA05: PE 0604851F: *ICBM - EMD*	120.375	112.760	-	-	-	-	-	-	-	-	-
• MPAF: BA 03: M30MLG: *Minuteman III Modifications*	48.404	2.586	16.707	-	16.707	51.959	102.872	59.390	61.084	Continuing	Continuing
• MPAF: BA 04: Line Item # 000999: *Initial Sapres/Repair Parts*	1.208	-	12.938	-	12.938	-	0.397	7.998	0.199	Continuing	Continuing

Remarks

Project 672986, MM Crypto Mods, is related to only a portion of RDT&E and MPAF funding in Other Program Funding Summary.

D. Acquisition Strategy

The ICBM Cryptography Upgrade (ICU) II Program utilizes the ICBM Prime Integration Contract (IPIC) services of Northrop Grumman (NG), which were competitively awarded for the design and development of the ICU II capability. The contract type of the ICU II Engineering and Manufacturing Development (EMD) Contract is Cost Plus Incentive Fee. Also, ICU II EMD uses a separate contract for Nuclear Surety Cross Check Analysis/Performance Analysis and Technical Evaluation (NSCCA/PATE) Independent Validation & Verification (IV&V). The contract type is Cost Plus Fixed Fee, awarded to NG Technical Services. This contract is driven by critical nuclear surety requirements to perform an independent assessment of all modifications to nuclear-certified software.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672986 / *MM Crypto Mods*

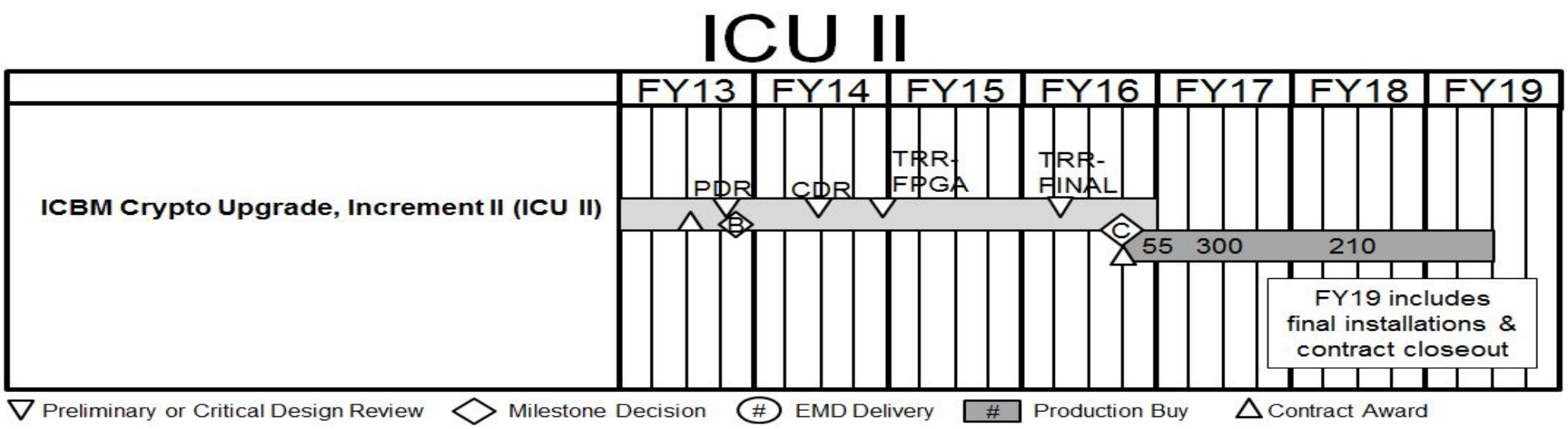


Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101213F / *Minuteman Squadrons*	Project (Number/Name) 672987 / *MM Ops Equip*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
672987: *MM Ops Equip*	-	-	-	16.359	-	16.359	63.966	107.253	197.764	222.957	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 672987, MM Ops Equip, was established under PE 0101213F and includes new start effort for Guidance Modernization.

In FY 2015, Project 672987, MM Ops Equip, Solid Rocket Motor Modernization (SRMM) efforts are a continuation of FY 2013 SRMM efforts in PE 0604851F, ICBM - EMD, Project 657010, Ops Equipment.

A. Mission Description and Budget Item Justification

MM Operational Equipment program designs, develops, and tests replacement of weapon system equipment including the MM III Guidance and Solid Rocket Motor (SRM).

Beginning in FY15, the Guidance Modernization effort will provide modifications or replacements for the current MM III guidance subsystem necessary to ensure operations through 2030 and to support future Ground Based Strategic Deterrent (GBSD) requirements. Guidance Modernization will define requirements further, explore available technologies and architectures, select the most promising technology and architecture for development, and prepare acquisition plans for a future Guidance Modernization Program. Efforts under the ICBM Demonstration/Validation (Dem/Val) Guidance Applications Program (GAP) will be leveraged to inform these efforts.

Beginning in FY15, the SRMM effort will define operational requirements, investigate available technologies and prepare an acquisition strategy for SRM development. This effort, coupled with Propulsion Application Program (PAP), under PE 0603851F, ICBM Dem/Val, will support development of requirements and implementation timeline for a follow-on SRM program.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Guidance Modernization - FY15 New Start	-	-	15.900
Description: Guidance Modernization effort will provide modifications or replacements for the current MM III guidance subsystem necessary to ensure operations through 2030 and to support future Ground Based Strategic Deterrent (GBSD) requirements.			
FY 2015 Plans: Continue technology assessment and development initiated under ICBM Demonstration/ Validation Guidance Applications Program. Establish contracts with multiple contractors with promising technology and architectures relevant for a guidance replacement. Continue efforts to mature technologies and define requirements and modular architectures. Prepare acquisition			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672987 / *MM Ops Equip*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
strategies and plans for a Milestone A decision point leading to a Guidance Modernization Program. Begin development of Enhanced Ground Test capability.			
Title: Solid Rocket Motor Modernization ***Description:*** SRMM effort will focus on reducing the total ownership cost of the MM III weapon system by utilizing technologies developed in the Intercontinental Ballistic Missile Propulsion Applications Program to modernize the MM III booster stack and address maintenance and obsolescence issues realized in the legacy system. FY 2013 SRMM efforts are in PE 0604851F, ICBM - EMD, Project 657010, Ops Equipment. ***FY 2015 Plans:*** Evaluate inputs from the FY13 SRMM concept characterization and trade studies. Continue technology assessment and development initiated under ICBM Demonstration/ Validation Propulsion Applications Program. Continue efforts to mature technologies and define requirements. Prepare acquisition strategies and plans for a Milestone A decision point leading to a SRMM Program.	-	-	0.459
Accomplishments/Planned Programs Subtotals	-	-	16.359

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA04: PE 0603851F: *ICBM - Dem/Val*	63.153	72.696	30.885	-	30.885	18.029	16.327	9.916	9.889	-	-
• RDTE: BA04: PE 0604851F: *ICBM - EMD*	7.110	-	-	-	-	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

Guidance Modernization will prepare for Milestone A efforts leveraging FY14 studies and market research performed under ICBM Dem/Val GAP that have identified and matured materiel solutions to various stages of technical readiness. Based on current MM III and future GBSD requirements, multiple contracts will be competitively awarded following Milestone A supporting follow-on down-select of the best solution. It is anticipated that multiple contracts will be awarded as Cost Plus Fixed Fee, Cost Plus Incentive Fee, Fixed Price Incentive, and/or Firm Fixed Price.

SRMM will conduct pre-acquisition efforts in conjunction with ongoing ICBM Dem/Val PAP efforts maturing SRM. As these efforts are conducted and results from SRM aging and surveillance activities and GBSD Analysis of Alternatives become available, a follow-on SRMM strategy will be established. FY13 SRMM funding will be disbursed using two contract vehicles. The first contract will utilize Hill Air Force Base's Design Engineering Support Program III (DESP III). This will be a competitive

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672987 / *MM Ops Equip*

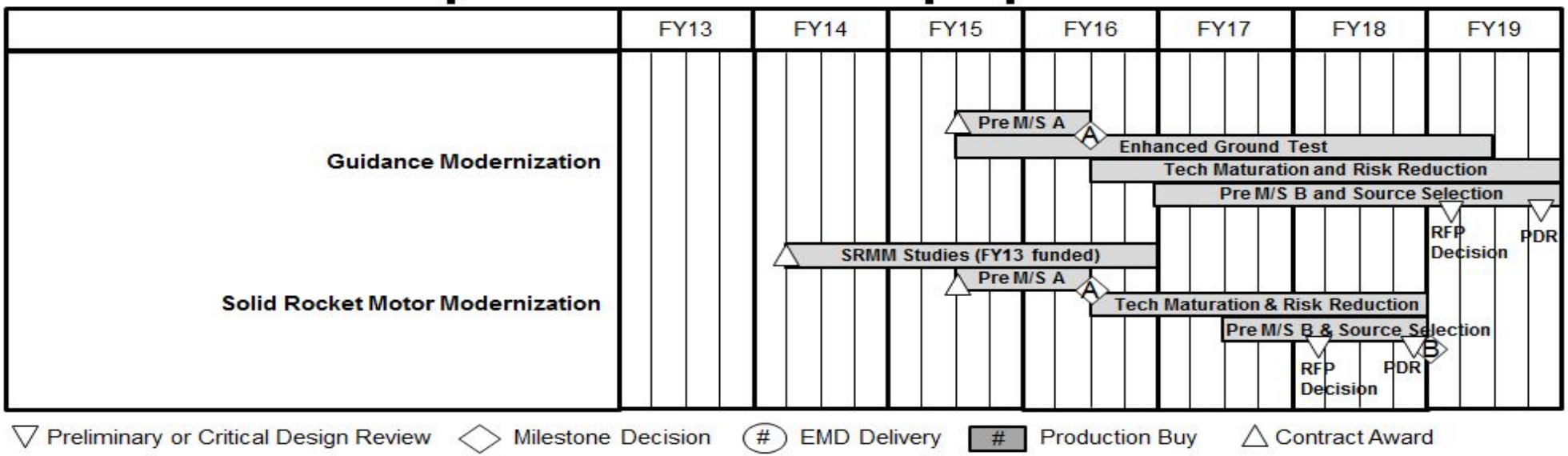
source selection, Indefinite Delivery, Indefinite Quantity (ID/IQ), Cost Plus Fixed Fee (CPFF) contract. The second effort will use the existing Space and Missile Systems Center (SMC) General Service Administration (GSA) contract, which is a Firm Fixed Price (FFP) contract.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101213F / *Minuteman Squadrons*	**Project (Number/Name)** 672987 / *MM Ops Equip*

Operational Equipment



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101313F / *Strat War Planning System - USSTRATCOM*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	132.610	20.452	31.325	35.603	-	35.603	34.683	27.592	16.295	16.605	Continuing	Continuing
675059: *Integrated Strategic Planning and Analysis Network (ISPAN)*	132.610	13.455	26.357	27.754	-	27.754	28.669	24.059	12.693	12.934	Continuing	Continuing
675368: *GSIN (Global Integrated Sensor Network)*	0.000	6.997	4.968	7.849	-	7.849	6.014	3.533	3.602	3.671	Continuing	Continuing
MDAP/MAIS Code: N43												

The FY 2015 OCO Request will be submitted at a later date.

Note

MDAP/MAIS Code: N43 ISPAN Inc 2; MDAP/MAIS Code: 481 ISPAN Inc 4

A. Mission Description and Budget Item Justification

The mission of US Strategic Command (USSTRATCOM) is to establish and provide full-spectrum global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, Global Command Control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter. This mission has been defined by the 2002 Unified Command Plan (UCP) changes 1 and 2. To enable completion of these missions, USSTRATCOM is modernizing the Integrated Strategic Planning and Analysis Network (ISPAN) (formerly known as Strategic War Planning System (SWPS)) and establishing a unified national architecture integrating disparate Missile Warning/Missile Defense (MW/MD) data into a single Internet Protocol (IP)-based system known as the Global Sensor Integrated Network (GSIN) to provide redundant and unambiguous MW/MD data to national leadership. When the ISPAN modernization is complete the system will support the warfighter in both deliberate and adaptive planning environments while allowing the National Command Authorities to employ the full spectrum of kinetic and non-kinetic weapons. The ISPAN system will continue to evolve as weapon systems are matured, new systems are developed, and the threat changes, particularly in the area of worldwide proliferation of Weapons of Mass Destruction (WMD).

The nation's strategic Command and Control (C2), sensors and other planning programs cannot rapidly exchange information across multiple missions, creating ambiguity that delays time critical national C2 decision making processes. GSIN establishes a unified national architecture integrating disparate MW/MD systems into a single IP-based system that will provide redundant and unambiguous MW/MD data to national leadership. GSIN nets together all sensors, from tactical to strategic (including the Nation's most modern and capable assets) taking advantage of their larger numbers, improved algorithms, mobility and forward deployment to provide earlier cross-cueing and expanded decision space when every second counts. GSIN will permit an IP-based User Defined Operational Picture (UDOP) to augment voice conferencing and rapidly build a single, unambiguous missile event picture allowing real-time senior collaboration for nuclear C2 and improved senior leader situational awareness (SA) and decision-making.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101313F / *Strat War Planning System - USSTRATCOM*

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	30.889	37.448	36.047	-	36.047
Current President's Budget	20.452	31.325	35.603	-	35.603
Total Adjustments	-10.437	-6.123	-0.444	-	-0.444
• Congressional General Reductions	-0.030	-0.091			
• Congressional Directed Reductions	-7.700	-6.032			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.669	-			
• Other Adjustments	-2.038	-	-0.444	-	-0.444

Change Summary Explanation

- FY13 Congressional Reduction of $7.7M for ISPAN Increment 3 (determined funds were excess to need)
- FY13 reduced $2.038M in other adjustments for Sequestration
- FY14 Congressional Reduction of $6.032M for program decrease

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101313F / *Strat War Planning System - USSTRATCOM*	Project (Number/Name) 675059 / *Integrated Strategic Planning and Analysis Network (ISPAN)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675059: *Integrated Strategic Planning and Analysis Network (ISPAN)*	132.610	13.455	26.357	27.754	-	27.754	28.669	24.059	12.693	12.934	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The mission of USSTRATCOM is to establish and provide full-spectrum global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, Global Command Control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter. This mission has been defined by the 2002 Unified Command Plan (UCP) changes 1 and 2. To enable these missions, the Integrated Strategic Planning and Analysis Network (ISPAN) (formerly known as SWPS) must be capable of both deliberate and adaptive planning employing the full spectrum of kinetic and non-kinetic weapons. The planning system will continue to evolve as weapon systems are matured, new systems are developed, and the threat changes, particularly in the area of worldwide proliferation of Weapons of Mass Destruction (WMD).

The ISPAN modernization program includes initiation of Course of Action (COA) Development as a service to the DoD enterprise, workflow and decision support development, Combatant Commander (COCOM) Collaboration, User Defined Operational Picture (UDOP), conventional mission planning integration, and Mission Planning Analysis System (MPAS) maintenance and modernization. This includes software coding, integration of multiple internal and external planning applications, as well as developmental and early operational test activities. ISPAN also includes automated data processing equipment (ADPE), software, facilities support, manpower, and training to support the mission objectives of ISPAN, associated deployable and distributed data processing nodes, and subsidiary systems. Activities also include studies and analysis to support both current program planning and execution and future program planning.

ISPAN Increment 2 developed the next increment of planning tools for ISPAN Collaborative Information Environment (CIE). It built on capabilities delivered during Block 1 and developed advanced decision support capabilities for senior leader situational awareness through enhanced data analysis and visualization. ISPAN Increment 4 will modernize the Mission Planning and Analysis System (MPAS), that develops Joint Staff Level I through Level IV nuclear and conventional attack options for national and theater requirements. Increment 4 will fulfill MPAS requirements by reducing Crisis Action Planning and Time Sensitive Planning timelines, integrating nuclear and conventional kinetic weapon capabilities with non-kinetic effects, providing the capability to integrate planning and analysis capabilities of future Global Strike weapons, updating the MPAS system to provide the ability to train users in significantly less time, and leveraging new technologies to lower sustainment costs. ISPAN Inc 4 is an evolution of the Block 1 baseline system using proven technologies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: ISPAN Increment 2	2.755	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101313F / *Strat War Planning System - USSTRATCOM*	**Project (Number/Name)** 675059 / *Integrated Strategic Planning and Analysis Network (ISPAN)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Funded the next increment of planning tools for the ISPAN Collaborative Information Environment (CIE). Increment 2 continued by building on capabilities delivered in Block 1. It developed advanced decision support capabilities for senior leader situational awareness through enhanced data analysis and visualization. It also expanded development of services and operational nodes to support Global Information Grid (GIG) Enterprise services and distributed operation. ***FY 2013 Accomplishments:*** Completed and delivered baselined Increment 2 development effort ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Title: ISPAN Increment 4 ***Description:*** ISPAN Increment 4 (aka MPAS Modernization) will reduce Crisis Action Planning and Time Sensitive Planning timelines, integrates nuclear and conventional kinetic weapon capabilities with non-kinetic effects, and provides the capability to integrate planning and analysis capabilities of future Global Strike weapons. ISPAN Inc 4 is an evolution of the Block 1 baseline system using proven technologies. ***FY 2013 Accomplishments:*** Initiated ISPAN Increment 4 pre-Milestone B risk reduction activities (including studies and analyses) to identify the best approach to increase system robustness, enhance plan optimization and improve planning timelines. ***FY 2014 Plans:*** Complete Increment 4 Pre-MS B risk reduction activities. Will also initiate Spiral 1 development. This includes initiating requirements analysis, design, coding, and test for development of new Mission Planning and Analysis System (MPAS) capabilities. Potential capabilities include a new Plan Manager to orchestrate the crisis action planning processes. It also includes development of a new Attack Structure Manager capability (which will optimize on-the-shelf plans in reaction to changes in weapons, weapon availability, targets, and environment), a new Strike Option Generator capability (which will automatically generate strike plan options given a set of constraints and priorities), and a new Data Services Layer/Data Layer which will provide access to common services and data external to MPAS. Will also initiate activities for the reengineering of legacy components (e.g. Air Vehicle Planning System, Ballistic Missile Planning System, Aimpoint Construction System, and Plan Quality Review System). ***FY 2015 Plans:***	10.700	26.357	27.754

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101313F / *Strat War Planning System - USSTRATCOM*	**Project (Number/Name)** 675059 / *Integrated Strategic Planning and Analysis Network (ISPAN)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Will continue requirements analysis, design, coding, and test activities for development of a new Mission Planning and Analysis System (MPAS) capability. Will complete development, testing, and fielding activities for delivering ISPAN Increment 4 Spiral 1 capability. Spiral 1 will deliver the ability to accomplish Time Sensitive Planning faster than today's system can support. It will provide a partial Plan Management capability for a more automated approach to planning missile missions (partial TSP Weaponeering). It will also provide an Attack Structure Management capability for system-assisted deliberate plan management. With this capability, courses of action (COAs) can be edited, deleted and added to existing plans in response to changes in the operational environment or shifts in priorities or guidance. Spiral 1 will also initiate some of the foundational work necessary to orchestrate work assignments among MPAS subsystems. It will also modernize a portion of the Air Vehicle Planning System to improve maintainability and simplify the addition of new capabilities.			
Accomplishments/Planned Programs Subtotals	13.455	26.357	27.754

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Starting in FY15 OPAF funds for ISPAN were transferred from WSC 833140 to WSC 833560 to provide better transparency and accountability for program costs.

D. Acquisition Strategy

ISPAN will develop and modernize strategic planning tools for the combatant commanders using an evolutionary acquisition strategy with development contracts that are negotiated and awarded in a competitive environment.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101313F / *Strat War Planning System - USSTRATCOM*	Project (Number/Name) 675059 / *Integrated Strategic Planning and Analysis Network (ISPAN)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ISPAN Increment 2	C/CPAF	Lockheed Martin Integrated Systems : Papillion, NE	111.251	2.755	Dec 2012	-		-		-		-	-	114.006	164.783
ISPAN Increment 4	Various	Various : Various, NE	0.000	7.753	May 2013	22.807	Jun 2014	24.174	Jun 2015	-		24.174	64.297	119.031	TBD
		Subtotal	111.251	10.508		22.807		24.174		-		24.174	64.297	233.037	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Responsible Test Organization	Various	Various : Various,	1.163	0.182	Oct 2012	0.182	Oct 2013	0.185	Oct 2014	-		0.185	0.775	2.487	TBD
Certification and Accreditation	MIPR	JTIC : Ft Hichuaha, AZ	0.551	0.075	Oct 2012	0.075	Oct 2013	0.075	Oct 2014	-		0.075	0.303	1.079	TBD
		Subtotal	1.714	0.257		0.257		0.260		-		0.260	1.078	3.566	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Technical Support	PO	Mitre Corp : Offutt AFB, NE	5.565	0.795	Oct 2012	0.862	Oct 2013	0.870	Oct 2014	-		0.870	4.740	12.832	TBD
Program Management Administration	C/Various	Various : Various, NE	14.080	1.895	Oct 2012	2.431	Oct 2013	2.450	Oct 2014	-		2.450	8.240	29.096	TBD

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101313F / *Strat War Planning System - USSTRATCOM*	**Project (Number/Name)** 675059 / *Integrated Strategic Planning and Analysis Network (ISPAN)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	19.645	2.690		3.293		3.320		-		3.320	12.980	41.928	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	132.610	13.455		26.357		27.754		-		27.754	78.355	278.531	-

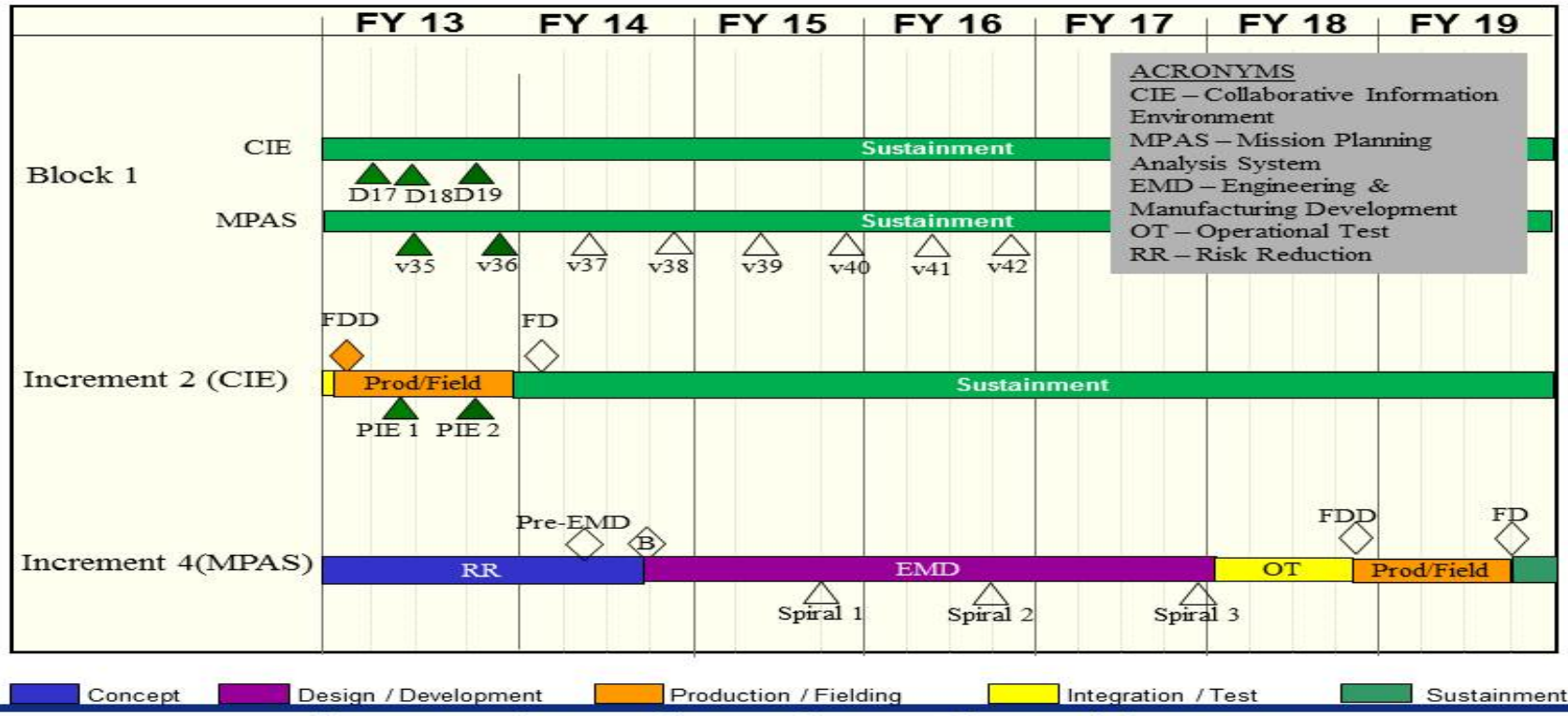
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101313F / *Strat War Planning System - USSTRATCOM*	**Project (Number/Name)** 675059 / *Integrated Strategic Planning and Analysis Network (ISPAN)*

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ISPAN Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101313F / *Strat War Planning System - USSTRATCOM*	**Project (Number/Name)** 675059 / *Integrated Strategic Planning and Analysis Network (ISPAN)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
ISPAN Increment 2 (CIE) FDD	1	2013	1	2013
ISPAN Increment 2 (CIE) FD	1	2014	1	2014
ISPAN Increment 4 (MPAS) Risk Reduction	1	2013	3	2014
ISPAN Increment 4 (MPAS) Milestone B	3	2014	3	2014
ISPAN Increment 4 (MPAS) Spiral 1 Delivery	3	2014	3	2015
ISPAN Increment 4 (MPAS) Spiral 2 Delivery	3	2015	3	2016
ISPAN Increment 4 (MPAS) Spiral 3 Delivery	3	2016	4	2017
ISPAN Increment 4 (MPAS) FDD	4	2018	4	2018
ISPAN Increment 4 (MPAS) FD	3	2019	3	2019

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0101313F / *Strat War Planning System - USSTRATCOM*	Project (Number/Name) 675368 / *GSIN (Global Integrated Sensor Network)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675368: *GSIN (Global Integrated Sensor Network)*	-	6.997	4.968	7.849	-	7.849	6.014	3.533	3.602	3.671	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The mission of USSTRATCOM is to establish and provide full-spectrum, global strike, coordinated space and information operations capabilities to meet both deterrent and decisive national security objectives, and to provide operational space support, integrated missile defense, Global Command Control Communications and Computers Intelligence Surveillance and Reconnaissance (C4ISR), and specialized planning expertise to the joint warfighter. This mission has been defined by the 2002 Unified Command Plan (UCP) changes 1 and 2, the CJCS Plan ORD and the USSTRATCOM Plan ORD. GSIN nets together selected systems and sensors, from tactical to strategic, including the Nation's most modern and capable assets, taking advantage of their larger numbers, improved algorithms, mobility and forward deployment to provide earlier cross-cueing and expanded decision space when every second counts. GSIN will enable a User Defined Operating Picture (UDOP) to provide a single, unambiguous missile event picture allowing real-time senior collaboration for nuclear C2, improved senior leader situational awareness (SA), and decision-making.

The Nation's strategic C2, sensors and mission planning programs cannot rapidly exchange information across multiple missions, creating ambiguity that delays time critical national C2 decision making processes. GSIN establishes a unified schema integrating disparate Missile Warning/Missile Defense (MW/MD) data into a single exposed data set providing redundant and unambiguous MW/MD data to national leadership. GSIN enables existing sensors to provide data in net-centric formats consumable by other authorized systems and mission areas, thus reducing the need to acquire more sensors. Activities also include studies and analysis to support both current program planning, execution, and future program planning.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Sensor Data Exposure: NDPP, TPY-2, MASINT	5.531	3.503	5.008
Description: Non traditional Data Pre Processor (NDPP): Design, develop, expose and integrate SSA data from Commercial, Owner-Operator, and Allied non-traditional sensors into space production systems, Space Catalog via the Global Information Grid. Develop implementation plans to mature data exposure capabilities. Army Navy Transportable Radar (AN/TPY-2): Design, develop, test, expose and integrate Space Situational Awareness (SSA) data from the missile defense AN/TPY-2 sensor into space production systems and the Global Information Grid. Develop implementation plans to mature data exposure capabilities. Measurement and Signals (MASINT) / Technical Intelligence (TI): Designs, develops, exposes, and integrates data from MASINT and Technical Intelligence sensors in regions of the world where we currently do not have coverage. Provides near real time data from sensors that previously reported hours or days after events.			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101313F / *Strat War Planning System - USSTRATCOM*	**Project (Number/Name)** 675368 / *GSIN (Global Integrated Sensor Network)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: NDPP: Started design and development of NDPP. Delivered NDPP prototype to AFSPC/A9. TPY-2: Began design and development of the exposure of SSA data from AN/TPY-2 sensor. MASINT/TI: Began design and development of MASINT/TI Phase 1 (sensor names classified) exposure capability. ***FY 2014 Plans:*** NDPP: Continue to develop NDPP capability and integrate with space production systems and the Space Catalog. Complete development and testing of operational prototype for delivery to JSpOC. TPY-2: Continue development of the exposure of SSA data from the missile defense AN/TPY-2 sensor. Design/plan integration with space production systems. MASINT/TI: Continue development of MASINT/TI Phase 1 exposure capability. ***FY 2015 Plans:*** NDPP: Finalize development of NDPP capability and integration with space production systems and the Space Catalog. Develop implementation plans to mature data exposure capabilities. TPY-2: Will continue development and begin testing of the exposure of SSA data from the missile defense AN/TPY-2 sensor. Integration development with space production systems. MASINT: Complete development of MASINT Phase 1 exposure capability.			
Title: Data Integration: Launch Characterization, Data Services, Net Centric Data Integration, Schema, Configuration Control, Technical Outreach	1.466	1.465	2.841
Description: Develop common XML net-enabled data schemas and configuration management processes and procedures for Missile Warning, Missile Defense, Space, MASINT/Technical Intelligence, Sensor data to manage the XML schema and associated XML messaging and services. Develop technical outreach for potential new GSIN data consumers and providers who require GSIN sensor data. Upgrade GSIN capabilities as DISA Enterprise Services evolve. Continue modifications to data services. Support integration of GSIN sensor data into appropriate registries/catalogs. Continue development of GSIN data services to enable visualization in a common operating picture. Conduct studies and demonstrations of SSA capabilities, data correlation, launch event characterization and assessment services for risk reduction evaluations.			
FY 2013 Accomplishments: Continued incremental development of common, XML net-enabled data schema to integrate Missile Warning, Missile Defense Sensor data for DISA Secret and below interoperability. In FY13, began technical support of Space Situational Awareness and MASINT/TI sensor data. Developed and modified configuration control processes and procedures to manage the XML schema and associated XML messaging and services. Continued software development of launch characterization service to enable display of data in a common operating picture. Deployed initial version to DISA for testing and integration.			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101313F / *Strat War Planning System - USSTRATCOM*	**Project (Number/Name)** 675368 / *GSIN (Global Integrated Sensor Network)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue development of launch characterization software to expose additional sensor data. Begin integration of launch characterization service with visualization. Continue modifications to data services. Minor enhancements and modifications to MD and MW data exposure services based on changes to common XML schema and DISA Enterprise Services. ***FY 2015 Plans:*** Continue to develop common XML net-enabled data schemas to integrate sensor data, and continue to develop configuration control processes, technical outreach processes for new GSIN data consumers and providers. Upgrade GSIN capabilities as DISA Enterprise Services evolve. Continue modifications to data services.			
Accomplishments/Planned Programs Subtotals	6.997	4.968	7.849

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

GSIN will use existing contract vehicles to manage, develop and modernize the combined Space Situational Awareness/Missile Warning/Missile Defense data exposure architecture and solution. These contract vehicles are already in place and available.

E. Performance Metrics

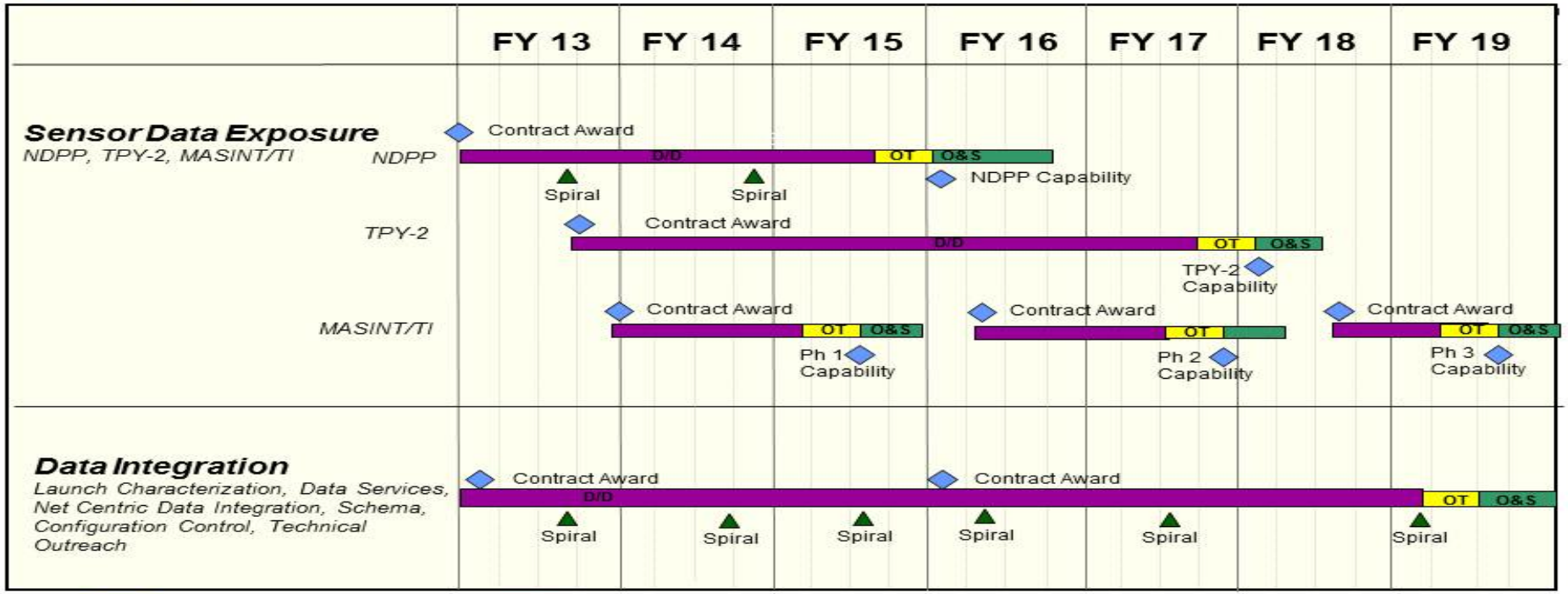
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0101313F / *Strat War Planning System - USSTRATCOM*	**Project (Number/Name)** 675368 / *GSIN (Global Integrated Sensor Network)*

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GSIN Schedule



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0102326F / *Region/Sector Operation Control Center Modernization Program*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	4.161	1.624	1.522	-	1.522	-	-	-	-	-	7.307
674592: *R/SAOC MODERNIZATION*	-	4.161	1.624	1.522	-	1.522	-	-	-	-	-	7.307
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Battle Control System-Fixed (BCS-F) is the operational equipment replacement in the fixed air defense sites, Region/Sector Air Operations Center (R/SAOC), also known as Region Air Operations Center-Air Defense Sector (RAOC-ADS). The BCS-F Program, which supports a next-generation battle management command and control system with enhanced capability to integrate data from existing and future civil and military defense surveillance systems into a comprehensive recognized air picture and National Capital Region/Integrated Air Defense System (NCR/IADS). This multi-input single integrated air control picture enhances the North American Aerospace Defense/Combatant Commander's (NORAD/CC's) capability to conduct peacetime air sovereignty, transition, and conventional warfare in the event of aggression toward the North American continent (including Hawaii). The BCS-F system serves as the Air Force's Homeland Defense battle management, command, and control hub and integrates data from radar sensors, data links, and the supporting communications architecture. It provides the tactical communications and data link capabilities that enable planning, directing, coordinating, and controlling forces for air surveillance, air defense, and control of sovereign US air space (including the National Capital Region). BCS-F is a bi-national cooperative program with Canada, ensuring air defense and surveillance capability for the entire North American continent (including Hawaii). BCS-F achieved Initial Operational Capability in October 2006 and full deployment declaration in Nov 2012.

NCR-IADS is the post-September 11, 2001, quickly established, ground based air defense system using sensors to enhance the air surveillance picture and is incorporated into BCS-F.

Battle Control System Modernization/Sustainment: The BCS M/S program efforts include, but are not limited to, providing system changes to facilitate mission area changes such as Radiant Mercury (RM) Redundancy, Sensor Integration, Battle Control Center (BCC) Expansion, Automatic Dependent Surveillance-Broadcast (ADS-B) and Remote Tactical Air Picture (RTAP) extensibility. Activities also include studies and analysis to support both current program planning and program execution, as well as future program planning.

This program is in Budget Activity 07, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0102326F / *Region/Sector Operation Control Center Modernization Program*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	5.609	1.700	1.500	-	1.500
Current President's Budget	4.161	1.624	1.522	-	1.522
Total Adjustments	-1.448	-0.076	0.022	-	0.022
• Congressional General Reductions	-	-0.076			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-0.008	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.039	-			
• SBIR/STTR Transfer	-0.401	-			
• Other Adjustments	-	-	0.022	-	0.022

Change Summary Explanation

FY13 funding were reprogrammed to PE 0207412F, Control and Reporting Center, for AN/TYQ-23 Operations Module System Modernization

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: NCR-IADS	0.392	-	-
Description: The fielding and delivery of software version 3.3 ***FY 2013 Accomplishments:*** Completed fielding delivery of version 3.3. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Title: Battle Control System Modernization/Sustainment	3.769	1.624	1.522
Description: The development, systems engineering, test and evaluation of the BCS M/S program to include Release 3.2.2 efforts and beyond. ***FY 2013 Accomplishments:***			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0102326F / *Region/Sector Operation Control Center Modernization Program*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
This program performed development, systems engineering, test and evaluation of the BCS M/S program to include Release 3.2.2. ***FY 2014 Plans:*** This program is performing development, systems engineering, test and evaluation of the BCS M/S program to include Release of 3.2.2 efforts and RM Redundancy. ***FY 2015 Plans:*** This program will perform development, systems engineering, test and evaluation of the BCS M/S program to include RM and modification studies.			
Accomplishments/Planned Programs Subtotals	4.161	1.624	1.522

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA07: Line Item # 833030: *Battle Control System - Fixed*	14.494	14.412	2.708	-	2.708	1.699	6.458	4.040	4.113	Continuing	Continuing

Remarks

E. Acquisition Strategy

Battle Control System-Increment 3: The BCS-Fixed program utilized a sole source contracting strategy that declared full deployment, completing the ACAT 1AC program.

The BCS M/S program will use a sole source contracting strategy for the RM redundancy effort. Future acquisitions for sensor integration, ADS-B, and BCC Expansion are yet to be defined.

NCR-IADS Version 3: The NCR-IADS program utilizes a competitive contractor logistics support strategy to sustain and maintain the system.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0102326F / *Region/Sector Operation Control Center Modernization Program*	**Project (Number/Name)** 674592 / *R/SAOC MODERNIZATION*

BCS-F Program Schedule

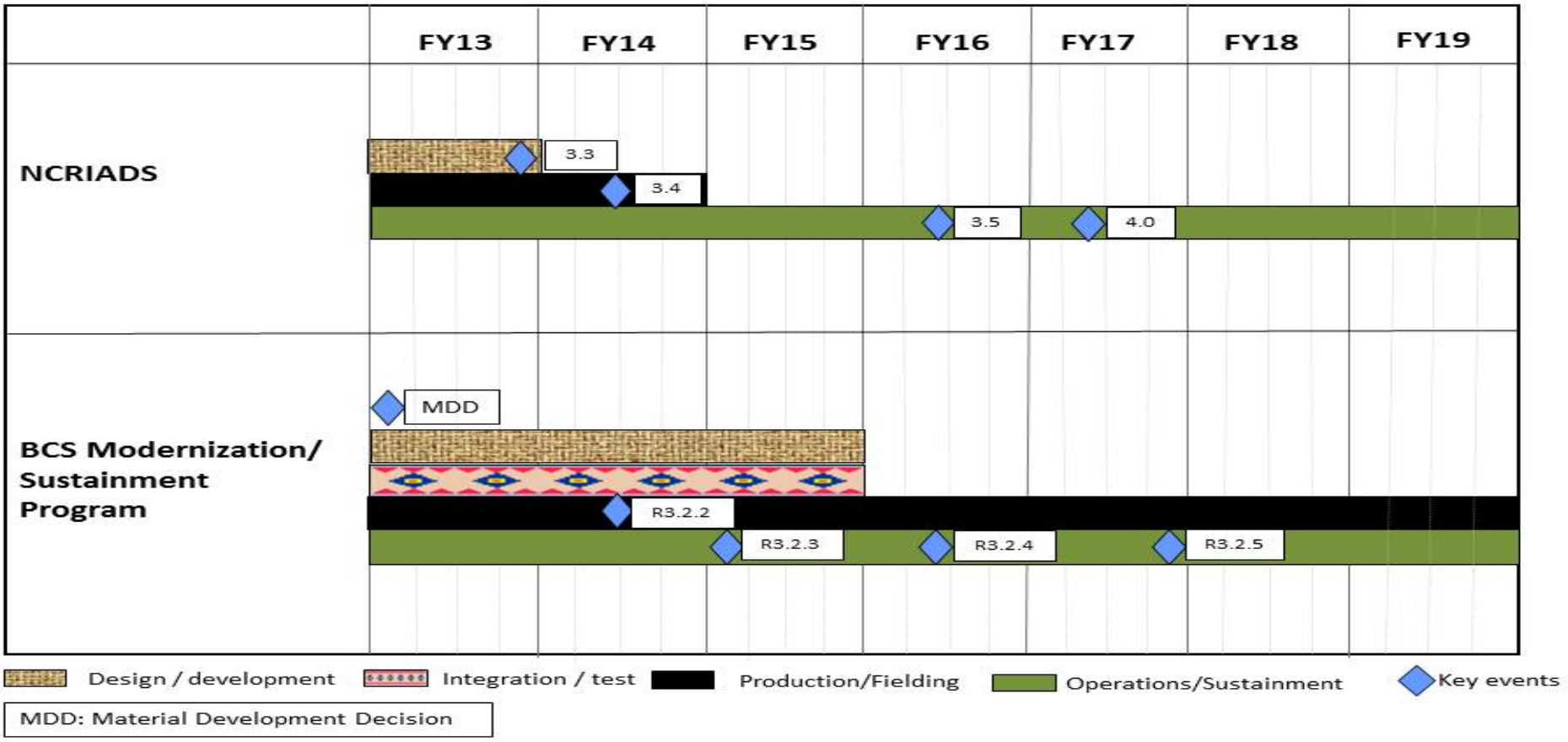


Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0105921F / *Service Support to STRATCOM - Space Activities*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	-	3.134	-	3.134	2.544	3.241	2.724	2.776	Continuing	Continuing
672486: *JOINT NAVWAR CENTER (JNWC) SPACE ACTIVITIES*	-	-	-	3.134	-	3.134	2.544	3.241	2.724	2.776	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In 2015, Project 672486 Joint NAVWAR Center (JNWC) Space Activities, efforts were transferred from PE 0105921F Service Support to STRATCOM - Space Activities, Projet 643833 Joint NavWar Center in order to align efforts with Budget Activity 7, Operational System Development.

A. Mission Description and Budget Item Justification

Navigation Warfare (NAVWAR) is deliberate defensive and offensive action to assure and prevent positioning, navigation, and timing (PNT) information through coordinated employment of space, cyberspace, and electronic warfare (EW) operations. The term NAVWAR is sometimes equated with "PNT Superiority." The Joint Navigation Warfare Center (JNWC) was established by DEPSECDEF Memo, 17 November 2004, as the DoD Center of Excellence, tasked to integrate and coordinate NAVWAR PNT capabilities across electronic spectrum, cyberspace, and space operations. NAVWAR leverages various techniques and technologies from these mission areas to negate or prevent hostile use of PNT information and protect unimpeded use of PNT information by U.S., Allied, and Coalition Forces while not unduly disrupting peaceful use outside an area of operation. The JNWC develops and maintains the Department's premier collection of NAVWAR knowledge, and provides subject matter expertise support to warfighters, Department decision makers, the Federal Interagency (the Department of Homeland Security and other civil agencies concerned with the Critical National Infrastructure), and the Coalition. NAVWAR expertise is developed in part by execution of PNT Operational Field Assessments (POFAs), modeling and simulation, analysis, and exercise and training support. In recent years, the Global Positioning System (GPS) has become one of the most critical enablers of modern advanced technology warfare. In an era where everything from advanced weapons systems and networks to basic goods and services are tracked, guided or disciplined by PNT systems such as GPS, NAVWAR is an ever increasing capability of interest and concern, especially if PNT systems are interrupted or lost. Likewise, as Global Navigation Satellite Systems (GNSS) proliferate, it becomes necessary to consider not only denying adversary use of GPS but also negating adversary use of alternate GNSS systems for PNT. Recent revisions to National Defense Strategy and Defense Planning Guidance require Combatant Commands to account for denied / degraded PNT environments in deliberate planning. Projecting force in the Asia-Pacific Region and other theaters of operation requires an understanding of how evolving global asymmetric anti-access / area denial (A2/AD) threats may affect joint warfighting functions. JNWC-conducted POFAs are a key element in evaluating Coalition NAVWAR capabilities and vulnerabilities and adversary capabilities and vulnerabilities, both crucial to executing PNT superiority mission sets in potentially denied / degraded PNT environments. JNWC helps develop defensive and offensive PNT capabilities by focusing on four Joint Mission Essential Tasks (JMETS):

1. Enable Defensive PNT Operations: enable operations that will protect blue force PNT capabilities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0105921F / *Service Support to STRATCOM - Space Activities*

2. Enable Offensive PNT Operations: enable PNT superiority capabilities that can take advantage of GNSS vulnerabilities.
3. Establish and Maintain PNT Situational Awareness (SA): assess current and projected blue force and red force PNT related capabilities.
4. Develop and Execute NAVWAR Operational Assessments and Analysis for Future NAVWAR Operations and conduct field assessments to evaluate blue force and red force capabilities and vulnerabilities.

The JNWC executes its assigned mission responsibilities through three lines of operation (LOO):

1. Create Knowledge for PNT Superiority: PNT operational field assessments, studies and analysis, assessment and dissemination of PNT related intelligence, and managing the PNT Superiority data repository
2. Operationalize PNT Superiority: Joint Force and Contingency Operations support to Combatant Commands, Services, and other customers through outreach; creating and demonstrating operational capability for PNT Superiority in the near term
3. Institutionalize PNT Superiority: Acquisition, policy, doctrine, and coalition support; creating the environment for robust PNT Superiority capability in the future

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	3.134	-	3.134
Total Adjustments	-	-	3.134	-	3.134
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	3.134	-	3.134

Change Summary Explanation

In 2015, Project 672486 Joint NAVWAR Center (JNWC) Space Activities, efforts were transferred from PE 0105921F Service Support to STRATCOM - Space Activities, Projet 643833 Joint NavWar Center in order to align efforts with Budget Activity 7, Operational System Development.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: PNT Operational Field Assessment (GYPSY)	-	-	1.592

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0105921F / *Service Support to STRATCOM - Space Activities*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: The JNWC will investigate, operationally assess, and simulate potential threats and mitigation strategies for potential denial of blue force PNT capabilities as well as preventing the hostile use of Positioning, Navigation and Timing (PNT) information. This will be accomplished primarily through the use of operational field assessments, laboratories, employment of competitively selected contractors, universities, other government agencies, and Federally Funded Research and Development Centers (FFRDCs). ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** Continue to investigate, operationally assess, and simulate potential threats and mitigation strategies for potential denial of blue force PNT capabilities as well as preventing the hostile use of Positioning, Navigation and Timing (PNT) information.			
Title: PNT Operational Field Assessments (FORTUNE) ***Description:*** The JNWC will investigate, operationally assess, and simulate potential threats and mitigation strategies for potential denial of blue force PNT capabilities as well as preventing the hostile use of Positioning, Navigation and Timing (PNT) information. This will be accomplished primarily through the use of operational field assessments, laboratories, employment of competitively selected contractors, universities, other government agencies, and Federally Funded Research and Development Centers (FFRDCs). ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** The FORTUNE Operational Field Assessments serve as a series of risk mitigation events as a lead up to the FY16 GYPSY Kilo POFA. FORTUNE POFAs are planned and executed to demonstrate various PNT system capabilities and platform vulnerabilities to increase the Joint Navigation Center's understanding of test objectives to be undertaken during a GYPSY event.	-	-	1.542
Accomplishments/Planned Programs Subtotals	-	-	3.134

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0105921F / *Service Support to STRATCOM - Space Activities*

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

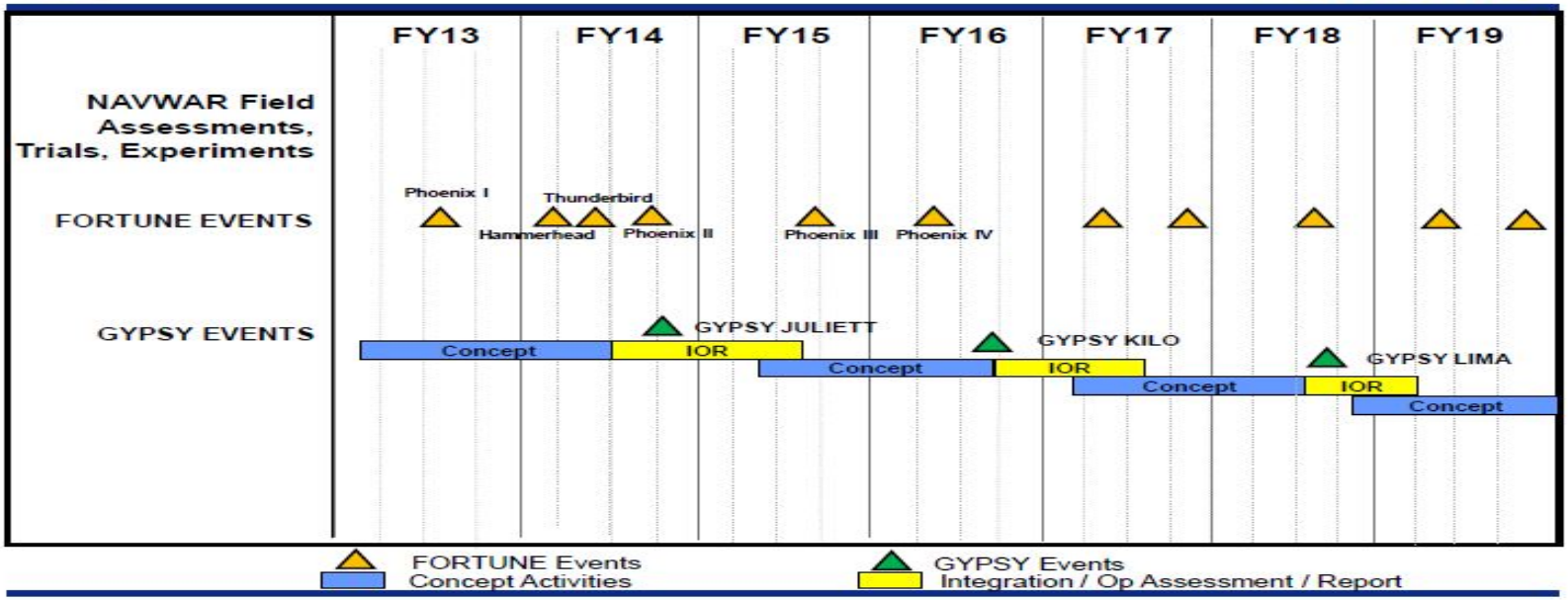
New contracts will be awarded using competitive procedures to the maximum extent possible.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0105921F / *Service Support to STRATCOM - Space Activities*	**Project (Number/Name)** 672486 / *JOINT NAVWAR CENTER (JNWC) SPACE ACTIVITIES*

NAVWAR Program Schedule



(U) Schedule Profile	FY13	FY14	FY15	FY16	FY17	FY18	FY19
(U) NAVWAR Operational Field Assessments – FORTUNE Events	3Q	1Q,2Q,3Q	3Q	2Q	2Q,4Q	3Q	2Q,4Q
(U) NAVWAR Operational Field Assessments - GYPSY Events		4Q		3Q		3Q	

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0203761F / *Warfighter Rapid Acquisition Process (WRAP) Rapid Transition Fund*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	4.416	-	-	-	-	-	-	-	-	Continuing	Continuing
674936: *Warfighter Rapid Acquisition Program*	-	4.416	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 674936, Warfighter Rapid Acquisition Program, was terminated.

A. Mission Description and Budget Item Justification

Warfighter Rapid Acquisition Process (WRAP) is a CSAF-directed initiative that supports the specific DoD goal of significantly shortening the acquisition response time and acquisition cycle times. This process is expected to shorten the project decision/initiation time by 2-5 years for selected projects due to the integrated headquarters review and immediate availability of transition funding. The WRAP process allows the Air Force the flexibility to accelerate the development and fielding of operational initiatives resulting from innovation and transition them to the warfighter in a manner that coincides with Air Forces' development of the President's Budget. Candidate projects will compete for WRAP approval and funds based on business case analyses, actual or potential operational impacts, cost savings, project development, production, lifecycle costs, and project risk. The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of WRAP-approved projects. Each project will have a complete acquisition plan defined and approved as a criterion for project selection and subsequent funding. Each sponsoring Major Command/Agency must commit full project funding in the subsequent programming cycle. Congress will be notified when all projects have been approved by the end of the current fiscal year via Congressional Notification Letters.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0203761F / *Warfighter Rapid Acquisition Process (WRAP) Rapid Transition Fund*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	15.098	3.844	12.914	-	12.914
Current President's Budget	4.416	-	-	-	-
Total Adjustments	-10.682	-3.844	-12.914	-	-12.914
• Congressional General Reductions	-0.007	-			
• Congressional Directed Reductions	-10.000	-3.844			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.145	-			
• Other Adjustments	-0.530	-	-12.914	-	-12.914

Change Summary Explanation

FY13 Congressional Directed Reduction due to unobligated balances, decrease in Other Adjustments was due to sequestration.

FY 14 Congressional Directed Reduction is due to program decrease.

FY15 This program was terminated for higher Air Force priorities.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Program selection/initiation	4.416	-	-
Description: WRAP accelerates the development, thus subsequent fielding, of operational initiatives resulting from innovation. It provides funding to promising operational initiatives so that they may begin formal development activities during the current fiscal year. ***FY 2013 Accomplishments:*** Selected qualified programs. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	4.416	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0203761F / *Warfighter Rapid Acquisition Process (WRAP) Rapid Transition Fund*

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

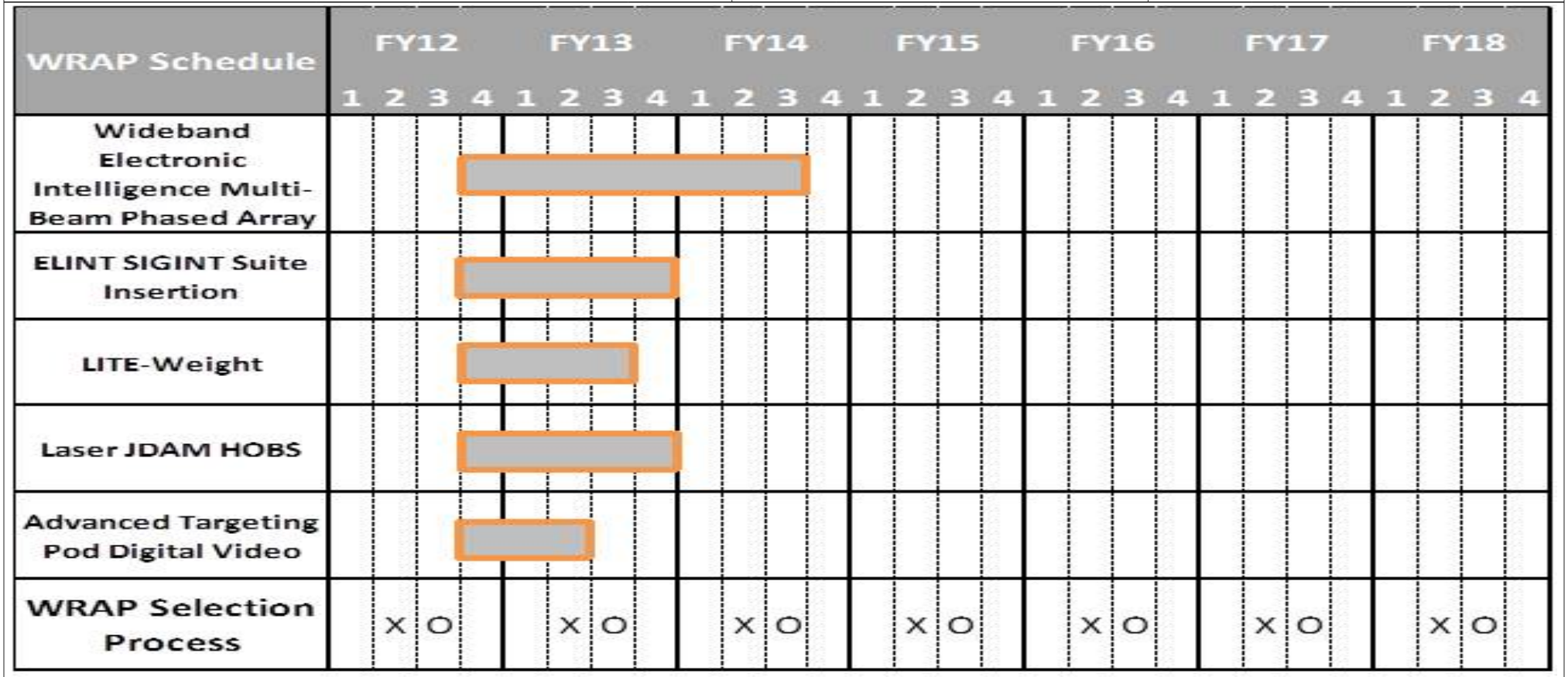
E. Acquisition Strategy

WRAP enables Air Force innovation including experimentation and spiral development processes to decrease fielding timelines and allows development, fielding, or upgrading of systems until the sponsoring MAJCOM/Agency can incorporate them into their subsequent submission. The Air Force, through appropriate program offices, will manage the acquisition and development process for the integration and fielding of WRAP approved projects. Each project will have a complete acquisition plan defined and approved as a criterion for project selection and subsequent funding. The Air Staff and the Air Force corporate structure will complete an Operations and Acquisition Review to ensure project affordability and appropriateness within the Air Force Overall program.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0203761F / *Warfighter Rapid Acquisition Process (WRAP) Rapid Transition Fund*	**Project (Number/Name)** 674936 / *Warfighter Rapid Acquisition Program*



X	Annual Data Call for WRAP Projects
O	Award of project funding for selected programs

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0205219F / *MQ-9 UAV*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	582.946	130.882	107.338	170.396	-	170.396	124.260	139.996	175.539	145.746	76.197	1,653.300
675246: *MQ-9 Development and Fielding*	582.946	130.882	107.338	170.396	-	170.396	124.260	139.996	175.539	145.746	76.197	1,653.300
Quantity of RDT&E Articles	3.000	-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 424

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The basic MQ-9 Reaper system consists of the aircraft, sensors, a ground control station (GCS), communications equipment, weapon kits, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. The system is designed to be modular and open-ended. Mission-specific equipment is employed in a 'plug-and-play' mission kit concept allowing specific aircraft and control station configurations to be tailored to fit mission needs.

The MQ-9 Reaper aircraft is a single-engine, turbo-prop Remotely Piloted Aircraft (RPA) designed to operate over-the-horizon at medium-to-high altitude for long endurance sorties. The aircraft is designed primarily to prosecute critical, emerging Time-Sensitive-Targets (TSTs) as a radar, Electro-optical/Infrared (EO/IR), and laser designator-based attack asset with on-board hard-kill capability (hunter-killer). It also performs Intelligence, Surveillance, Reconnaissance and Target Acquisition (ISR TA). In the hunter-killer role, the aircraft employs fused multi-spectral sensors to find, fix, and track ground targets using Automatic Target Cueing (ATC), high definition EO/IR, metric sensor and other capabilities, and assesses post-strike results. The MQ-9 system is continuing to develop field capability through incremental upgrades. Future capabilities development activity includes airframe and airframe system improvements such as: increasing the maximum gross takeoff weight capability of the aircraft from 10,500 to 11,700lbs; increasing the operational range and endurance of the baseline MQ-9 aircraft (adding external fuel tanks and/or airframe modifications such as wing extensions); incorporating an anti-ice/de-ice capability to transit light icing conditions (will involve wing/tail modifications as well as turbine inlet heating); propulsion system improvements; enhancing MQ-9 systems to include Automatic Takeoff and Landing Capability (ATLC); integrated redundant avionics; modifying the system to include provisions for a Foreign Military Sales (FMS) exportable version of the weapon system; Predator Primary Data Link (PPDL) communication system upgrades and communications upgrades to include data link encryption, IP networking, and Beyond Line-of-Sight comm upgrades; navigation system upgrades; electrical system upgrades; incorporation of Elevated Temperature Wet (ETW) materials; secure voice and data communications, including SATCOM upgrades; sensor/stores management computer improvement; MIL-STD-1760 advanced weapons data bus; Universal Armament and Sensor Interface and Miniature Munitions/Store Interface; advanced sensor and weapon payloads; improved human-machine interface (HMI); integrating precision weapons (e.g. AGM-114 Hellfire missile, GBU-12/38/49 guided bombs, and Small Diameter Bomb (SDB) variants); hardware and software upgrades to the ground control station for MQ-9 operations; completing airworthiness certification; weapon system certification and accreditation; and producing applicable training devices that emulate weapon system functionality and capabilities. The MQ-9 program will continue to support other payload and capability development activities funded in other program elements (e.g. SIGINT, communications, Wide Area Motion Imagery (WAMI) leveraging Gorgon Stare Quick Reaction Capability, advanced Counter-Improvised Explosive Device (C-IED), Dismount Detection Radar (DDR), missile defense, hyperspectral, and other sensors and weapons) and address reliability, maintainability, sustainability, and safety

issues. Activities also include trade studies, analyses, preliminary systems engineering, system and subsystem level testing in accordance with DoD and military standards, and specification development in support of both current program planning and execution, and studies supporting analysis and investment in future MQ-9 program planning.

The GCS, common with the MQ-1 Predator, functions as the aircraft cockpit and can control the aircraft either within Line-of-Sight (LOS) or Beyond Line-of-Sight (BLOS) via a combination of satellite relay and terrestrial communications. The GCS is either mobile to support forward operating locations or fixed at a facility to support Remote Split Operations (RSO). The GCS has the capability to perform mission planning; provides a means for manual control; allows personnel to launch, recover, and monitor aircraft, payloads, and system communications status; incorporates secure data links to send aircraft and payload commands and receive system telemetry and payload data; monitors threats to the aircraft; displays the common operational picture; and provides support functions. Launch and Recovery GCS (LRGCS) allows for servicing, systems checks, maintenance, launch and recovery of aircraft under LOS control for hand-off to a mobile or fixed facility GCS, and conducting operations within line-of-sight range of the LRGCS. GCS upgrades will be developed and fielded in coordination with improvements to MQ-9 system capabilities and in response to evolving operational and information assurance/certification and accreditation requirements. Key efforts include GCS upgrades that add new LINUX processors, high definition monitors, ergonomic improvements, improved human-machine interfaces, open systems architecture, and improved crew habitability. In addition, the GCS upgrade effort also includes development/integration of the Unmanned Aircraft Systems (UAS) Command and Control (C2) Initiative (UCI) government-owned standard to enable improved capabilities for situational awareness and multi-mission management monitoring and oversight in the GCS. This project will also increase interoperability among developed systems by developing common standard and tools.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	147.971	128.328	194.561	-	194.561
Current President's Budget	130.882	107.338	170.396	-	170.396
Total Adjustments	-17.089	-20.990	-24.165	-	-24.165
• Congressional General Reductions	-0.195	-0.320			
• Congressional Directed Reductions	-	-20.670			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.000	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-11.894	-	-24.165	-	-24.165

Change Summary Explanation

- Decrease in FY 2013 is due to Sequestration and reprogramming due to higher Air Force priorites.
- Decrease in FY 2014 was due to forward financing.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

- Reduction of $24.165M in FY15 due to higher AF priorities.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: MQ-9 System Development and Demonstration (SDD)	22.666	26.070	47.840

Description: Complete development to meet MQ-9 Capabilities Production Document (CPD) requirements.

FY 2013 Accomplishments:
Continued development of MQ-9 Block 5 unmanned aircraft system (UAS) related development and test; High Capacity Starter-Generator, Predator Primary Data Link (PPDL), Two ARC-210 Radios, Redesigned Forward Avionics Bay, Dashboard w/ Integrated Sensor Control System (ISCS), Mission Control Module/Payload Control Computer, Improved BRU-71/A Bomb Rack, Improved Stores Management System, High-Definition MTS-B, Improved Heavyweight Landing Gear, integration and productionization, integration, testing, and training documentation. All related system engineering activities to include airworthiness artifact development required to field Block 5 and 904.6.

Milestones: Critical Design Review (CDR) completed FY11. Interim software for Block 5 system activities scheduled for delivery in FY16. Developmental test begun for High Capacity Starter-Generator, Predator Primary Data Link (PPDL), Two ARC-210 Radios, Redesigned Forward Avionics Bay, Dashboard w/ Integrated Sensor Control System (ISCS), Mission Control Module/ Payload Control Computer, Improved BRU-71/A Bomb Rack, Improved Stores Management System (ISMS), High-Definition MTS-B, Improved Heavyweight Landing Gear (IHLG), Automatic Take-off and Landing (ATLC), 904.6 software development, integration and productionization.

FY 2014 Plans:
Continue MQ-9 Block 5 Unmanned Aircraft System (UAS) capability development to include: Developmental test for High Capacity Starter-Generator, Predator Primary Data Link (PPDL), Two ARC-210 Radios, Redesigned Forward Avionics Bay, Dashboard w/ Integrated Sensor Control System (ISCS), Mission Control Module/Payload Control Computer, Improved BRU-71/ A Bomb Rack, Improved Stores Management System, High-Definition Multi-sprectral Targeting System (MTS-B), Improved Heavyweight Landing Gear, integration and productionization, Automatic Take-off and Landing, and 904.6 software development.

FY 2015 Plans:
Will continue MQ-9 Block 5 Unmanned Aircraft System (UAS) capability development to include: Developmental test for High Capacity Starter-Generator, Predator Primary Data Link (PPDL), Two ARC-210 Radios, Redesigned Forward Avionics Bay, Dashboard w/ Integrated Sensor Control System (ISCS), Mission Control Module/Payload Control Computer, Improved BRU-71/ A Bomb Rack, Improved Stores Management System, High-Definition Multi-spectral Targeting System (MTS-B), Improved Heavyweight Landing Gear, integration and productionization, Automatic Take-off and Landing, and 904.6 software development.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY15 also includes the start of the 904.8 software development: Video Orientented Transceiver for EXchange of Information(VORTEX) Phase 2 data link, integration of Tech Insertion, integration of Electro-optical Infra-red sensor upgrades, Block 50 Ground Control Station (GCS) Phase 2 and integration and testing of other communications, sensors and weapons capabilities.			
Title: Ground Control Station (GCS) Development ***Description:*** Develop Ground Control Station (GCS) capabilities. Major capabilities include open system architecture, multi-level security, ergonomic cockpit design, and reducing or eliminating known deficiencies in legacy GCS. ***FY 2013 Accomplishments:*** Finished development of one Block 50 prototype asset. The major events included software integration to bring the prototype to an 80% design solution and to put the prototype through ground and flight testing. Started Block 50 design/development and manufacturing of two (2) System Test and Qualification (ST&Q) Software Integration Labaoratories (SILs), one (1) Technical Order development SIL, two (2) Fixed GCS, two (2) Mobile GCS, two (2) software developer kits, and the associated spares for the Block 50 configuration. Reduce or eliminate any known deficiencies in legacy GCS. ***FY 2014 Plans:*** Continue Block 50 design/development and manufacturing. Events in FY14 will include upgrading the system software. A Systems Requirements Review, Preliminary Design Review, and two Cockpit Evaluation Team events will take place as well. Reduce or eliminate any known deficiencies in legacy GCS. ***FY 2015 Plans:*** Will continue Block 50 design/development and manufacturing. Events in FY15 will include the hardware and software integration, a Critical Design Review, and the completion of the 7 GCS assets. Reduce or eliminate any known deficiencies in legacy GCS.	6.290	27.366	30.042
Title: MQ-9 Electro-Optic / Infrared (EO/IR) Sensor ***Description:*** Develop improved Multi-Spectral Targeting System (MTS-B) modes of operation and upgrade full motion video capability to include an all digital architecture employing High-Definition (HD) camera formats, imagery improvements across all multi-spectral bands (color and infrared) and Target Location Accuracy enhancements (TLA) to support future use of coordinate seeking weapons. ***FY 2013 Accomplishments:*** Continued the development of MTS-B all digital HD TLA architecture including mechanical electrical design, hardware and software fabrication, integration, and manned flight test/unmanned flight test of production representatives to achieve production	45.822	0.070	19.233

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
readiness. Provide preliminary design review for technology insertion architecture. Update MTS-B production representative software to facilitate integration of MTS-B HD TLA on the MQ-9 aircraft to include software integration lab testing. Begin system qualification and extended reliability testing. Produce final design and interface control documents, conduct test readiness reviews to assure system is ready for production. Formally release all MTS-B HD design and interface control documents. Prepare and delivery technical order source data and required training materials to facilitate fielding of HD TLA MTS-B. ***FY 2014 Plans:*** Continue development at reduced level of effort MTS-B all digital High Definition (HD) Target Location Accuracy (TLA) architecture including mechanical electrical design, hardware and software fabrication, integration, and manned flight test/unmanned flight test of prototypes to achieve production readiness. Update MTS-B production representative software to facilitate integration of MTS-B HD TLA on the MQ-9 aircraft to include software lab test. Continue system qualification and extended reliability testing. Produce final design and interface control documents, conduct test readiness reviews to assure system is ready for production. Formally release all MTS-B HD design and interface control documents. Prepare and deliver technical order source data and required training materials to facilitate fielding of HD TLA MTS-B. $70K added in FY14 to provide funding for safety evaluation to accomodate AF Laser System Safety Review Board approval of eye safe laser upgrade that is part to the MTS-B TLA upgrade. ***FY 2015 Plans:*** Will complete HD TLA MTS-B system qualification and extended reliability testing. Support final integration and test of completed HD TLA MTS-B system on MQ-9 platform. Support unmanned flight test.			
Title: Operator Simulator ***Description:*** Develop operator simulators for training and updates to keep Operator Simulator current with upgrades to aircraft and Ground Control Station (GCS). Note: Funding and contracting for this effort is not required every year but is required periodically as changes to aircraft and Ground Control Station hardware/software is developed and fielded. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Continue updates to Operator Simulator with upgrades to trainers, hi-definition electro-optical/infra-red (EO/IR), Lynx Synthetic Aperture Radar (SAR) enhancements, and Ground Control Station (GCS) Block 50. ***FY 2015 Plans:*** Will continue continue to implement updates which will keep the Operator Simulator current with the aircraft and Ground Control Station. These updates will include, but are not limited to, sensor, databases and weapons upgrades.	-	5.069	11.757
Title: Synthetic Aperture Radar (SAR) Enhancements	7.063	9.250	7.330

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Improvements in MQ-9 capability to disseminate SAR data, improve Ground Moving Target Indicator (GMTI) tracking, automation of data exploitation via Continuous Look Attack Management for Predator (CLAMP) and improvement of GPS targeting. ***FY 2013 Accomplishments:*** Continued SAR Data Dissemination development, Dual Beam Dismount Development, GPS targeting, and Feature Aided Tracker. ***FY 2014 Plans:*** Complete Dual Beam Dismount capability development. Complete Feature Aided Tracker development. Begin development of Stationary Targeting Improvements for GPS-based weapons. Develop common architecture for Data Dissemination, and re-qualify radar software and hardware updates and sensor control interface changes. ***FY 2015 Plans:*** Will complete Data Dissemination development and continue developing Stationary Targeting Improvements for GPS-based weapons.			
Title: Test Support ***Description:*** Provides Other Government Agency support for MQ-1 and MQ-9 testing to include continued acceptance testing of weapon system hardware and software IAW with contract standards and developmental testing of new capabilities and (Reliability and Maintainability (R&M) upgrades. Air Force Test Center executes Flight Operations Authority responsibilities and provides Combined Test Force support, Edwards AFB controlled airspace range time and assets, test scheduling, frequency management and test related munitions support. Naval Air Warfare Center (NAWC) China Lake provides on-site facilities support, controlled airspace range time, assets, and ground targets for weapons testing. Joint Interoperability Test Command provides standards conformance testing and interoperability certification for new capabilities. NAWC Patuxent River provides Electromagnetic Environmental Effects testing for the MQ-9 UAS. ***FY 2013 Accomplishments:*** Continued test support. ***FY 2014 Plans:*** Continue test support. ***FY 2015 Plans:*** Will continue test support.	1.854	2.403	1.278
Title: Communications	2.070	5.041	1.920

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Develop MQ-9 communication capabilities including encrypted Line of Sight (LOS) data links to ROVER terminals (VORTEX) and beyond LOS military SATCOM usage. Development and integration of an IP based Remote Split Operations (RSO) network/infrastructure to include: Design, development and test of IP based network interfaces, Improved Predator Primary Data Link (PPDL) capabilities, network systems managers, drafting Technical Orders and support documentation, Training Packages, Production Drawings and Retrofit Acceptance Test Plans. ***FY 2013 Accomplishments:*** Continued the development and integration of an IP based Remote Split Operations network/infrastructure to include: Design, development and test of IP based network interfaces, network systems managers, drafting Technical Orders and support documentation, Training Packages, Production Drawings and Retrofit ATPs. ***FY 2014 Plans:*** Continue the development of communications capabilities including the Network Enterprise Management Kit, Satellite Earth Terminal Sub-System (SETSS)/Fixed Site Satellite Terminal (FSST) Tech Order Updates, RSO Tech Order Development, Training Course Development and various logistics support analysis. Integration of IP based Remote Split Operations network infrastructure, and ground data terminals (GDT). ***FY 2015 Plans:*** Will continue the development of communications capabilities including the Network Enterprise Management Kit, Satellite Earth Terminal Sub-System (SETSS)/Fixed Site Satellite Terminal (FSST) Tech Order Updates, RSO Tech Order Development, Training Course Development, logistics support analysis, and integration of Internet Protocol (IP) based Remote Split Operations network infrastructure.			
Title: Counter-IED Development and Demonstration ***Description:*** Adding "Step Stare" mode capability to the MTS-B EO/IR sensor; also includes associated GCS development and testing. ***FY 2013 Accomplishments:*** Continued development/modification to sensor to add "Step Stare" mode capability to the MTS-B EO/IR sensor; also included associated GCS development and testing. ***FY 2014 Plans:*** Complete development/modification to sensor to add "Step Stare" mode capability to the MTS-B EO/IR sensor; also included associated GCS development and testing. ***FY 2015 Plans:***	1.930	3.530	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
N/A			
Title: Multi-aircraft Transit Operations (MTO) ***Description:*** Multi-aircraft transit operation is to develop a core functionality to enable one pilot to safely control multiple RPA in non-segregated airspace on an instrument flight rules (IFR) flight plan between airfield and mission area(s) ***FY 2013 Accomplishments:*** Continued development of multi-aircraft transit operations functionality for RPAs. Incorporating Unmanned Aerospace System (UAS) Command and Control (C2) Iniative (UCI) software architecture and improved Human Machine Interface upgrades to better enable monitoring and oversight of multi-mission activity. ***FY 2014 Plans:*** Continue development of multi-aircraft transit operations functionality for RPAs. Incorporates UCI software architecture and improved Human Machine Interface upgrades to better enable monitoring and oversight of multi-mission activity. ***FY 2015 Plans:*** Will finish development of multi-aircraft transit operations functionality for RPAs, transition software to prime contractor, and support incorporation of the capability into the Block 50 GCS design	4.337	2.640	4.548
Title: MQ-9 Technology Insertion ***Description:*** Develop program protection Technology Insertion capabilities and functionality for the MQ-9 Weapon System. ***FY 2013 Accomplishments:*** Developed program protection Technology Insertion capabilities and functionality for the MQ-9 Weapon System. ***FY 2014 Plans:*** Continue development of program protection, Technology Insertion capabilities and functionality for the MQ-9 Weapon System including aircraft, sensors, and Ground Control Station documentation and drawings. ***FY 2015 Plans:*** Will continue and nearly finalizes development of program protection Technology Insertion capabilities and functionality for the MQ-9 Weapon System including aircraft, sensors, and Ground Control Station documentation and drawings.	14.608	11.546	16.896
Title: Reliability and Maintainability ***Description:*** Develop MQ-9 modification improvements for aircraft and ground base infrastructure. ***FY 2013 Accomplishments:***	2.591	-	5.017

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Developed MQ-9 modification improvements for aircraft and ground based infrastructure systems to improve mission capable rates and reduce reliability and maintainability cost. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** Will continue development of MQ-9 modification improvements for aircraft and ground based infrastructure to improve mission capable rates and reduce reliability and maintainability cost.			
Title: Extended Range ***Description:*** Develop Extended Range capability to increase operational range and endurance of the baseline MQ-9. ***FY 2013 Accomplishments:*** Developed Extended Range capability to increase operational range and endurance of the baseline MQ-9. ***FY 2014 Plans:*** Continue development of Extended Range capability to increase operational range and endurance of the baseline MQ-9. Technical solutions include modified wings and incorporating external fuel tanks. ***FY 2015 Plans:*** Will continue to develop Extended Range capability to increase operational range and endurance of the baseline MQ-9. Technical solutions include modified wings and incorporating external fuel tanks.	15.627	9.851	19.317
Title: Urgent Services ***Description:*** Urgent services, engineering change orders, program office support, studies and general research, and other higher level iniatives directed by the Air Force. ***FY 2013 Accomplishments:*** Continued urgent services, engineering change orders, studies and general research, and other higher level iniatives directed by the Air Force. ***FY 2014 Plans:*** Continue urgent services, engineering change orders, studies and general research, and other higher level iniatives directed by the Air Force. ***FY 2015 Plans:***	3.524	2.465	1.945

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Will continue urgent services, engineering change orders, studies and general research, and other higher level iniatives directed by the Air Force.			
Title: Afghan Enablers Development ***Description:*** Support Joint Urgent Operational Need (JUON)requirements to rapidly field sensor cross cue (slew-to-cue) functionality to improve track through clouds capability, advanced weapons, and high definition full motion video. ***FY 2013 Accomplishments:*** Design, develop, integrate, test, and field an initial increment of capability with the MQ-9 weapon system sensor cross cue functionality, integration of GBU-49 weapon with specialized warhead. ***FY 2014 Plans:*** Continue development, testing, and upgrades to field an initial increment of capability with MQ-9 weapon system sensor cross-cue functionality, integration of GBU-49 weapon with specialized warhead and high definition FMV capability. ***FY 2015 Plans:*** Will continue development, testing, and upgrades to field an initial increment of capability with the MQ-9 weapon system sensor cross cue functionality, integration of GBU-49 weapon with specialized warhead.	2.500	2.037	3.273
Accomplishments/Planned Programs Subtotals	130.882	107.338	170.396

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA04: Line Item # PRDTB1: *MQ-9*	681.530	349.217	240.218	-	240.218	437.739	296.176	551.205	542.825	242.388	3,341.298
• APAF: BA06:Line Item # PRDTB1: *MQ-9*	99.507	30.711	38.629	-	38.629	129.863	137.441	79.768	95.113	95.260	706.292
• APAF: BA05: Line Item # PRDTB2: *MQ-9 Mods*	177.471	62.970	155.445	-	155.445	115.632	210.099	164.319	144.606	1,080.558	2,111.100
• APAF: BA07: Line Item # PRDTB1: *MQ-9*	3.782	104.029	101.020	-	101.020	27.470	27.286	25.613	26.092	-	300.497
• RDTE: BA07: PE 0305206F: *Airborne Reconnaissance Systems*	14.916	10.000	-	-	-	-	-	-	-	-	-
• APAF: BA05: Line Item PRDTB3: *MQ-9 UAS Payloads*	84.470	-	-	-	-	-	-	-	-	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA06: PRDTB3: *MQ-9 UAS Payloads*	11.837	8.256	6.790	-	6.790	6.098	3.248	-	-	-	-

Remarks

E. Acquisition Strategy

The MQ-9 Reaper system will be acquired via sole-source contracts with General Atomics-ASI, L3Comm, and Raytheon as the prime contractors. GA-ASI is the prime contractor for aircraft and ground control stations. L3Comm is the prime contractor for the Predator Satellite Link. Raytheon is the prime contractor for the MTS-B EO/IR sensor system.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0205219F / *MQ-9 UAV*	Project (Number/Name) 675246 / *MQ-9 Development and Fielding*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MQ-9 System Development and Demonstration (SDD)	SS/CPIF	GA-ASI : Poway, CA	262.460	21.241	Jul 2013	23.550	Jan 2014	42.718	Dec 2014	-		42.718	312.615	662.584	662.584
Ground Control Station (GCS) Development	SS/CPFF	GA-ASI : Poway, CA	81.994	5.894	Jan 2013	24.721	Mar 2014	26.825	Jan 2015	-		26.825	163.926	303.360	303.360
MQ-9 Electro-Optical / Infrared (EO/IR) Sensor	SS/CPFF	Raytheon : McKinney, TX	55.284	42.941	Dec 2012	0.063	Mar 2014	17.173	Dec 2014	-		17.173	-	115.461	115.461
Operator Simulator	SS/CPIF	L3 Comm : Salt Lake City, UT	19.702	-		5.069	May 2014	11.757	Jan 2015	-		11.757	29.658	66.186	66.186
Synthetic Aperture Radar (SAR) Enhancements	SS/CPFF	GA-RSG : Poway, CA	30.211	6.619	Dec 2012	8.356	Mar 2014	6.545	Jan 2015	-		6.545	5.176	56.907	56.907
Communication	SS/CPFF	GA-ASI : Poway, CA	8.438	2.070	Jan 2013	5.041	Apr 2014	1.920	Dec 2014	-		1.920	17.716	35.185	35.185
Counter-IED Development and Demonstration	SS/CPIF	Various : Various,	25.555	1.930	Mar 2013	3.530	Dec 2013	-		-		-	-	31.015	31.015
GCS Multi Transit Ops	SS/CPFF	GA-ASI : Poway, CA	3.040	4.337	Jan 2013	2.640	Mar 2014	4.548	Dec 2014	-		4.548	8.729	23.294	23.294
MQ-9 Program Protection Technology Insertion	SS/CPFF	GA-ASI : Poway, CA	0.000	13.690	Jun 2013	10.430	Mar 2014	15.087	Jan 2015	-		15.087	13.440	52.647	52.647
Reliability and Maintainability	SS/CPFF	GA-ASI : Poway, CA	0.300	2.591	Mar 2013	-		5.017	Dec 2014	-		5.017	21.556	29.464	29.464
Extended Range	SS/CPFF	GA-ASI : Poway, CA	0.000	14.644	Mar 2013	8.899	Mar 2014	17.249	Oct 2014	-		17.249	-	40.792	40.792
Urgent Services/Misc Prior	SS/CPFF	GA-ASI : Poway, CA	62.791	3.525	Mar 2013	2.465	May 2014	1.945	May 2015	-		1.945	8.356	79.082	79.082
Afghan Enablers Development	SS/CPFF	GA-ASI : Poway, CA	0.000	2.500	Dec 2013	2.037	Jan 2014	3.273	Dec 2014	-		3.273	-	7.810	7.810
		Subtotal	549.775	121.982		96.801		154.057		-		154.057	581.172	1,503.787	1,503.787

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0205219F / *MQ-9 UAV*	Project (Number/Name) 675246 / *MQ-9 Development and Fielding*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	Various	Various : ,	14.154	1.854	Oct 2012	2.403	Jan 2014	1.278	Dec 2014	-		1.278	8.440	28.129	28.129
		Subtotal	14.154	1.854		2.403		1.278		-		1.278	8.440	28.129	28.129

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Costs	Various	Various : Various, CA	19.017	7.046	Oct 2012	8.134	Oct 2013	15.061	Oct 2014	-		15.061	72.126	121.384	121.384
		Subtotal	19.017	7.046		8.134		15.061		-		15.061	72.126	121.384	121.384

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	582.946	130.882		107.338		170.396		-		170.396	661.738	1,653.300	1,653.300

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

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U.S. AIR FORCE

MQ-9 Reaper Program Schedule

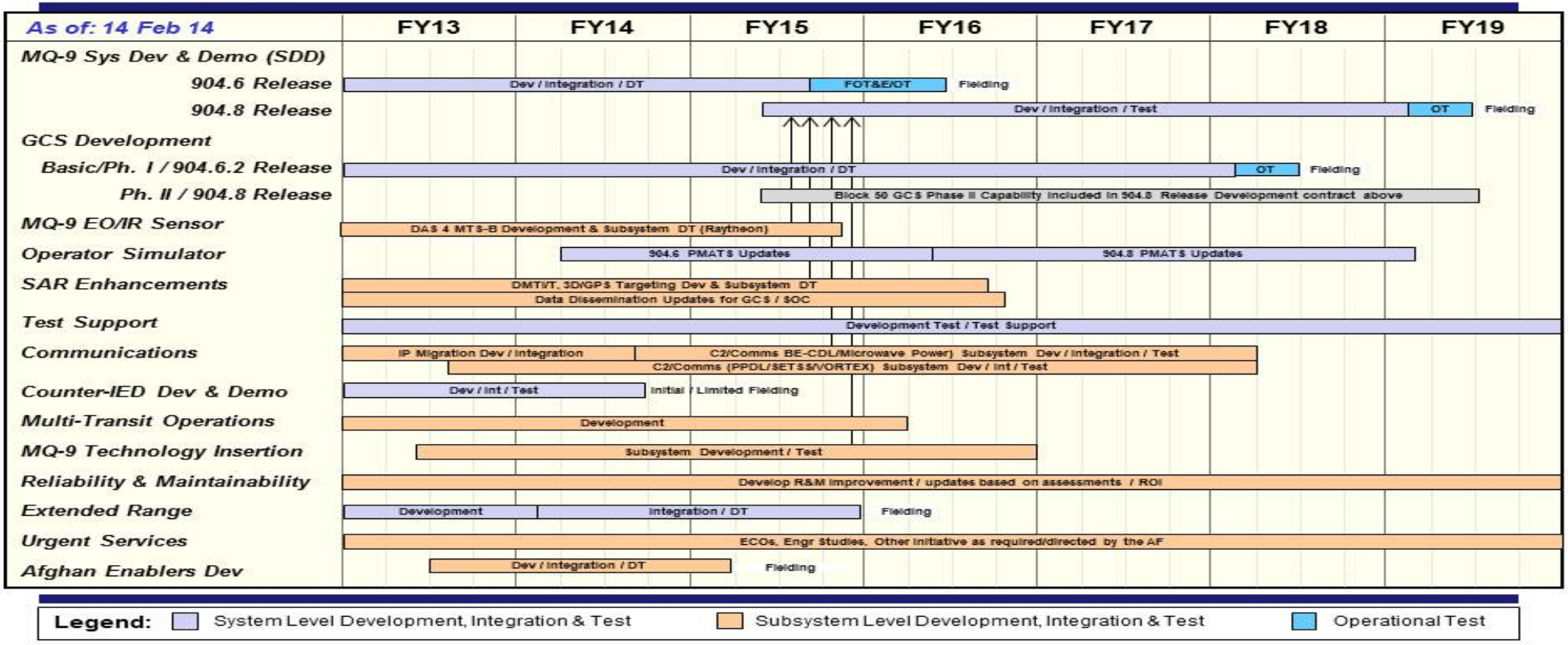


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0205219F / *MQ-9 UAV*	**Project (Number/Name)** 675246 / *MQ-9 Development and Fielding*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MQ-9 System Development and Demonstration (SDD)	1	2013	2	2019
Ground Control Station (GCS) Development / Modernization	1	2013	2	2019
MTS-B Updates (Electro-Optic/Infrared (EO/IR) Sensor)	1	2013	4	2015
Operator Simulator	2	2014	1	2019
Synthetic Aperture Radar (SAR) enhacements	1	2013	4	2016
Test Support	1	2013	4	2019
Communications	1	2013	1	2018
Counter-IED Development and Demonstration	1	2013	3	2014
Multi- aircraft Transit Operations (MTO)	1	2013	1	2016
MQ-9 Technology Insertion	2	2013	4	2016
Reliability and Maintainability	1	2013	4	2019
Extended Range (ER)	1	2013	4	2015
Urgent Services	1	2013	4	2019
Afghan Enablers Development	3	2013	1	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207040F / *Multi-Platform Electronic Warfare Equipment*

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	39.250	-	-	-	-	-	-	-	-	Continuing	Continuing
675310: *EA Pod DRFM Upgrade*	-	39.250	-	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Overall, this program element (PE) funds on-going sustainment, maintenance, and upgrade of Multi-Platform Electronic Attack (EA) jamming pods and associated combat test equipment as well as sustainment of various other Electronic Warfare equipment. Specifically, this program provides procurement, research and development, and operations and maintenance for sustaining the ALQ-131 and ALQ-184 EA jamming pods. These pods are the sole self-protection jamming systems for US Air Force A-10 aircraft and most models of the F-16 aircraft. This upgrade to the electronic attack pod is necessary to keep pace with adversary technological advances in surface-to-air and air-to-air missile systems. Digital Radio Frequency Memory (DRFM) allows an electronic system to digitally record and store characteristics of received signals in order to produce a jamming pulse that more precisely replicates the threat systems pulse. With the current/near term threat systems the A-10 and F-16 are likely to encounter, this level of fidelity is necessary to effectively protect these aircraft in this increasingly lethal environment.

This PE is in Budget Activity 7 - Operational System Development because it supports upgrade development of the A-10 and F-16 EA pods which are fielded systems.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	49.848	-	-	-	-
Current President's Budget	39.250	-	-	-	-
Total Adjustments	-10.598	-	-	-	-
• Congressional General Reductions	-0.066	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.822	-			
• SBIR/STTR Transfer	-1.249	-			
• Other Adjustments	-4.461	-	-	-	-

Change Summary Explanation

Reduction of $4.461M in FY13 due to sequestration.
FY 13 Reprogramming due to a reduction in the required number of test assets.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207040F / *Multi-Platform Electronic Warfare Equipment*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Pod Upgrade Program	39.250	-	-
Description: Electronic Attack Pod DRFM Upgrade SDD ***FY 2013 Accomplishments:*** Development of electronic attack pod updgrade. ***FY 2014 Plans:*** No FY14 funding requested. ***FY 2015 Plans:*** No FY15 funding requested.			
Accomplishments/Planned Programs Subtotals	39.250	-	-

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA 07: Line Item # 000075: *Other Production Charges*	-	35.442	35.667	-	35.667	41.486	42.363	43.126	43.902	-	-

Remarks

E. Acquisition Strategy

All major contracts within this project will be awarded through full and open competition.

F. Performance Metrics

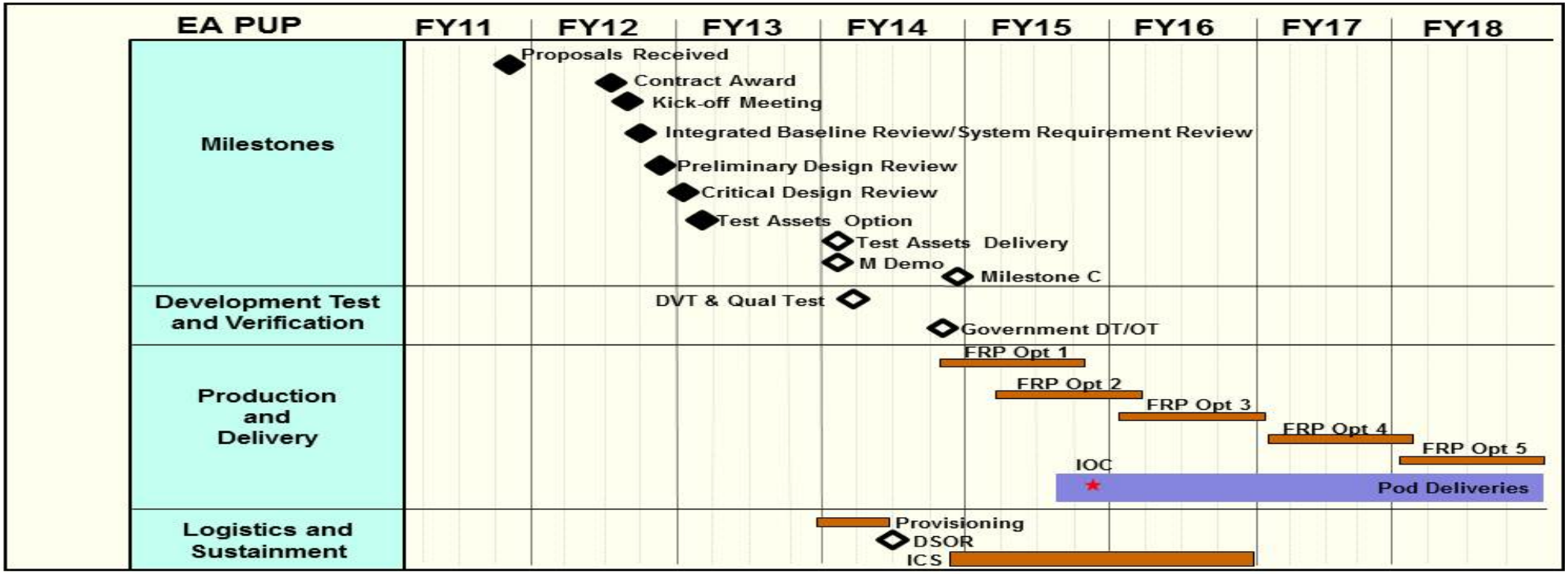
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207040F / *Multi-Platform Electronic Warfare Equipment*	**Project (Number/Name)** 675310 / *EA Pod DRFM Upgrade*

U.S. AIR FORCE

EA PUP Schedule

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207131F / *A-10 Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	12.347	9.614	-	-	-	-	-	-	-	-	21.961
674809: *A-10 Squadrons*	-	12.347	9.614	-	-	-	-	-	-	-	-	21.961
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project number 674809, was completed.

A. Mission Description and Budget Item Justification

The A-10 is a twin engine, single seat, close air support aircraft capable of delivering a full range of air-to-ground munitions as well as self-defense air-to-air missiles. The A-10 concept of operations requires a flexible, adaptable and survivable weapon system providing close-air support, combat search and rescue, and special operations capabilities. Current high operational tempo experienced by the Expeditionary Air Force requires the A-10 to perform effectively in a variety of operational roles. The A-10 must conduct around-the-clock air operations under various weather conditions against numerous enemy threats employing a full spectrum of air defense systems.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	13.538	9.614	15.400	-	15.400
Current President's Budget	12.347	9.614	-	-	-
Total Adjustments	-1.191	-	-15.400	-	-15.400
• Congressional General Reductions	-0.018	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-1.173	-	-15.400	-	-15.400

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207131F / *A-10 Squadrons*

Change Summary Explanation

FY2013 reduction of -$1.173M for Sequestration

FY2015 reduction of -$15.4M due to divesture of A-10 fleet.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: OFP Development	12.347	9.614	-
Description: A-10C OFP Suite software is updated and released to permit timely integration of new precision weapons, updated targeting pods, improved avionics, and enhanced electronic warfare capabilities. These upgraded capabilities are in response to evolving operational requirements including Urgent Operational Needs generated by the ever-changing operational environment of close air support. ***FY 2013 Accomplishments:*** Continued the development of Suite 8 including initial testing of LARSV12 and the test, evaluation, and initial integration of the Mode 5 radio Identify Friend or Foe capability into the A-10C OFP. Suite 8 schedule slipped from Sep/14 to Mar/15. A-10 FMT simulator software integration and development must be updated to remain concurrent with the aircraft's OFP software. ***FY 2014 Plans:*** Continue the development and test of Suite 8. Other tasks associated with Suite 8 include flight test both DT and OT. A-10 Full Mission Trainer (FMT) simulator software integration and development must be updated to remain concurrent with the aircraft's OFP software. Suite 8 OFP fielding was delayed from Sep 14 to Mar 15 due to unforeseen problems with the transition from contractor support to organic support. There have been further delays due to the decision to defer Suite 8 in Jan 14 and then the decision to restart Suite 8 in Feb 14. Efforts include the development of a SIL in support of the transition to organic software development. A SIL that can support the Suite 8 baseline will be developed for organic use. This SIL will consist of one Integrated Test Stand (ITS). The work continuing on the SIL will allow it to be operational by Oct 14. The work to get the SIL operational will consist of writing the COMET code to run the SIL, constructing it and writing the test procedures against it. If the SIL is not completed the OFP will not be able to correct and fix deficiencies that arise thus causing a grounding of the fleet. This SIL will have no Sub System Test (SST) stands. With no SST's, and only one ITS, this will not allow for development actions, only sustainment. ***FY 2015 Plans:*** Not Applicable			
Accomplishments/Planned Programs Subtotals	12.347	9.614	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207131F / *A-10 Squadrons*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # A01000: *A-10 Squadrons, PE 0207131F*	89.919	47.598	-	-	-	-	-	-	-	-	394.255

Remarks

E. Acquisition Strategy

Prior to FY 2009, A-10 OFP development efforts were conducted under the A-10 Prime Contract, awarded to Lockheed Martin Systems Integration in December 1997 through a full-and-open competition. Suite 8 development efforts began in FY12, with System Integration Lab(SIL)development and stand-up beginning in FY11 as A-10 OFP suites development and sustainment efforts transitioned from contractual work by Lockheed Martin to organic work by 309th Software Maintenance Group (SMXG) at Hill AFB. All additional suites beyond 8 will be performed by the 309th SMXG until directed otherwise. The A-10 FMT simulator OFP is managed by the Simulator Division at Wright-Patterson Air Force Base and is contractor developed and integrated.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207131F / *A-10 Squadrons*	**Project (Number/Name)** 674809 / *A-10 Squadrons*

U.S. AIR FORCE

A-10 3600 Schedule

RDT&E Program	FY2013				FY2014				FY2015				FY2016				FY2017				FY2018				FY2019			
	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
Operational Flight Program Suite 8/SIL	Ktr to Organic Transition								SIL ◇ Fielding	Suite 8 ◇																		

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207133F / *F-16 Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	155.152	112.667	133.105	-	133.105	162.877	130.703	116.134	115.381	Continuing	Continuing
672671: *F-16 Squadrons*	-	155.152	112.667	133.105	-	133.105	162.877	130.703	116.134	115.381	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY15, Combat Aviation Programmed Extension Suite (CAPES) is terminated.

In FY15, Modular Mission Computer (MMC)/ Display Generator Upgrade will be a new start.

A. Mission Description and Budget Item Justification

The F-16 Fighting Falcon is the world's premier multi-mission fighter. It is a fixed-wing, high performance, single-engine fighter aircraft. In its 35-year history, the F-16 has proven itself in combat in a variety of air-to-air and air-to-surface missions such as offensive and defensive counter-air, close air support, forward air control, air interdiction (day/night and all-weather) and suppression of enemy air defenses (SEAD)/destruction of enemy air defenses (DEAD). The F-16 remains the USAF's primary SEAD/DEAD platform. The aircraft has evolved in its capabilities by capitalizing upon advancements made in computers, avionics systems, engines, and structures technologies. The F-16 has been selected by more than 20 air forces around the world and foreign military sales (FMS) production continues in the 21st century. AFLCMC/WWM (the F-16 System Program Office) develops, integrates, and qualifies systems to enhance the overall performance of the F-16 mission. Enhancements that are being or will be developed during the Future Years Defense Program (FYDP) include:

a. Operational Flight Program (OFP) Development: Block 40/42/50/52 OFPs (M-series tapes) are updated continually to integrate new precision weapons, advanced targeting pods, improved avionics, and hardware (HW) and software (SW) mods to keep the F-16s, their respective training simulators, and other hardware Group B subsystems current. To keep this legacy platform combat capable, OFPs are designed for release on a three-year cycle. Generally, three major or minor tapes are under development/testing at any one time. Extensive ground and flight testing is required to field each M-series tape. Advanced weapons integration includes Joint Air-to-Surface Stand-off Missile (JASSM) and Joint Direct Attack Munitions (JDAM, Laser JDAM), Small Diameter Bomb (SDB and SDB II), Advanced Medium Range Air-to-Air Missile (AMRAAM) AIM-120D, Sidewinder (AIM-9X/AIM-9X Block II), and updates to existing weapons. Weapons integration also includes tasks such as performing risk reduction activities on advanced weapon integration, developing and integrating advanced racks, pylons, adapters, and the universal armament interface (UAI), and ensuring continued nuclear surety, safety and compatibility with upgrades such as the integration of the B61-12. Updates to electronic warfare systems allow for incorporation of the latest updates for changing threat environment, reducing war-fighter vulnerabilities. Multifunctional Information Distribution System (MIDS) HW block upgrades provides the F-16s with a secure, jam resistant, high-capacity data communications link with other combat aircraft, airborne control aircraft, and ground control centers. The new major capabilities currently being integrated via M6.5/M7+ include GPS inertial navigation set (GPS/INS) updates to improve targeting accuracy and GPS security, AIM-120D, joint mission planning system (JMPS). As part of the Source of Repair Assignment Process (SORAP) decision, the OFP development has transitioned from Lockheed Martin Aeronautics (LM Aero) to Ogden Air Logistics Complex (OO-ALC), 309th Software Maintenance Group (309 SMXG). LM Aero will

produce the common USAF/European Participating Air Forces (EPAF) core software tape for USAF M6.5+ that will serve as the baseline for the USAF M7+ OFP. The 309 SMXG has software development responsibility for the M7+ SW/HW candidates for the USAF jets fielding in FY16. M7.2+ Minor Tape is currently in early stages of program planning, candidate definition and test HW procurement to incorporate DoD mandates such as Airborne Dependent Surveillance Broadcast (ADS B-Out) as well as other Combat Air Forces (CAF) candidates including color display and Advanced Defensive Electronic Warfare (EW) System coordination. M8+ is in early stages of program planning for incorporating Modular Mission Computer (MMC) architecture.

b. F-16 Block 40-52 Legacy Service Life Extension Program (SLEP): A two-phased RDT&E effort which includes Full Scale Durability Test (FSDT) and Engineering, Manufacturing and Development (EMD) to support structural modifications to Block 40/42/50/52 F-16 aircraft to increase service life. FSDT required preliminary structural analysis, construction of a test fixture, and modification of an aircraft to begin testing. FSDT is required to prove finite element models and to develop the airworthiness certification basis to extend the current Certified Service Life (CSL) from 8,000 Equivalent Flight Hours (EFH) to 10,000 EFH (Threshold), or 12,000 EFH (Objective). In accordance with the Aircraft Structural Integrity Program and MIL-STD 1530C, testing will support Blk 40/42/50/52 structural upgrade program that replaces or reworks known life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 hours. EMD is required to develop the engineering solutions necessary to resolve the life-limiting structural issues defined in FSDT and develop the airworthiness certification recommendation. The Government will receive a re-procurement technical data package to support production of kits and installs, maintenance Technical Orders, Time Compliance Technical Orders, manufacturing and installation tools, and all drawing packages necessary to sustain the SLEP modified aircraft through the extended certified service life.

c. Auto Ground Collision Avoidance System (Auto GCAS): Builds upon the Air Force Research Laboratory's (AFRL) fighter risk reduction program (FRRP) demonstrated capability and results in the Auto GCAS capability being production ready for incorporation in the M6.2+ OFP (Minor Tape) fielding in FY14 with potential for nearly eliminating controlled flight into terrain (CFIT) accidents, a leading cause of F-16 loss of pilots and aircraft.

d. EMD Hardware/Advanced Capability Improvements: EMD HW provides funding to develop, test, and qualify, weapon systems, aircraft subsystems replaced or modified due to requirements changes, pre-planned product improvements (P3I), diminishing manufacturing sources (DMS) and parts obsolescence. The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, multiplex architecture, MMC advanced hi-speed digital data communication and throughput and memory upgrades within the aircraft systems. Updates are periodically made to improve performance of subsystems such as embedded GPS inertial navigation set (EGI), air-to-air interrogator (AAI), digital video recorder, advanced data transfer equipment (ADTE) and related data transfer and retrieval devices, displays and display generators, radio/communication gear, and data link improvements. Advanced capability improvements include software integration, sensor upgrades, radar updates and other self-protection/electronic protection (EP) enhancements, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/capability improvements. These capability improvements also include integration of targeting pod updates and tech order changes e.g., SNIPER targeting pod, High-Speed Anti-Radiation Missile (HARM) targeting system (HTS), low altitude infrared targeting and navigation LITENING tageting pod, etc. Advanced capabilities also include integration of new replacement hardware for DMS crash survivable data recorder.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
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e. Modular Mission Computer (MMC) / Display Generator Upgrade: The MMC upgrade resolves short falls in mission computer memory and throughput brought on by the addition of incremental combat capability over the last three OFP cycles. Funding includes non-recurring engineering (NRE), design, development, integration, and ground/flight test for fielding with the M8+ OFP. The addition of an Ethernet port facilitates future increments of combat capability (e.g., digital targeting pod video). The Display Generator Upgrade allows a fully integrated Multi-Function Display System (MFDS) solution including Hands On Throttle and Stick (HOTAS) integration with Sensors of Interest (SOI), format swapping and high definition video on 4"x4" displays; provides improved display formats during dynamic maneuvers; resolves symbol freezing issues due to throughput constraints; and provides a sustainable approach to address growing DMS concerns with the current Programmable Display Processor (PDG).

f. F-16 Training Simulators: The F-16 simulators enable the USAF to exercise and train using the latest available F-16 Fighting Falcon capabilities available to all block configurations, while reducing the overall cost of training the Armed Forces, to include both aircrew and maintenance trainers. In order to maintain concurrency with the aircraft OFP, this funding supports development, test, and integration of simulator upgrade efforts, such as OFP development. Reductions in unit flying hour programs through the FYDP increase the need for high fidelity combat crew training devices that are capable of simulating the full range of anticipated combat and combat support missions.

g. The JASSM-ER (Extended Range): This capability integrates JASSM-ER on F-16 Blk 40/42/50/52 aircraft, and includes NRE, test assets, SEEK EAGLE, integration, and test. This capability will be fielded in conjunction with a future OFP delivery.

This program is in Budget Activity 7, Operational System Development because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	190.257	177.298	228.263	-	228.263
Current President's Budget	155.152	112.667	133.105	-	133.105
Total Adjustments	-35.105	-64.631	-95.158	-	-95.158
• Congressional General Reductions	-0.234	-			
• Congressional Directed Reductions	-13.500	-64.631			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.000	-			
• SBIR/STTR Transfer	-3.795	-			
• Other Adjustments	-13.576	-	-95.158	-	-95.158

Change Summary Explanation

FY13: Reduction of -$35.105M due to Congressional Reduction of -$13.500M, SBIR of -$3.795M, reprogrammings of -$4M and sequestration of -$13.576M

FY14: Reduction of -$64.631M due to Congressional Reduction and program decreases.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
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FY15: Reduction of -$95.158M due to CAPES termination and program decreases.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: OFP Updates Blk 40-52 OFP	64.362	74.786	64.210
Description: OFP M-tapes are updated continually to integrate new weapons, targeting pods, improved avionics. M6.2+ has entered development test and evaluation (DTE) and is scheduled to field in CY 2014. M6.5+/M7+ is in Phase III development with M6.5+ common candidates to include Universal Armament Interface (UAI) updates and Embedded GPS inertial (EGI) updates and M7+ candidates to include AIM 9X Block II. The USAF M6.5+ OFP is not intended to field but will be the baseline for the OO-ALC developed M7+ which will field in FY16. M7.2+ Minor Tape is in early stages for planning and candidate definition to incorporate DoD mandates. M8+ is in early stages for planning on incorporating MMC upgrade architecture and Display Generator Upgrade.			
FY 2013 Accomplishments: Continued OFP software design and began integration and DTE efforts for M6.2+ Minor tape which incorporates Auto GCAS as well as new FAA SW requirement that will allow Mode 5 to field as part of the M6.2+ Minor Tape. M6.5+ merges with M7+ as part of Phase III risk reduction. Began M7.2+ assessment for incorporating Civil DoD mandates and ACC candidates for color display and Advanced Defensive electronic warfare (EW) System coordination. Began M8+ SW candidate assessment to include MMC upgrade architecture.			
FY 2014 Plans: Finalize DT/OT testing and field M6.2+ Minor Tape in 3Q2014 which incorporates Auto GCAS as well as new FAA SW requirement that will allow Mode 5 to field. M7+ OFP baseline will incorporate all M6.5+ candidates as part of final design, code and unit test and enters into Software Integration Lab (SIL) testing. Phase 0/I efforts continue for M8+ SW candidates including MMC upgrade architecture and Display Generator upgrade, M7.2+ early assessment for planning and candidate definition of DoD mandates and CAF candidates for color display and advanced Defensive EW Systems.			
FY 2015 Plans: M7+ OFP baseline development at OO-ALC will incorporate all M6.5+ candidates as part of final design, code and unit test and enters into SIL testing. Continue Phase 0/I efforts for M8+ SW candidates including MMC Upgrade architecture and Display Generator Upgrade, start detail design, code efforts and procure test assets for M7.2+ Minor Tape to incorporate DoD mandates as well as CAF candidates for color display and Advanced Defensive EW Systems.			
Title: Flight Test	21.376	14.211	24.201
Description: F-16 Baseline Flight Test funds F-16 test and evaluation at the Combined Test Facility (CTF) at Edwards AFB and Developmental Test/Operational Test (DT/OT) Test facility at Eglin AFB including integration test of associated subsystems and			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
weapons as well as maintain test schedule for F-16 Block 40-52 MMC OFPs, weapons integration, and sub-systems to ensure capabilities meet CAF's fielding schedule. ***FY 2013 Accomplishments:*** FY13 funding supported CTF infrastructure (Government and Contractor) and DT flight DTE sorties for M6.2+ Minor Tape OFP as well as M7+ design try-out (DTO) testing. ***FY 2014 Plans:*** FY14 funding supports CTF infrastructure (Government and Contractor). M6.2+ Minor Tape OFP completes force development evaluation (FDE) as well as M7+ DTO testing. ***FY 2015 Plans:*** FY15 funding supports CTF infrastructure (Government and Contractor). Start M7+ DTE testing. Initiate test planning for M7.2+ DTO risk reduction testing.			
Title: Combat Avionics Programmed Extension Suite (CAPES) ***Description:*** F-16 Blk 40-52 CAPES: The CAPES effort has been terminated as part of the FY15 budget cycle for higher AF priorities. This avionics modernization program would keep the F-16 Blk 40-52 aircraft viable in the threat environment beyond 2025. It includes but is not limited to an AESA radar that offers improved destruction of enemy air defenses (DEAD), and advanced electronic protection capabilities as well as improved reliability and maintainability; CDU, which replaces existing flight instrument cluster with large higher resolution color multi-function display; EW updates (ALQ-213 Electronic Warfare Management System), which provides a single-point access for automated or hands-on EW system control; and IBS that integrates multiple intelligence broadcasts into a system of systems and migrates tactical receive terminals into a single related JTT family. ***FY 2013 Accomplishments:*** CAPES AESA UCA was awarded as part of the Radar Modernization Program (RMP), AESA vendor selection occurred 4QFY13, test assets were procured and Radar NRE began toward a preliminary system design to meet common requirements in the co-development of the AESA radars with the Taiwan Air Force. ***FY 2014 Plans:*** Not Applicable ***FY 2015 Plans:*** Not Applicable	58.867	-	-
Title: Legacy Service Life Extension Program (SLEP) Structures	8.064	15.200	16.202

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015

Description: F-16 Blk 40-52 Legacy Service Life Extension Program (SLEP): A two-phased RDT&E effort which includes Full Scale Durability Test (FSDT), and Engineering, Manufacturing and Development (EMD). FSDT required preliminary structural analysis, construction of a test fixture, and modification of an aircraft to begin testing. The FSDT contract awarded Apr 11 and aircraft cycle testing began Dec 12. FSDT is required to prove finite element models and to develop the airworthiness certification basis to extend the current Certified Service Life (CSL) from 8,000 Equivalent Flight Hours (EFH) to 10,000 EFH (Threshold), or 12,000 EFH (Objective). In accordance with the Aircraft Structural Integrity Program and MIL-STD 1530C, testing will support Blk 40-52 structural upgrade program that replaces or reworks known life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 hours. FSDT is projected to complete cycle testing in Nov 14, with final recommendation in Nov 15. The Government will receive a re-procurement technical data package to support production and installs, maintenance Technical Orders, Time Compliance Technical Orders, manufacturing and installation tools, and all drawing packages necessary to sustain the SLEP modified aircraft through the extended certified service life. Production contract is planned to award in FY17, with FRP in FY19.

FY 2013 Accomplishments:
FSDT completed first life cycle testing and two major scheduled repairs on test aircraft. Airframe damage analysis continued throughout cycle testing. Critical repairs are designed and installed for wings, lower FS341 bulkhead,longerons, carry-through bulkheads, and closure beam assembly. Began organic design and developed tooling and repair of FS462 bulkhead. Pre-EMD contract awarded Nov 13 with a 45 month period of performance to develop the engineering solutions necessary to resolve life-limiting structural issues defined during FSDT and develop the airworthiness certification recommendation.

FY 2014 Plans:
SLEP team organically tests and qualifies tooling and repair of FS462 bulkhead. FSDT completes last major repair (replace FS479 bulkhead and install FS462 bulkhead repair) and second life testing, which concludes the cycle test program. Pre-EMD completes System Requirements Review (SRR), and Preliminary Design Review 1 (PDR 1) to extend the current certified service life of 8,000 EFH to 10,000+ EFH. Key Pre-EMD activities begin in 2014, such as: repair and tool design engineering, kit definition, and source data development for TO, TCTO, and kit proof planning. In accordance with the Aircraft Structural Integrity Program and MIL-STD-1530C, testing will support Blk 40/50 structural upgrade program that replaces or reworks known life-limited structure to preclude the onset of widespread fatigue damage, maintain safety of flight and enhance aircraft availability beyond 8,000 hours.

FY 2015 Plans:
FSDT concludes with the completion of aircraft teardown, inspection, final report and recommendation. Pre-EMD risk reduction activities conclude and final requirements defined with completion of PDR 2 and Critical Design Review 1 (CDR 1). Milestone B approval is planned in spring 2015, followed by final CDR. EMD activities continue and begin to finalize engineering designs of

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
kits and tooling, TO and TCTOs, and procurement of long-lead items to support Kit Proof in 2016. Completion allows for release of preliminary Technical Data Package to support initial production acquisition activities and release of a draft Request for Proposal.			
Title: EMD HW/Advanced Capabilities Improvements	0.500	0.470	0.500
Description: EMD HW/advanced capability improvements: EMD HW provides funding to develop, test, and qualify aircraft weapons systems including F-16 subsystems replaced or modified due to requirements changes, P3I and DMS and parts obsolescence. The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, MUX architecture, MMC throughput memory upgrades, high speed data communications within the aircraft systems, embedded GPS/INS updates, Blk 40 AAI, digital video recorder, ADTE and related data transfer devices and interfaces, display upgrades, radio/communication studies, and CAS data link. Advanced capability improvements include software integration, sensor upgrades, color display upgrades, radar updates and other self-protection/EP enhancements, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/ capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods (SNIPER, HTS, LITENING) including updates and tech order changes. Also includes integration of new replacement DMS hardware for a crash survivable data recorder. ***FY 2013 Accomplishments:*** EMD HW/advanced capability improvements: EMD HW funded to develop, test, and qualify aircraft weapons systems including F-16 subsystems replaced or modified due to requirements changes, P3I and DMS and parts obsolescence. The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, MUX architecture, MMC throughput memory upgrades, advanced hi-speed digital avionics data communications within the aircraft systems, embedded GPS/INS updates, Blk 40 AAI, digital video recorder, ADTE and related data transfer devices and interfaces, display upgrades, radio/communication studies, and CAS data link. Advanced capability improvements included software integration, sensor upgrades, color display upgrades, radar updates and other self-protection/EP enhancements, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also funded integration of pods (SNIPER, HTS, LITENING) including updates and tech order changes. Also included integration of new replacement DMS hardware for a crash survivable data recorder. ***FY 2014 Plans:*** EMD HW/advanced capability improvements: EMD HW provides funding to develop, test, and qualify aircraft weapons systems including F-16 subsystems replaced or modified due to requirements changes, P3I and DMS and parts obsolescence. The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, MUX architecture, MMC throughput memory upgrades, advanced hi-speed digital avionics data			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
communications within the aircraft systems, embedded GPS/INS updates, Blk 40 AAI, digital video recorder, ADTE and related data transfer devices and interfaces, display upgrades, radio/communication studies, and CAS data link. Advanced capability improvements include software integration, sensor upgrades, color display upgrades, radar updates and other self-protection/EP enhancements, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/ capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods (SNIPER, HTS, LITENING) including updates and tech order changes. Also includes integration of new replacement DMS hardware for a crash survivable data recorder. ***FY 2015 Plans:*** EMD HW/advanced capability improvements: EMD HW provides funding to develop, test, and qualify aircraft weapons systems including F-16 subsystems replaced or modified due to requirements changes, P3I and DMS and parts obsolescence. The approach to contracting varies by individual project. These hardware improvements include but are not limited to flight systems, improved navigation, MUX architecture, MMC throughput memory upgrades, advanced hi-speed digital avionics data communications within the aircraft systems, embedded GPS/INS updates, Blk 40 AAI, digital video recorder, ADTE and related data transfer devices and interfaces, display upgrades, radio/communication studies, and CAS data link. Advanced capability improvements include software integration, sensor upgrades, color display upgrades, radar updates and other self-protection/EP enhancements, 4th/5th gen fighter network communications, lab and/or on-aircraft evaluation of potential subsystem changes/ capability improvements on the F-16 as well as establishment of associated requirement specification changes. These capability improvements also fund integration of pods (SNIPER, HTS, LITENING) including updates and tech order changes. Also includes integration of new replacement DMS hardware for a crash survivable data recorder.			
Title: Auto Ground Collision Avoidance System (Auto GCAS) ***Description:*** This program will nearly eliminate CFIT accidents, a leading cause of F-16 loss of pilots and aircraft. One study predicted this capability could have saved 10 pilots and 15 aircraft lost from CFIT accidents had it been available. In Mar 08, the Combat Air Force Requirements Oversight Council (CAFROC) directed development of Auto GCAS for F-16 Blk 40-52 aircraft. Production configurations of the remaining software items will be incorporated during the M6.2+ effort that will field in FY14, which will enable the Auto GCAS function. ***FY 2013 Accomplishments:*** Integration and DT&E testing for Auto GCAS to incorporate it into the M6.2+ OFP (Minor Tape) scheduled to field in FY 2014 and finished updating support equipment software to accommodate Auto GCAS testing and fielding.	1.983	-	-
Title: MMC Upgrade / Display Generator Upgrade, FY15 New Start ***Description:*** The MMC upgrade resolves short falls in mission computer memory and throughput brought about by the addition of incremental combat capability over the last three OFP cycles. Funding includes NRE, design, development, integration, and	-	-	19.992

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
ground/flight test for fielding with the M8+ OFP. The addition of an Ethernet port facilitates future increments of combat capability with the OFP (e.g., digital targeting pod video). Display Generator Upgrade allows a fully integrated MFDS solution including HOTAS integration with Sensor of Interest (SOI), format swapping and high definition video on 4x4 displays; provides improved display formats during dynamic maneuvers; resolves symbol freezing issues due to throughput constraints; and provides a sustainable approach to address growing DMS concerns with the current PDG. ***FY 2015 Plans:*** Initiate contract for NRE, MMC and Display Generator Upgrade asset procurement, design, development, integration, and ground/flight test for fielding with the M8+ OFP.			
Title: JASSM-ER ***Description:*** The JASSM-ER capability integrates JASSM-ER on F-16 Blk 40/42/50/52 aircraft, including NRE, SEEK EAGLE, test assets, integration, and flight test. This capability will be fielded in conjunction with a future OFP delivery. ***FY 2014 Plans:*** Begin NRE contract efforts for procurement of SEEK EAGLE test assets and integration on F-16 Blk 40/42/50/52 aircraft. ***FY 2015 Plans:*** Continue NRE development efforts for integration of JASSM-ER capability on F-16 Blk 40/42/50/52 aircraft.	-	8.000	8.000
Accomplishments/Planned Programs Subtotals	155.152	112.667	133.105

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # F01600: *Modifications, PE 0207133F*	6.887	9.334	12.336	-	12.336	17.248	30.578	114.260	127.421	Continuing	Continuing
• APAF: BA07: Line Item # F01600: *Post Production Support,PE 0207133F*	5.898	3.238	10.994	-	10.994	15.144	15.425	15.717	16.052	Continuing	Continuing

Remarks

E. Acquisition Strategy

RDT&E funds will primarily be executed in developing improved capability, maintenance and safety mods. OFP software will be continuously updated to complement modification development and bring new capabilities to the user. M6.2+ is scheduled to field in FY14 with Auto GCAS, M7+ currently being developed at OO-ALC,

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207133F / *F-16 Squadrons*

M7.2+ minor tape is currently in early stages of program planning and candidate definition to incorporate DoD mandates as well as other CAF candidates for color display and Advanced Defensive EW System coordination, M8+ is in early stages of program planning for incorporating MMC Upgrade architecture and Display Generator Upgrade.

The F-16 Blk 40-52 Legacy SLEP program will keep the F-16 aircraft viable by extending the aircraft service life beyond 2025. Legacy SLEP EMD is required to develop the engineering solutions necessary to resolve the life-limiting structural issues defined in FSDT and develop the airworthiness certification recommendation.

The CAPES effort will be terminated as part of the FY15 budget cycle for higher AF priorities.

The EMD hardware development line provides funding to develop, test, and qualify aircraft subsystems upgrades, communication upgrades, parts obsolescence and DMS. The approach to contracting varies by individual project. LM Aero is the prime contractor on all systems except the General Electric/Pratt & Whitney engines.

Contract types are Time and Material (T&M), Cost Plus Incentive Fee (CPIF), Cost Plus Fixed Fee (CPFF) and Firm Fixed Price (FFP).

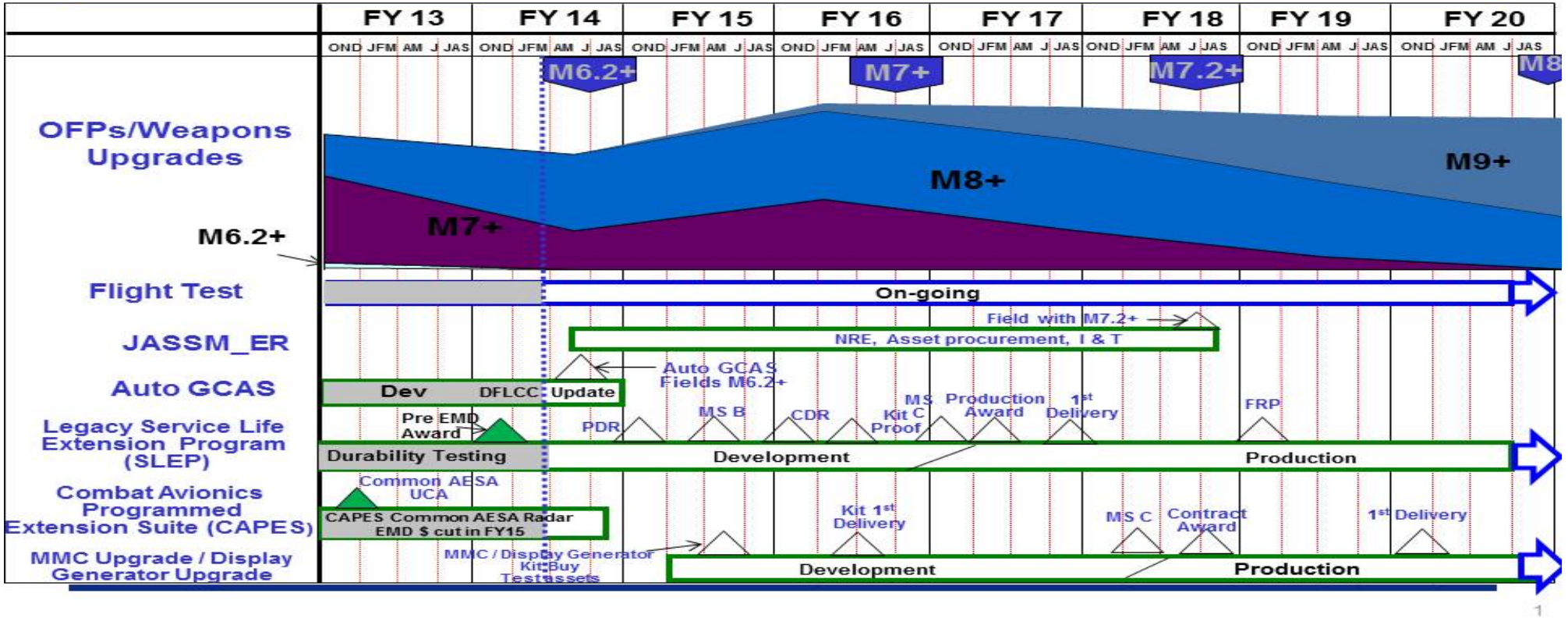
F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207133F / *F-16 Squadrons*	**Project (Number/Name)** 672671 / *F-16 Squadrons*

F-16 Program Schedule – USAF FY15 PB (R-4 Exhibit)

U.S. AIR FORCE



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207134F / *F-15E Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	145.035	234.289	261.969	-	261.969	250.362	338.682	274.913	415.626	Continuing	Continuing
670131: *Initial Operational Test and Evaluation*	0.000	42.078	64.975	84.350	-	84.350	50.468	109.800	42.817	189.903	144.500	728.891
676020: *F-15*	0.000	102.957	169.314	177.619	-	177.619	199.894	228.882	232.096	225.723	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Infrared Search and Track (IRST) is a new start.

In FY 2015, PE 0207134F Project 670131 Initial Operation Test and Evaluation, EPAWSS efforts were transferred to PE 0207171F Project 676038 EPAWSS.

A. Mission Description and Budget Item Justification

The F-15 is the most versatile fighter in the world today. The F-15C/D continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night/under-the-weather, air-to-surface attack. Configured with conformal fuel tanks (CFTs), the F-15E deploys worldwide with minimal tanker support and arrives combat-ready. A mainstay in operations both domestic and abroad, upgrades to the F-15 (avionics, armament, airframe, and engines) are critical to maintaining combat viability (lethality, survivability, and supportability). Projected to remain in service past 2035, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical and acquisition support studies (both internal to the Air Force and through outside contractors), forestalling obsolescence, exploiting proven technological advances, and leveraging new technology. Major avionics upgrades center around radar modernization (both hardware and software upgrades) and the exploitation of enhanced capability via precision timing, data delivery and processing technology, precision registration systems, cockpit Head Up Display (HUD), instrumentation digitization and modernization, central computer processing power increases, digital mission event recording systems and an infrared (IR) based fire control system. Funds are also used, as required, to resolve Diminishing Manufacturing Sources and Material Shortage (DMSMS) issues. The proliferation of fourth generation enemy aircraft and sophisticated "double-digit" anti-aircraft missile systems pose a significant threat to F-15 survivability. A fully integrated electronic warfare suite holds the promise of providing survivability as well as expanded electronic attack capability. Nearly all improvements are linked to an aircraft operational flight program update schedule that works to integrate new capabilities with the airframe. These updates are a responsive way to increase the offensive and defensive capability and survivability of the F-15. Incorporation of corresponding spiral and/or phased technology/ equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability, and aircrew training.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force					Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*		**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*			
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	192.677	244.289	426.331	-	426.331
Current President's Budget	145.035	234.289	261.969	-	261.969
Total Adjustments	-47.642	-10.000	-164.362	-	-164.362
• Congressional General Reductions	-0.227	-			
• Congressional Directed Reductions	-21.000	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-10.000	-			
• SBIR/STTR Transfer	-4.897	-			
• Other Adjustments	-11.518	-	-164.362	-	-164.362

Change Summary Explanation

FY2013: Funding decreased -$11.518M for Sequestration and -$10M for higher Air Force priorities,-$21M for Congressional Mark for Forward financing, and -$4.897M for SBIR.

FY2014: Funding decreased -$10M for Congressional Mark for contract delays.

FY2015: Funding decreases for the Eagle Passive/Active Warning Suvivability System (EPAWSS), the Advanced Display Core Processor (ADCP) II, and higher Air Force priorities

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207134F / *F-15E Squadrons*	Project (Number/Name) 670131 / *Initial Operational Test and Evaluation*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
670131: *Initial Operational Test and Evaluation*	-	42.078	64.975	84.350	-	84.350	50.468	109.800	42.817	189.903	144.500	728.891
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

Operational Flight Program (OFP) Development efforts and Flight test have been moved to BPAC 676020
For FY 13 & FY 14 EPAWSS is under PEC 0207134F and BPAC 670131. For FY 15 forward EPAWSS is under PEC 0207171F and BPAC 676038

A. Mission Description and Budget Item Justification

This includes development of the F-15E APG-82(V)1 Active Electronically Scanned Array (AESA) radar, the F-15C/D and F-15E Advanced Display Core Processor (ADCP) II and the F-15C/D and F-15E Eagle Passive/Active Warning Survivability System (EPAWSS) (FY13 and FY14 EPAWSS funds only in PEC 0207134F).

The APG-82(V)1 will supply the F-15E with a digital radar that will provide improved range and resolution, as well as a significant improvement in reliability. This AESA radar has the ability to provide electronic attack and protection capabilities.

The ADCP II will develop a common mission computer for the F-15C/D and F-15E. The current mission computers of both platforms have reached their limits of speed, memory and throughput. Additionally, digital systems have changed the security requirements of both platforms and the older mission computers cannot be upgraded to meet these new requirements. A common mission computer is expected to reduce overall development costs as well as long term maintenance costs. The program will also develop a new F-15C/D cockpit display to replace an obsolete one.

EPAWSS will replace the obsolete Tactical Electronic Warfare System (TEWS), which will help the aircraft survive in high threat environments.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: F-15E Radar Modernization Program (RMP) APG-82(V)1	4.767	-	-
Description: New digital AESA radar replacing legacy analog APG-70 radars on all F-15E aircraft. This includes technical and acquisition related studies.			
FY 2013 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 670131 / *Initial Operational Test and Evaluation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Completed DT&E and IOT&E. Upgrade trainers. Completed EMD phase of program ***FY 2014 Plans:*** Not Applicable			
Title: Eagle Passive/Active Warning Survivability System (EPAWSS) ***Description:*** EPAWSS for FY 13 & FY 14 is under this PEC and BPAC. For FY 15 PB EPAWSS is under PEC 27171F, BPAC 676038. Planned replacement of the existing F-15 self-protection, Tactical Electronic Warfare System (TEWS). This includes technical and acquisition related studies. ***FY 2013 Accomplishments:*** Evaluated EPAWSS integration requirements and interface characteristics. Early acquisition planning, security planning and specification development. Technical and acquisition related studies. ***FY 2014 Plans:*** Continue evaluating EPAWSS integration requirements and interface characteristics, conducting security planning and developing system specifications. Develop and release Request for Proposal for Pre-EMD design contract. Continue acquisition planning for EMD and Milestone B. Technical and acquisition related studies. ***FY 2015 Plans:*** Not Applicable	4.677	10.000	-
Title: Advanced Display Core Processor (ADCP) II (formerly known as Computer Processor Modernization Program and Advanced Display Core Processor Plus w/Vertical Situation Display. FY12 combined programs) ***Description:*** New central computer for both F-15E and F-15C/D modernization. Program provides a central computer upgrade for 219 F-15Es to replace ADCP. F-15C/D provides 175 modern computers and a high resolution color display to replace the current F-15C/D Vertical Situation Display (VSD). This includes technical and acquisition related studies. ***FY 2013 Accomplishments:*** Critical Design Review (CDR). Initial hardware build. OFP Suite 8E rehost for F-15 C/D. Software development and testing on prototype hardware. Vertical Situation Display Replacement (VSDR) design and integration. ***FY 2014 Plans:***	32.634	54.975	84.350

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 670131 / *Initial Operational Test and Evaluation*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Conduct EMD activities. Initial EMD ADCP II units. Complete initial Common OFP (Suite 8E rehost for F-15 C/D). Software development and testing on EMD hardware. Begin system stability and endurance testing. Finalize installation TCTO for flight test. Flight Test Readiness Review for Operational Assessment. ***FY 2015 Plans:*** Complete software and hardware testing. Conduct combined DT/OT flight testing on F-15E aircraft. Flight test readiness review for F-15C flight test. Begin Low-Rate Initial Production. Delivery of VSDR EMD units.			
Accomplishments/Planned Programs Subtotals	42.078	64.975	84.350

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # F01500: *Aircraft Modification: F-15: PEs 0207130/0207134/0207445/0809731*	190.163	346.624	387.314	-	387.314	644.336	476.060	489.257	530.457	Continuing	Continuing
• APAF: BA07: Line Item # 000071: *Aircraft Replacement Support Equip (BP12)*	3.051	-	-	-	-	-	-	-	-	Continuing	Continuing
• APAF: BA07: Line Item # F0150P: *F-15 Post Production Support*	2.360	2.403	1.122	-	1.122	3.253	3.039	2.583	2.613	Continuing	Continuing
• APAF: BA06: Line Item # 000999: *Initial Spares/Repair Parts (BP16)*	21.074	20.813	24.785	-	24.785	61.961	58.263	37.805	38.512	Continuing	Continuing

Remarks

D. Acquisition Strategy

Program is a continuation of effort which includes the development for all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test. Acquisition and management strategies for each program are independently developed and use a variety of contract methods and types to accomplish program objectives.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 670131 / *Initial Operational Test and Evaluation*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
F-15E RMP EMD Contract	SS/CPAF	Boeing : St Louis, MO	0.000	2.801	Dec 2013	-		-		-		-	-	2.801	-
F-15E RMP	Various	Various : Various,	0.000	1.966	Dec 2013	-		-		-		-	-	1.966	-
F-15 ADCP II Contract	SS/CPFF	Boeing : St Louis, MO	0.000	16.582	Nov 2013	48.240	Nov 2013	57.900	Nov 2014	-		57.900	38.100	160.822	-
F-15 ADCP II	Various	Various : Various,	0.000	14.882	Dec 2013	5.815	Mar 2014	24.815	Mar 2015	-		24.815	14.200	59.712	-
F-15 EPAWSS (Pre-MDAP)	TBD	TBD : TBD,	0.000	4.677	Apr 2013	10.000	Jan 2014	-		-		-	485.188	499.865	-
		Subtotal	0.000	40.908		64.055		82.715		-		82.715	537.488	725.166	-

Remarks

The individual program reference to "various" contract methods addresses other government costs for trainers, test, hardware, special studies, telemetry kits, etc. that are required to meet each program's objectives. The execution vehicles between these DoD entities vary by effort.

FY13PB - Project 670131 includes APG-82(V)1, ADCP II and EPAWSS only. All other programs funded under Project 676020.

FY14PB - Project 670131 includes APG-82(V)1, ADCP II and EPAWSS only. All other programs funded under Project 676020.

FY15PB - Project 670131 includes APG-82(V)1 and ADCP II only. EPAWSS is now under PEC 27171F, Project 676038.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 670131 / *Initial Operational Test and Evaluation*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support Costs	Various	Various : Various,	0.000	1.170	Sep 2013	0.920	Sep 2014	1.635	Sep 2015	-		1.635	-	3.725	-
		Subtotal	0.000	1.170		0.920		1.635		-		1.635	-	3.725	-

Remarks

The individual program reference to "various" contract methods addresses other government costs for trainers, test, hardware, special studies, telemetry kits, etc. that are required to meet each program's objectives. The execution vehicles between these DoD entities vary by effort.

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	42.078		64.975		84.350		-		84.350	537.488	728.891	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 670131 / *Initial Operational Test and Evaluation*

Modifications – BPAC 670131

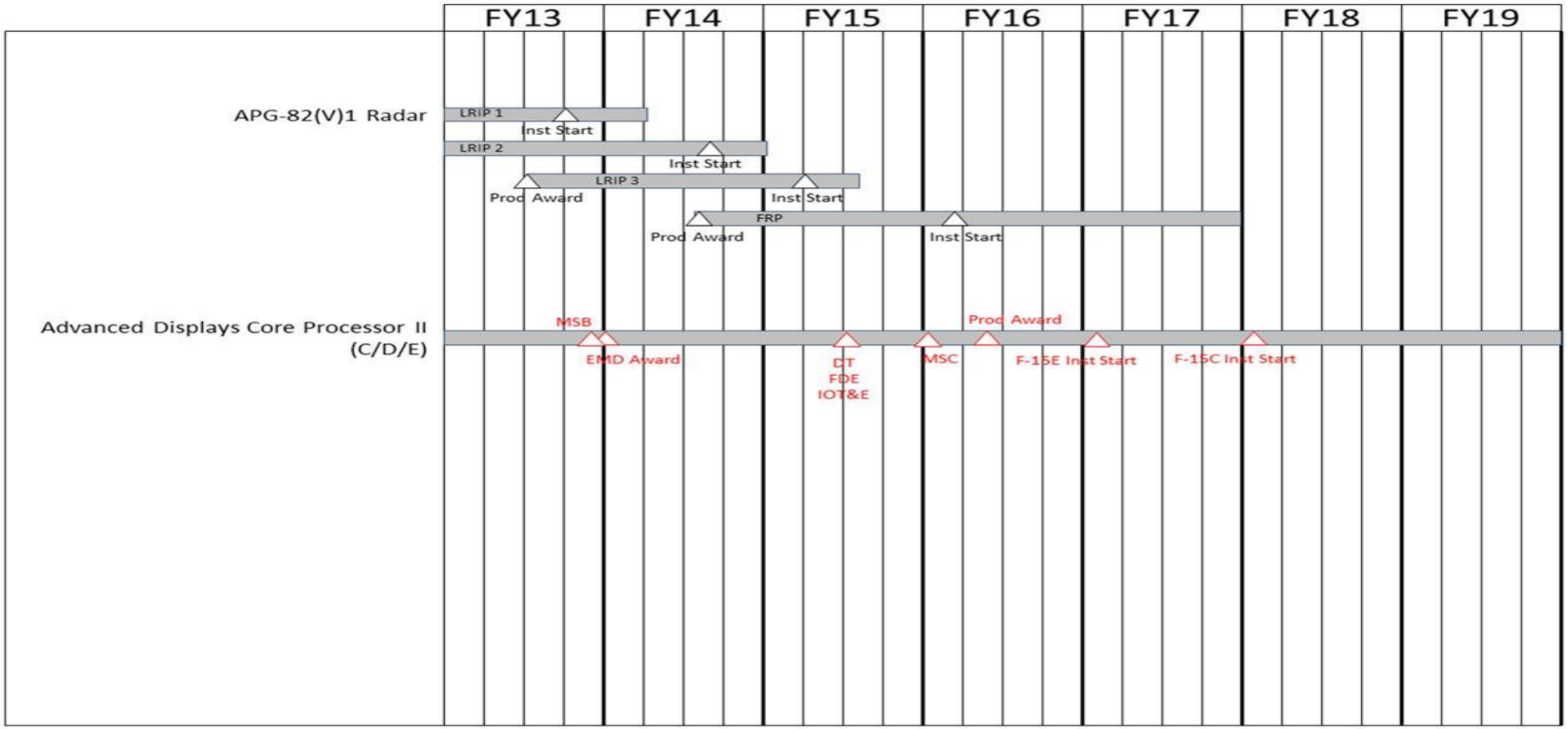


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 670131 / *Initial Operational Test and Evaluation*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-15E APG-82A(V)1 RMP EMD-Complete	1	2013	4	2013
F-15E APG-82(V)1 RMP LRIP 2	1	2013	4	2014
F-15E APG-82(V)1 RMP LRIP 3	3	2013	3	2015
ADCP II EMD	1	2014	3	2016
ADCP II MS C	1	2016	1	2016

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207134F / *F-15E Squadrons*	Project (Number/Name) 676020 / *F-15*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
676020: *F-15*	-	102.957	169.314	177.619	-	177.619	199.894	228.882	232.096	225.723	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This effort includes development of F-15 Electronic Protection (EP) capabilities and provides funding for Operational Flight Program (OFP) upgrades, Flight Testing and Infrared Search and Track (IRST).

EP will enhance digital Active Electronic Scanned Array (AESA) radar capabilities to counter sophisticated electronic threats. The development of F-15 EP will maximize Key System Attributes (KSA) and EP techniques for F-15E Radar Modernization Program (RMP) in Suite 8E; ensure remaining KSAs and EP techniques for F-15E RMP are included in Suite 9; ensure legacy EP for F-15C APG-63(v)3, commensurate with the APG-63(v)1 radar legacy EP capability, is included in Suite 9; and maximize additional advanced EP for F-15C APG-63(v)3 in Suite 9."

For the F-15 to maintain operational effectiveness, the program must continuously provide the platforms with improved capabilities. To accomplish this there is an on-going need to develop software upgrades and to flight test new capabilities and systems. The OFP funding line allows the Air Force to release software upgrades approximately every 3 years. At any one time the program has three OFP upgrades in work: one in requirements definition/pricing, one in code writing and test, and one in flight test and release preparation. The Flight Test funding line allows the Air Force to fund the on-going test effort.

Infrared Search and Track (IRST) system will provide air to air detection, tracking and ranging capability for F-15C/D in a radar-denied environment.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Operational Flight Program (OFP) Development Efforts	78.764	109.163	129.053
Description: Provides OFP program software and hardware updates to integrate new capabilities on all F-15 aircraft. This includes technical and acquisition related studies.			
FY 2013 Accomplishments: Completed Suite 8E (S8E) requirements definition and initiate S8E Phase 2 development. Continue Suite 7C (S7C) (otherwise known as Suite 7M) development and CDR. Integrate Alpha 2 Lite into the OFP. Continuation of organic software support and Special Projects development efforts. Trainer upgrades.			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Finish coding, conduct bench testing and begin flight testing of S8E. Complete S7C development and operational flight testing, conduct verification and validation of technical publications, prepare for delivery. Complete integration of Alpha 2 Lite and begin integration of Joint-Air-to-Surface Standoff Missile-Extended Range (JASSM-ER) Universal Armament Interface (UAI) into the OFP. Begin Phase I Suite 9 (S9) development. Continuation of organic software support and Special Projects development efforts. ***FY 2015 Plans:*** Deliver S7C to the field. Complete S8E flight testing and accomplish S8E Validation and Verification. Complete S9 requirements definition and initiate S9 Phase II development. Complete JASSM-ER UAI into the S8E. Continuation of organic software support and Special Projects development efforts. Continue funding support for all F-15 trainers. Begin integration of Sniper on the F-15C to meet critical PACOM requirements.			
Title: Flight Test ***Description:*** Flight testing of improvements initiated in prior years. Baseline infrastructure and personnel support for F-15 Developmental Test (DT) and Initial Operational Test & Evaluation (IOT&E) operations. Purchases long-lead test support assets and unique aircraft test instrumentation. This includes technical and acquisition related studies. ***FY 2013 Accomplishments:*** F-15 Flight Test Support provides prime contractor support cadre at Eglin and Nellis for DT/IOT&E support, avionics integration lab O&M, CTF O&M, and long-lead test unique equipment, i.e., program specific aircraft instrumentation, weapons instrumentation kits, weapons simulators, data reduction/handling equipment. ***FY 2014 Plans:*** F-15 Flight Test Support provides prime contractor support cadre at Eglin and Nellis for DT/IOT&E support, avionics integration lab O&M, CTF O&M, and long-lead test unique equipment; i.e., program specific aircraft instrumentation, weapons instrumentation kits, weapons simulators, data reduction/handling equipment. ***FY 2015 Plans:*** F-15 Flight Test Support provides prime contractor support cadre at Eglin and Nellis for DT/IOT&E support, avionics integration lab O&M, CTF O&M, and long-lead test unique equipment; i.e., program specific aircraft instrumentation, weapons instrumentation kits, weapons simulators, data reduction/handling equipment.	15.407	16.328	16.287
Title: F-15 Radar Enhancements ***Description:*** Improvements to F-15 Electronic Protection (EP) and other radar enhancements. This includes technical and acquisition related studies. ***FY 2013 Accomplishments:***	8.786	43.823	22.008

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
EP software development, technology maturation, and OFP risk reduction. ***FY 2014 Plans:*** Continue implementation of EP into Suite 8E. ***FY 2015 Plans:*** Continue implementation of EP into Suite 8E.			
Title: F-15 Infrared Search and Track (IRST) - FY15 New Start ***Description:*** The Infrared Search and Track (IRST) system will detect and track objects by infrared radiation. IRST will provide the F-15Cs with the capability to counter Low Observerable technology outside the RF spectrum, and will provide capability in an RF jamming environment. The IRST complements other onboard sensors by scanning a large volume of air space, fills gaps left by other sensors, and is unaffected by electronic attack, target emissions, beam aspect, or target radar cross section (RCS). This capability complements the radar to enhance survivability and lethality against air-to-air threats, provides a passive infrared sensor system that searches for and detects infrared energy, and provides the aircraft mission computer track file data on infrared targets. ***FY 2013 Accomplishments:*** Not applicable ***FY 2014 Plans:*** Not applicable ***FY 2015 Plans:*** Initiate technical and acqusition related studies. Early acquisition planning.	-	-	10.271
Accomplishments/Planned Programs Subtotals	102.957	169.314	177.619

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # F01500: *F-15 Modification of In-Service Aircraft, PEs 0207130/0207134/0207445/0809731*	190.163	346.624	387.314	-	387.314	644.336	476.060	489.257	530.457	Continuing	Continuing
• APAF: BA06: Line Item # 000999: *Initial Spares/Repair Parts (BP16)*	21.074	20.813	24.785	-	24.785	61.961	58.263	37.805	38.512	Continuing	Continuing
• APAF: BA07: Line Item # F0150P: *F-15 Post Production Support*	2.360	2.403	1.122	-	1.122	3.253	3.039	2.565	2.613	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA07: Line Item # 000071: *Aircraft Replacement Support Equip (BP12)*	3.051	-	-	-	-	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Program is a continuation of effort which includes the development of all F-15 models. Funds are executed organically in support of equipment improvement, study, analysis, and test. Acquisition and management strategies for each program are independently developed and use a variety of contract methods and types to accomplish program objectives.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207134F / *F-15E Squadrons*	**Project (Number/Name)** 676020 / *F-15*

Modifications – BPAC 676020

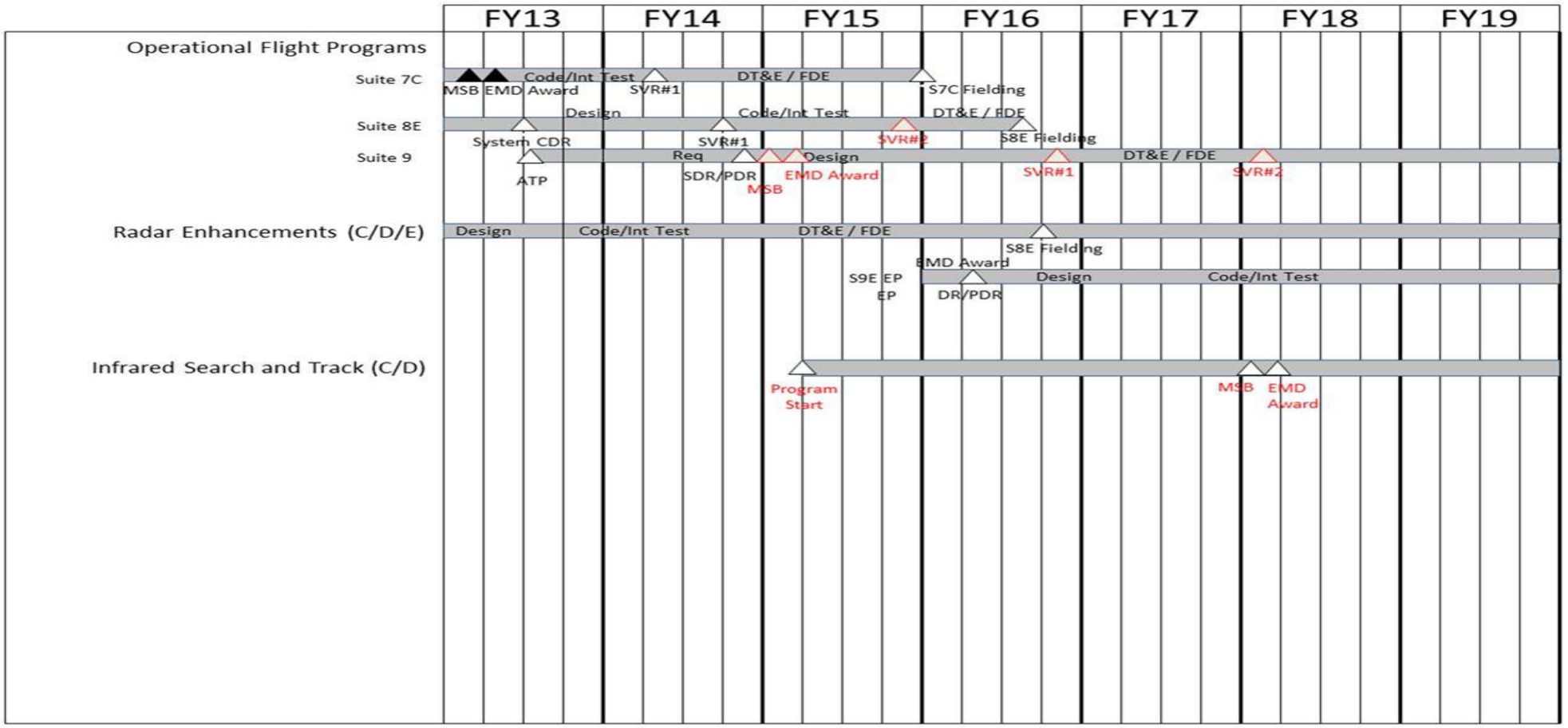


Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207136F / *Manned Destructive Suppression*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	13.362	11.022	14.831	-	14.831	14.959	15.040	15.334	15.626	Continuing	Continuing
674595: *F-16 HARM Targeting System*	-	13.362	11.022	14.831	-	14.831	14.959	15.040	15.334	15.626	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Manned Destructive Suppression (MDS) program element funds the development, procurement, and sustainment of the Air Force's Suppression of Enemy Air Defenses (SEAD) and Destruction of Enemy Air Defenses (DEAD) capabilities. The F-16 HARM Targeting System (HTS) is currently the only programmed reactive SEAD capability and enables targeting the HARM missile in its most lethal 'range known' mode. The program provides F-16 Block 50/52 and Block 40/42 aircraft with the ability to employ the AN/ASQ-213 Pod. With the introduction of HTS Revision 7 (HTS R7) in 2007, the AN/ASQ-213 Pod now has a precision geo-location capability to target Precision Guided Munitions (PGMs) to destroy fixed and mobile enemy air defense elements. Additionally, by relocating the AN/ASQ-213 HTS R7 Pod to the aircraft's left inlet hard point, the F-16 can simultaneously carry the HTS R7 Pod and an Advanced Targeting Pod (ATP). HTS R7 fielding is complete and represents the Air Force's near-term solution for reactive time critical targeting for DEAD until this mission can be transferred to F-35 or a yet to be defined system. HTS R7 derived precision targeting data can be provided to all Joint Forces via Link-16. This effort continues preplanned product improvements (P3I) for the HTS and applies technologies similar to those demonstrated in the Advanced Tactical Targeting Technologies (AT3) program and HTS R7 development.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	13.683	13.138	15.017	-	15.017
Current President's Budget	13.362	11.022	14.831	-	14.831
Total Adjustments	-0.321	-2.116	-0.186	-	-0.186
• Congressional General Reductions	-0.018	-			
• Congressional Directed Reductions	-	-2.116			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.303	-			
• Other Adjustments	-	-	-0.186	-	-0.186

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207136F / *Manned Destructive Suppression*

Change Summary Explanation

FY14: reduced -$2.116 for Congressional Program decrease.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: P3I R7 Software Upgrade (SWUP) ***Description:*** P3I R7 Software Upgrade (SWUP) ***FY 2013 Accomplishments:*** HTS R7.8 SWUP development continued from risk reduction and program definition to software development and preparation for flight testing. Studies continued on risk reduction efforts for future P3I phase(s). Mission support, i.e., program management for administrative and technical support activities continued. The major thrusts of this year were R7.8 SWUP design and code activities and planning for subsequent flight testing. ***FY 2014 Plans:*** HTS R7.8 SWUP development continues in software development and start of initial flight testing. Studies continue on risk reduction efforts for future P3I phase(s). Mission support, i.e., program management for administrative and technical support continue. The major thrusts of this year is R7.8 SWUP design, code and testing preparation for the first initial flight testing. ***FY 2015 Plans:*** HTS R7.8 SWUP development continues in software development and baseline flight testing, test data analysis, software fixes, and release of updated software for iterative flight testing. Studies continue on risk reduction efforts for future P3I phase(s). Mission support, i.e., program management for administrative and technical support continues. The major thrusts of this year are R7.8 SWUP baseline flight testing and preparation for formal development flight testing.	10.574	9.887	12.048
Title: Flight Test ***Description:*** Flight Test ***FY 2013 Accomplishments:*** Government flight test operations continued to include test planning, and risk mitigation plans to address scarcity of resources; i.e., aircraft and ranges. This funding also included test data analysis support and baselining of requirements from actual test data results during HTS SWUP R7.7 flight tests. ***FY 2014 Plans:*** Government flight test operations completes planning phase and enters into initial flight testing of R7.8 SWUP software capabilities. This funding also include test data analysis support and baselining of requirements from actual test data results during initial flight testing. Ground testing such as anechoic chamber testing will be conducted, as needed. The test organization	1.900	0.500	1.983

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207136F / *Manned Destructive Suppression*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
will conduct each mission to include F-16 test aircraft operations, threat ranges and associated support, air re-fueling, and range control support. Post-mission flight test support for each mission is planned. ***FY 2015 Plans:*** Government flight test operations enter baseline flight testing of R7.8 SWUP software capabilities. This funding also includes test data analysis support and baselining requirements from actual test data results during flight testing. Ground testing such as anechoic chamber testing will be conducted, as needed. The test organization will conduct each mission to include F-16 test aircraft operations, threat/test ranges and associated support, air re-fueling, and range control support. Post-mission support for each mission is planned.			
Title: Mission Planning ***Description:*** Joint Mission Planning System (JMPS) (Formerly Air Force Mission Support System (AFMSS)) ***FY 2013 Accomplishments:*** Continued mission planning in conjunction with HTS R7.8 software upgrade. This effort begam planning to address deficiencies, additional engineering software releases and forward fielding. ***FY 2014 Plans:*** Continue mission planning in conjunction with HTS R7.8 software upgrade. This effort will include development and testing of candidate upgrades and initial engineering releases in support of fielding. ***FY 2015 Plans:*** Continue mission planning is conjunction with HTS R7.8 software upgrade. This effort will include continued development and testing of candidate upgrades and incremental engineering releases in support of fielding.	0.888	0.635	0.800
Accomplishments/Planned Programs Subtotals	13.362	11.022	14.831

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• No other investment funding: *N/A*	-	-	-	-	-	-	-	-	-	-	-

Remarks

E. Acquisition Strategy

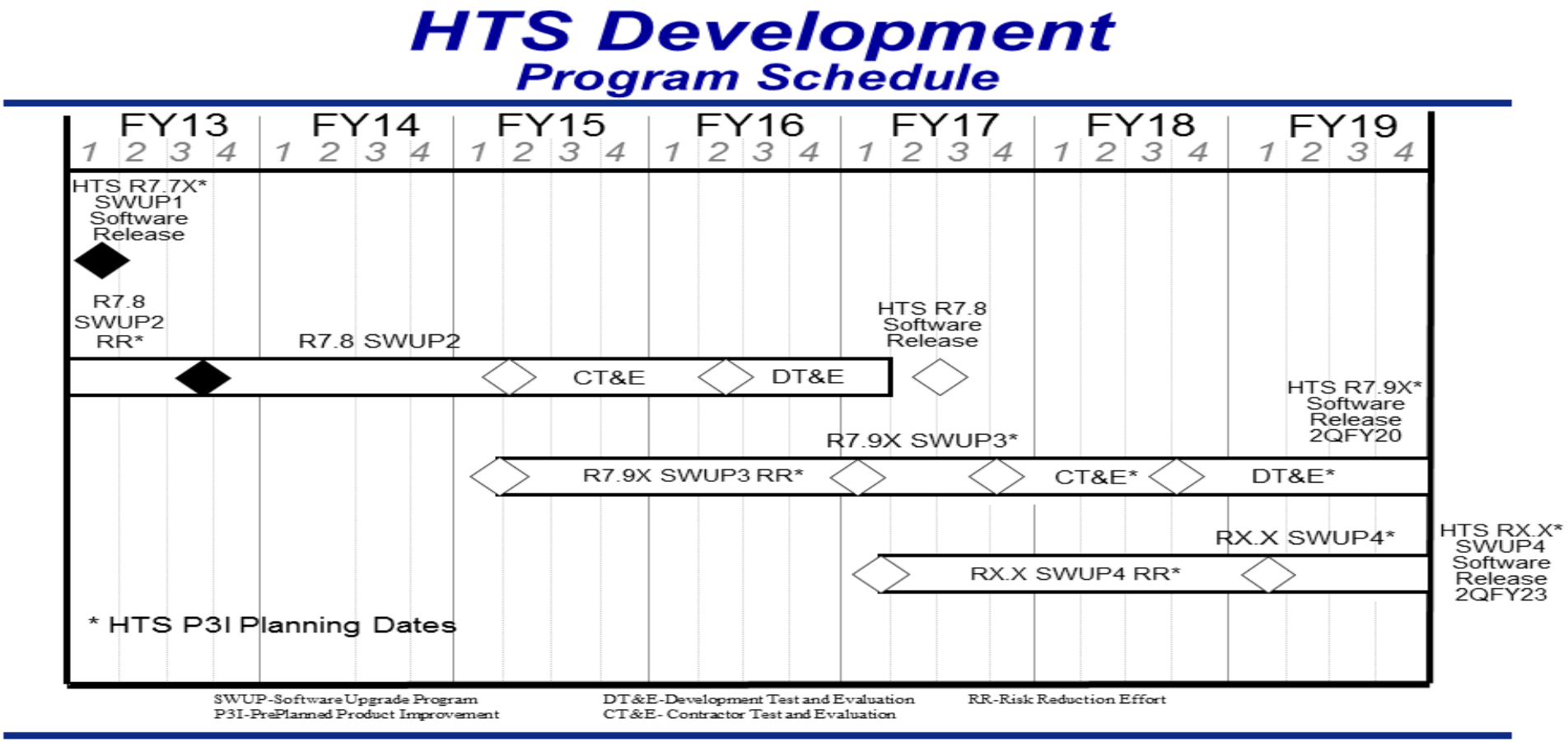
The HTS R7 improvement strategy includes accomplishment of risk reduction studies and selection of appropriate contracting strategies for P3I and upgrade of HTS inventory.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207136F / *Manned Destructive Suppression*

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207136F / *Manned Destructive Suppression*	**Project (Number/Name)** 674595 / *F-16 HARM Targeting System*



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207138F / *F-22A Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	2,944.282	326.012	274.407	156.962	-	156.962	275.230	370.252	398.208	418.720	Continuing	Continuing
674785: *F-22*	2,944.282	326.012	274.407	153.999	-	153.999	221.551	258.075	242.229	282.832	Continuing	Continuing
674788: *F-22 Tactical Mandates*	0.000	-	-	2.963	-	2.963	53.679	112.177	155.979	135.888	41.618	502.304
MDAP/MAIS Code: 265												

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY15, Project 674785 efforts transferred to Project 674788 F-22 Tactical Mandates, formerly known as F-22 Mandates.

A. Mission Description and Budget Item Justification

The F-22 Raptor represents the USAF's top priority for providing the Joint Force with air dominance, operational access, and homeland and cruise missile defense for the next 20+ years. The F-22 is a first-of-a-kind multi-mission fighter aircraft that combines stealth, supercruise, advanced maneuverability and integrated avionics to make it the world's most capable combat aircraft. The Engineering and Manufacturing Development (EMD) phase of F-22 acquisition is complete. The program is now continuing the pre-planned modernization effort through incremental development phases that enhance the F-22 Global Strike capability. The development program enhances the air vehicle, engine, and training system to improve/enhance F-22 weapons, communications, and Intelligence Surveillance Reconnaissance (ISR) capabilities.

BA7 - This program is in Budget Activity 7, Operational Systems Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production fuunding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	371.667	328.542	248.319	-	248.319
Current President's Budget	326.012	274.407	156.962	-	156.962
Total Adjustments	-45.655	-54.135	-91.357	-	-91.357
• Congressional General Reductions	-0.482	-0.041			
• Congressional Directed Reductions	-6.500	-54.094			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-10.409	-			
• Other Adjustments	-28.264	-	-91.357	-	-91.357

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*

Change Summary Explanation

FY13: $45.655M reduction includes $28.264M for sequestration, $6.5M should cost review savings congressional mark, $10.409M for Small Business Innovative Research (SBIR), and $0.482M Congressional General Reduction (CGR) reduction

FY14: $54.135M reduction due to: $54.094M program decrease and $0.041M CGR reduction

FY15: $91.357M reduction includes: $44.8M reprogrammed to Increment 3.2B (PE 0605213F) to support full funding, $44.6M reduction due to restructure of F-22A Modernization

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207138F / *F-22A Squadrons*	Project (Number/Name) 674785 / *F-22*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
674785: *F-22*	2,944.282	326.012	274.407	153.999	-	153.999	221.551	258.075	242.229	282.832	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

Totals include funding for PRCP Program Number, 265 F-22A Squadrons.

In FY13, a separate Program Element (060513F) was created for Increment 3.2B FY13 milestone B and beyond efforts for greater transparency. All Increment 3.2B efforts and associated funding prior to FY13 are included in the F-22A Squadrons (0207138F) budget documentation.

In FY15, a separate Budget Program Activity Code (BPAC 674788) was created for F-22 Tactical Mandates, formerly known as F-22 Mandates. All F-22 Tactical Mandates efforts and funding prior to FY15 are included in the F-22 Squadrons (PE 0207138F/BPAC 674785).

F-22 development and production is complete. The remaining program is a compilation of F-22 Operational Flight Program (OFP) updates, capability enhancements, and mandates necessary to keep the F-22 weapon system the world's most capable fighter. The Cost to Complete and Total Cost are entered as "Continuing" due to ongoing individual Reliability and Maintainability Maturation Program (RAMMP) initiatives to improve operational availability.

A. Mission Description and Budget Item Justification

The F-22 Raptor represents the USAF's top priority for providing the Joint Force with air dominance, operational access, homeland and cruise missile defense for the next 20+ years. The F-22 is a first-of-a-kind multi-mission fighter aircraft that combines stealth, supercruise, advanced maneuverability and integrated avionics to make it the world's most capable combat aircraft. While F-22 Engineering and Manufacturing Development (EMD) and aircraft production completed May 2012, funding for F-22 modernization is "continuing" beyond the FYDP.

This program funds all non-MDAP development efforts for the F-22. The program is now continuing the pre-planned and evolutionary modernization effort through incremental development phases that enhance the F-22 anti-access, area denial, and Global Strike capability. The development program modernizes and upgrades the air vehicle, engine, avionics, and training systems to improve/enhance F-22 weapons, communications, and Intelligence Surveillance Reconnaissance (ISR) capabilities.

BA7 - This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Increment 3.2A	99.795	52.833	3.316

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: The F-22 Increment 3.2A Modernization Program consists of the software development necessary to provide Increment 3.2A capabilities including improvements to Electronic Protection, Combat Identification and Link-16 Receive. ***FY 2013 Accomplishments:*** Continued to prepare lab and test facilities for Development, Integration, and Test. All software coding, integration and testing continued and Developmental Test was conducted. ***FY 2014 Plans:*** Continue Development, Integration, and Test. All software coding, integration and testing continue. Developmental Test will be conducted and completed. Operation Test will begin. ***FY 2015 Plans:*** Operational Test will complete. Operation Flight Program upgrade on combat coded F-22 aircraft will begin.			
Title: F-22 Tactical Mandates ***Description:*** The F-22 Tactical Mandates program (previously documented as F-22 Mandates) consists of the software and hardware development necessary to provide tactical Mode 5 and Link 16 Transmit on the F-22. The mandate for Mode 5 is required by the Joint Requirements Oversight Council (JROC). ***FY 2013 Accomplishments:*** Not Applicable ***FY 2014 Plans:*** F-22 Tactical Mandates requirements definition and proposal preparation activities. ***FY 2015 Plans:*** Not Applicable	-	2.400	-
Title: Update 5 ***Description:*** Update 5 is a software only upgrade previously documented under the Major thrust "Software Support". It is now separated out for better clarity and insight and is not a New Start. Software updates develop, test and field new capabilities and capability enhancements. Software updates include changes driven by real world evolving threats, emergency/safety of flight issues, and deficiency reports. The Update 5 Operation Flight Program (OFP) includes Automatic Ground Collision Avoidance System (AGCAS), Intra Flight Data Link Mode 5th to 4th generation IFDL capability (IFDL GWY Mode), and basic to Block I AIM-9X missile launch capability. ***FY 2013 Accomplishments:***	36.184	29.560	27.670

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Update 5 OFP, to include AGCAS, IFDL GWY Mode, and AIM-9X Basic, continued code, integration, and test. ***FY 2014 Plans:*** The Update 5 OFP, to include AGCAS, IFDL GWY Mode, and AIM-9X Basic, will be tested in both the Raptor Integration Lab (RAIL), and the Avionics Integration Lab (AIL). In addition, the Combined Test Force will conduct developmental flight test on the Update 5 OFPs during FY14. ***FY 2015 Plans:*** The Update 5 OFP will complete both developmental and operational flight test. The Update 5 OFP will release for fielding.			
Title: Update 6 Interoperability	15.200	22.163	23.416
Description: Update 6 Interoperability is a software only upgrade previously documented under the Major thrust "Software Support" and has been separated out for better clarity and insight and is not a New Start. Software updates develop, test and field new capabilities and capability enhancements. Software Updates include changes driven by real world evolving threats, emergency/safety of flight issues, and deficiency reports. U6 Interoperability provides for development to support cryptographic updates required by the National Security Agency (NSA) to IFDL, Link-16, and Secure Voice and development to maintain interoperability with the enhancements to Link-16 and Secure Voice networks. The U6 Interoperability program will absorb and build upon the development work already accomplished in the KOV-20 Cryptographic Modernization Program and integrate that development into a single Operational Flight Program (OFP) for fleet release. In addition, U6 Interoperability will develop and deliver software fixes identified as critical by the operational community. ***FY 2013 Accomplishments:*** The KOV-20 Crypto Modernization portion of U6 Interoperability finished requirements analysis towards conducting a System Design Review (SDR) in 1QFY14. The design phase continued toward a Critical Design Review (CDR) in 1QFY15. ***FY 2014 Plans:*** Update 6 Interoperability Materiel Development Decision (MDD) in 2QFY14. Once the approval for the program is received via the Acquisition Decision Memorandum (ADM), U6 Interoperability will release the program Request for Proposal (RFP) for development contract and begin the requirements definition phase by 3QFY14. KOV-20 Crypto Modernization will complete the requirements analysis phase at SDR. U6 Interoperability will allow KOV-20 to continue the design phase toward a CDR in 1QFY15. Will Code, integrate, and test the KOV-20 module firmware to position the module for NSA recertification. ***FY 2015 Plans:*** Update 6 Interoperability development will transition from requirements definition to design with a SDR TIM in 2QFY15. Concurrently, Crypto Modernization will complete the design phase at CDR. The project will complete the code and test			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
phase, while subsequently kicking off the subsystem testing of the software, which will continue throughout FY15. Update 6 Interoperability will meet Milestone B requirements in 1QFY16.			
Title: Software Support	12.169	12.134	10.647
Description: Software Support includes Air Vehicle Software Development ("Updates"), Pilot Training Systems (PTS) Software Development, and Integrated Maintenance Information System (IMIS) Software Development through FY 2013. Beginning with this budget submission, Air Vehicle Software Development ("Updates") are broken out as separate line items for clarity. Updates 5 and 6 are both separate line items from software support. Software Support updates develop, test and field new capabilities and capability enhancements. Software Updates also include changes driven by real world evolving threats, emergency/safety of flight issues, deficiency reports, upgrades to training devices in order to maintain concurrency with aircraft configuration and capability. ***FY 2013 Accomplishments:*** Update 4 software support Operational Flight Programs (OFP) completed and fielded. Pilot Training Systems (PTS) software development continued software upgrades for the field -- software enhancements, which include pilot, maintenance and training device reliability improvement, software upgrades, modernization program integration, Distributed Mission Operations (DMO) integration, IMIS integration, and safety critical items. IMIS continued ADA to C++ conversion with focus on completion of the Present Tech Order (TO) and Air Vehicle Interface Modules. ***FY 2014 Plans:*** Pilot Training Systems (PTS) software development to continue software upgrades for the field -- software enhancements, which include pilot, maintenance, and training device reliability improvement, software upgrades, modernization program integration, DMO integration, IMIS integration, and safety critical items. IMIS to continue incremental conversion of ADA to C++ with focus on completion of final phase of Present TO and Air Vehicle Interface modules. Funding to fully integrate the enhanced Advanced Diagnostic Interface Tool (ADIT) capability as an application within IMIS; Provide integrated Multiplex Bus Fault Isolation (MBFI) software capability to operate within the IMIS Solaris environment; Provide integrated Engine Usage Based Lifeing (UBL) algorithms for IMIS to support Update 5 OFP; Provide capability to record actual aircraft flight time within IMIS; Design, planning, and preliminary development for the IMIS scheduling and analysis functionality. ***FY 2015 Plans:*** Pilot Training Systems (PTS) software development to continue software upgrades for the field -- software enhancements, which include pilot, maintenance, and training device reliability improvement development, software upgrades, modernization program integration, DMO integration, IMIS integration, and safety critical items. IMIS continues to fully integrate the enhanced Advanced Diagnostic Interface Tool (ADIT) capability as an application within IMIS; Provide integrated Multiplex Bus Fault Isolation (MBFI) software capability to operate within the IMIS Solaris environment; Provide capability to record actual aircraft flight time within IMIS; Continue development of the IMIS scheduling and analysis functionality.			
Title: Advanced Technology Development	8.189	28.651	8.915

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Technology maturation, risk reduction, studies, and demonstrations of Classified F-22 related development efforts. ***FY 2013 Accomplishments:*** Completed Phase 2 for flight testing and integration of Candidate M3, ready for handoff to Update 5. Wing seal test planning and hardware development ongoing with planned ground and flight testing in FY14. Continued support for technology development and maturation of current projects and added several additional projects. ***FY 2014 Plans:*** Continued support for technology development and maturation of projects. Establish contracts to perform studies of several new technology candidates to determine feasibility for integration onto F-22. Planned wind tunnel testing of scale model shapes for concept evaluation. Ground and flight test evaluation of wing seal covers. ***FY 2015 Plans:*** Continue support for technology development and maturation of projects.			
Title: Virtual Address eXtension Migration ***Description:*** The VAX Migration program develops, integrates, tests, and deploys computer infrastructure and software tools to replace existing VAX-based resources used to develop, field, and sustain F-22 capabilities. The current VAX architecture is obsolete, resulting in increased program risk, and delays in development due to reliance upon increasingly unreliable and unsupportable infrastructure. ***FY 2013 Accomplishments:*** In FY 2013: Completed development and delivery of Network User Control Interface (NUCIF) card allowing for non-VAX computers to interface with F-22 test aircraft and development labs. Began site-by-site replacement of VAX systems through deployment of PC-based systems, compilers and software support tools including: Dimensions, Cradle, Quicksilver; Deployment of Instrumentation Tools, Simulations Tools and User Unique Tools. ***FY 2014 Plans:*** In FY 2014: Complete site-by-site replacement of VAX systems through deployment of PC-based systems, compilers and software support tools including: Dimensions, Cradle, Quicksilver; Deployment of Instrumentation Tools, Simulations Tools and User Unique Tools. Complete full the migration of F-22 development efforts from legacy VAX-dependent architecture; Re-host essential software tools to a PC environment without loss of capability, reliability, or degradation of the existing functionality. Shut-down of all VAX per requirement. ***FY 2015 Plans:*** In FY 2015: No planned activities.	7.586	5.474	-
Title: System Engineering/Program Management Support	5.423	4.432	5.292

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Provides for F-22 program-wide planning and execution to include studies, analysis, and requirements definition. ***FY 2013 Accomplishments:*** Provided for F-22 program-wide planning and execution comprised of, but not limited to, the following: Future Capabilities Planning and F-22 Mandates Requirements Definition, Cost Estimating Data, and Systems Engineering Process Management. ***FY 2014 Plans:*** Provides for F-22 program-wide planning and execution comprised of, but not limited to, the following: Future Capabilities Planning, Cost Estimating Data, and Systems Engineering Process Management. ***FY 2015 Plans:*** Provides for F-22 program-wide planning and execution comprised of, but not limited to, the following: Future Capabilities Planning, Cost Estimating Data, and Systems Engineering Process Management.			
Title: Reliability and Maintainability Maturation Program (RAMMP) ***Description:*** The Reliability, Availability, and Maintainability Maturation Program (RAMMP) provides for the development and integration of upgrades to improve reliability, availability and maintainability (RAM). The associated RAMMP RDT&E effort develops candidate RAMMP initiatives which are down-selected for implementation based on their development maturity and impact on F-22 life cycle costs. RAMMP provides for the development of urgent response requirements for the aircraft, for example Automatic Back-Up Oxygen System (ABOS). ***FY 2013 Accomplishments:*** Provided for development of multiple efforts to improve Mean Time Between Maintenance (MTBM), Maintainability, and reduce F-22 Weapon System Life Cycle Costs. FY 2013 active RAMMP development projects included, but are not limited to: Mighty Tough Boot Development, Aircraft Mounted Nozzle Shield (AMNS) Liner Redesign, Integrated Forebody (IFB) Rain Erosion Nose Cap, Canopy Topcoat Redesign, Stored Energy System (SES) Air Filter, Auxiliary Power Unit (APU) Plenum Sealing, Gland Redesign, Automated Backup Oxygen System, Secondary Multi-Function Display (SMFD) Backlight to Lower Power LED, Gland Redesign, and Driver B RF Circuit Redesign. ***FY 2014 Plans:*** Provides for development of multiple efforts to improve Mean Time Between Maintenance (MTBM), Maintainability, and reduce F-22 Weapon System Life Cycle Costs. FY2014 active RAMMP development projects include, but are not limited to: Mighty Tough Boot, AMNS Liner Redesign, IFB Rain Erosion Nose Cap, and Gland Redesign. ***FY 2015 Plans:***	12.928	17.011	1.105

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Development of efforts to improve Mean Time Between Maintenance (MTBM), Maintainability, and reduce F-22 Weapon System Life Cycle Costs.			
Title: F-22 Small Projects ***Description:*** Provides for F-22 modernization activities including, but not limited to: technology studies and demonstrations, Low Observable (LO) Signature Management, EN/Threat Modeling Support, Developmental Test (DT) Weapon Assets, Pilot Training (PT), Dynamic Synthetic Appeture Radar (SAR), Flight Test Engine Refurbishment, Support Equipment Development, and Other Government Costs (OGC)/Government Furnished Equipment (GFE). ***FY 2013 Accomplishments:*** Continued F-22 modernization development and support activities including, but not limited to: DT Weapons Assets, Threat Modeling Support, Test Support, Test Aircraft Modifications, Scorpion Helmet Mounted Display Demo, CRIIS Network development, PT, Dynamic SAR, AIM-9X Risk Reduction, and OGC/GFE. ***FY 2014 Plans:*** Continue F-22 modernization development and support activities including, but not limited to: DT Weapons Assets, Threat Modeling Support, Test Support, Test Aircraft Modifications, Scorpion Helmet Mounted Display Demo, CRIIS Network development, PT Dynamic SAR, AIM-9X Risk Reduction, and OGC/GFE. ***FY 2015 Plans:*** Continue F-22 modernization development and support activities including, but not limited to: DT Weapons Assets, Threat Modeling Support, Test Support, Test Aircraft Modifications, Scorpion Helmet Mounted Display Demo, CRIIS Network development, PT Dynamic SAR, AIM-9X Risk Reduction, and OGC/GFE.	6.133	1.585	2.235
Title: Combined Test Force ***Description:*** The F-22 Combined Test Force (CTF), located at Edwards Air Force Base, conducts full-up weapons system testing to assess the synergistic effect of the F-22 combined characteristics of stealth, speed, maneuverability, and integrated avionics in mission accomplishment. The CTF uses operationally significant ground and flight test scenarios, when practical, to identify system performance deficiencies early before they are more difficult and costly to resolve. Starting in FY13, CTF efforts directly associated with F-22 Increment 3.2B development are located in the Increment 3.2B program documentation, Program Element 0605213F. ***FY 2013 Accomplishments:*** The significant programs that underwent flight test at AFFTC included: final separation event (#5) for the AIM-9X safe separation risk reduction project, ABOS Flight Testing, 1st AIM-9X Captive Carry Mission, Upper Pressure Garment Verification, Increment 2 Lot 3B Update 4, First AIM-9X AFSEO launch 1, Increment 2 Update 4.1 OFP, Automatic Ground Collision Avoidance System (LIS-AGCAS), Quick turn test of Update 4.1 OFP, Two High Density Evaluation missions, Global Inertial Navigation System	65.116	60.236	27.633

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
(GINS) 09 initial retrofit, 3.2A Link 16 sensor fusion, F-119 Redesigned Fuel Nozzle, and first flight of AIM-9X Basic (and all associated ground testing). ***FY 2014 Plans:*** The significant programs undergoing flight test at AFFTC include: Inc 3.2A, AIM-9X Seek Eagle support, Update 5 including Line-in-the-Sky Automated Ground Collision Avoidance System (LIS-AGCAS), GPS Internal Navigation System (GINS) 09 with Inc. 3.2A, Pylon Wing Covers, and Airborne and Ground Integrated Lab Experiment support. ***FY 2015 Plans:*** The significant programs undergoing flight test at AFFTC include: Completion of misc minor projects (outlined in FY 2014), Increment 3.2B, KC-46 Refueling Certification, F-22 Tactical Mandates planning activities, and KOV-20 Crypto Modernization planning activities.			
Title: Laboratory Test & Operations (LTO)	57.289	37.928	43.770
Description: Lab Test & Operations is a continuous activity that plans and conducts development, integration, test, & verification (IT&V) of F-22 OFPs with F-22 hardware. LTO provides maintenance, staffing, and operation of 18 development labs including 5 unique major System Integration Laboratories (SILs): the Agile Integration Lab (AIL); the Raptor Integration Lab (RAIL); the Air Combat Simulation (ACS) Lab; Vehicle Integration Facility (VIF); and the Vehicle System Simulator (VSS). Through the ACS, LTO provides the combat air forces with advanced mission-level test and training capability through a fully representative virtual simulation. Starting in FY13, LTO efforts directly associated with Increment 3.2B development are located in the Increment 3.2B program documentation, Program Element 0605213F. ***FY 2013 Accomplishments:*** Maintained lab availability in support of F-22 programs. Updated critical systems as required to support new aircraft configurations and capabilities. Accomplished OFP verification and risk reduction. Supported pilot training for Air Combat Command exercises and war gaming; Air Force Operation Test & Evaluation Center test planning; and test event rehearsals. Supported periodic Air Warfare Center operational mission data updates. The significant programs that underwent lab test were Increment 3.2A, Update 5, AFWC Mission Data Loads, and Increment 3.2B. ***FY 2014 Plans:*** Maintain lab availability in support of F-22 programs. Update critical systems as required to support new aircraft configurations and capabilities. Accomplish OFP verification and risk reduction. Support pilot training in support of Air Combat Command exercises and war gaming; Air Force Operation Test & Evaluation Center test planning; and test event rehearsals. Support periodic Air Warfare Center operational mission data updates. The significant programs planned for lab test are Update 5, Increment 3.2B, and AFWC Mission Data Loads. ***FY 2015 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Maintain lab availability in support of F-22 programs. Update critical systems as required to support new aircraft configurations and capabilities. Accomplish OFP verification and risk reduction. Support Air Combat Command exercises and war gaming; Air Force Operation Test & Evaluation Center test planning; and test event rehearsals. Support periodic Air Warfare Center operational mission data updates. The significant programs planned for lab test are Increment 3.2B and AFWC Mission Data Loads.			
Accomplishments/Planned Programs Subtotals	326.012	274.407	153.999

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # F02200: *F-22A Squadrons, PE 0207138F**	316.516	358.268	301.426	-	301.426	188.794	264.277	206.349	224.861	Continuing	Continuing
• RDT&E: BA07: PE 0605213F: *Increment 3.2B, RDT&E***	110.432	115.000	173.647	-	173.647	141.575	73.042	1.411	1.438	24.751	641.296
• APAF: BA05: Line Item # F2232B: *F-22 Increment 3.2B, PE 0207138F****	-	-	28.500	-	28.500	73.952	83.899	153.694	13.322	20.546	373.913
• OPAF: BA03: Line Item 837300: *Other Procurement, PE 0207138F, F-22A*	0.577	0.971	1.072	-	1.072	0.942	0.987	1.005	1.022	Continuing	Continuing
• MILCON: PE 0207138F: *MILCON*	-	13.900	11.000	-	11.000	-	-	-	-	-	24.900
• RDT&E: BA07: PE 0207163F: *AIM-120D, AMRAAM, RDT&E*****	18.590	20.830	23.940	-	23.940	5.820	-	-	-	-	69.180

Remarks

NOTES:

*F-22A Squadrons, APAF/PE 0207138F, includes funding for F-22A Squadrons BPs 11 (Aircraft Modifications), 13 (Post-Production Support), 16 (Initial Spares), and 19 (Depot Activation) only.

**F-22 Increment 3.2B, RDT&E/PE 0605213F, includes funding for FY13 and beyond identified in the Increment 3.2B documentation. PEs 0605213F and 0207318F share lab and infrastructure support costs across the F-22 enterprise.

***F-22 Increment 3.2B, APAF/PE 0207138F includes funding for associated Increment 3.2B BPs 11 (Aircraft Modifications) and 16 (Initial Spares) only.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
****AIM-120D, AMRAAM RDT&E/PE 0207163F, funding provides for the AIM-120 development as a part of the F-22 Increment 3.2B effort.											

D. Acquisition Strategy

The Raptor Enhancement Development & Integration (REDI) contract is an Indefinite Delivery/Indefinite Quantity Ordering contract that maximizes flexibility to start, stop, accelerate and decelerate projects as required. The REDI contract was established to be more responsive to evolving war fighter requirements. The REDI contract allows the issuance of orders for the highest priority war fighter capabilities in operationally meaningful capability increments, requirements analysis, contractor cost estimates and studies, development and demonstration of capability enhancements, and unanticipated future war fighter requirements. Each increment is broken into phases to initiate requirements analysis, the design phase and the development, integration and verification phase of a specific incremental development effort. The (REDI) II contract is a follow-on Indefinite Delivery/Indefinite Quantity contract to the initial REDI contract. REDI II provides maximum flexibility to manage various modernization projects. The REDI II contract allows for the issuance of orders for efforts associated with the planning, analysis, design, development, qualification, test and documentation of F-22 weapon system performance enhancements, life-cycle improvements, Operational Flight Program (OFP) upgrades, and associated efforts essential to accomplishing the F-22 mission.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Increment 3.2A	SS/CPIF	Lockheed Martin : Fort Worth, TX	254.693	99.795	Oct 2012	52.833	Oct 2013	3.316	Oct 2014	-		3.316	-	410.637	-
F-22 Tactical Mandates	SS/CPIF	Lockheed Martin : Fort Worth, TX	0.000	-		2.400	Jul 2015	-	May 2015	-		-	-	2.400	-
Update 5	SS/ Various	Lockheed Martin : Fort Worth, TX	8.600	36.184	Nov 2012	29.560	Nov 2013	27.670	Nov 2014	-		27.670	6.249	108.263	-
Update 6 Interoperability	SS/ Various	Lockheed Martin : Fort Worth, TX	0.000	15.200	Nov 2012	22.163	Nov 2013	23.416	Nov 2014	-		23.416	132.897	193.676	-
Software Support	SS/ Various	Lockheed Martin : Fort Worth, TX	264.710	12.169	Nov 2012	12.134	Nov 2013	10.647	Nov 2014	-		10.647	Continuing	Continuing	-
Advanced Technology Development	Various	Various : Various,	40.378	8.189	Nov 2012	28.651	Feb 2014	8.915	Nov 2014	-		8.915	Continuing	Continuing	-
VAX Migration	SS/CPIF	Lockheed Martin : Fort Worth, TX	167.318	7.586	Nov 2012	5.474	Mar 2014	-		-		-	-	180.378	-
System Engineering / Program Management	SS/CPFF	Lockheed Martin : Fort Worth, TX	199.987	5.423	Nov 2012	4.432	Mar 2014	5.292	Nov 2014	-		5.292	Continuing	Continuing	-
RAMMP	SS/CPFF	Lockheed Martin : Fort Worth, TX	140.516	12.928	Nov 2012	17.011	Feb 2014	1.105	Jan 2015	-		1.105	Continuing	Continuing	-
F-22 Small Projects	Various	Various : Various,	541.242	6.133	Nov 2012	1.585	Nov 2013	2.235	Nov 2014	-		2.235	Continuing	Continuing	-
		Subtotal	1,617.444	203.607		176.243		82.596		-		82.596	-	-	-

Remarks

FY13 - Total Cost Increment 3.2B costs and estimated contract award dates are summarized in separate documentation PE/BPAC 0605213F/654785. All Increment 3.2B efforts and funding prior to FY13 continue to be included in PE/BPAC 0207138F/674785.

FY15 - Total Cost F-22 Tactical Mandates costs and estimated contract award dates are summarized in separate documentation PE/BPAC 0207138F/674788.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Combined Test Force	Various	Various : Various,	660.946	65.116	Nov 2012	60.236	Nov 2013	27.633	Nov 2014	-		27.633	Continuing	Continuing	-
Laboratory Test & Operations (LTO)	SS/ Various	Lockheed Martin : Ft Worth, TX	535.046	57.289	Nov 2012	37.928	Nov 2013	43.770	Nov 2014	-		43.770	Continuing	Continuing	-
		Subtotal	1,195.992	122.405		98.164		71.403		-		71.403	-	-	-

Remarks

The Combined Test Force and Laboratory Test & Operations costs appear to decrease significantly FY2013-2015 due to Increment 3.2B test costs which have been segregated beginning FY13 and subsequently captured in the PE 0605213F documentation. Upon completion of Increment 3.2B testing, costs will again be captured in this PE 0207138F, F-22A Squadrons documentation.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Support	Various	Various : Various,	130.846	-		-		-		-		-	-	130.846	-
		Subtotal	130.846	-		-		-		-		-	-	130.846	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2,944.282	326.012		274.407		153.999		-		153.999	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

Baseline F-22 Program Schedule Summary

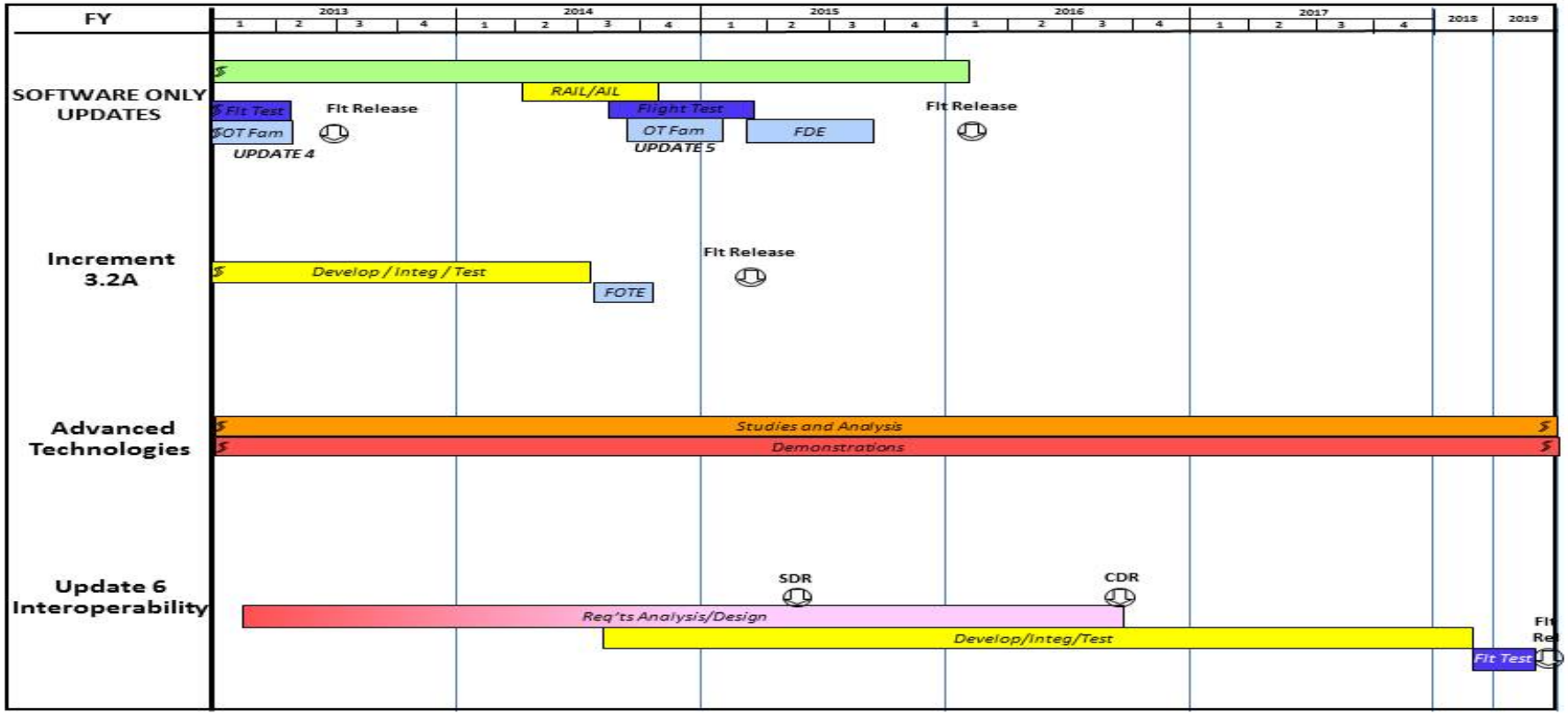


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674785 / *F-22*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Software Support Update 4 Fleet Release	3	2013	3	2013
Update 5 Fleet Release	1	2016	1	2016
Increment 3.2A Development, Integration, & Test	1	2013	3	2014
Increment 3.2A Fleet Release	1	2015	1	2015
Advanced Technology Development Studies & Analysis	1	2013	4	2019
Advanced Technology Development Demonstrations	1	2013	4	2019
Update 6 Interoperability Requirements Analysis/Design	1	2013	3	2016
Update 6 Interoperability Development, Integration, & Test	3	2014	3	2018
Update 6 Interoperability System Design Review (SDR)	2	2015	2	2015
Update 6 Interoperability Critical Design Review (CDR)	3	2016	3	2016
Update 6 Interoperability Flight Test	3	2018	3	2019
Update 6 Interoperability Fleet Release	4	2019	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207138F / *F-22A Squadrons*	Project (Number/Name) 674788 / *F-22 Tactical Mandates*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
674788: *F-22 Tactical Mandates*	-	-	-	2.963	-	2.963	53.679	112.177	155.979	135.888	41.618	502.304
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

Totals include funding for PRCP Program Number, 265 F-22 Tactical Mandates

In FY15, a separate Budget Program Activity Code (BPAC 674788) within PE 0207138F was created for F-22 Tactical Mandates, formerly known as F-22 Mandates. All F-22 Tactical Mandates efforts and funding prior to FY15 are included in the F-22 Squadrons Program documentation (PE 0207138F/BPAC 674785).

A. Mission Description and Budget Item Justification

The F-22 Tactical Mandates program is the follow-on modernization effort to Increment 3.2B. This program includes Link 16 Transmit and Mode 5 Identification Friend or Foe (IFF) Transpond/Interrogate. Integration will be accomplished using Open Systems Architecture, to enable future life cycle savings opportunities for the platform. The program will require hardware and software modifications to the Block 30/35 combat-coded F-22 fleet.

Mode 5 IFF is a Joint Requirements Oversight Council (JROC) mandated blue force identification capability that will directly improve the combat effectiveness of the Raptor as well as reducing fratricide risk DoD-wide.

Link 16 Transmit enables 5th-to-5th and 5th-to-4th tactical information exchange - a top Air Force priority. The Raptor's superior 5th Gen sensor suite will now aid the situational awareness of all participants, in any battle space, while further reducing fratricide risk.

BA07 - This program is in Budget Activity 07, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: F-22 Tactical Mandates	-	-	2.963
Description: The F-22 Tactical Mandates program (previously documented as F-22 Mandates; PE 0207138F, BPAC 674785) consists of the software and hardware development necessary to provide tactical Mode 5 and Link 16 Transmit on the F-22. The mandate for Mode 5 is required by the Joint Requirements Oversight Council (JROC).			
FY 2013 Accomplishments: Not Applicable			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674788 / *F-22 Tactical Mandates*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Not Applicable ***FY 2015 Plans:*** F-22 Tactical Mandates will begin capabilities analysis and selection, requirements development, design maturity, and early software modeling and test. The intent is to deliver design content toward achievement of the next milestone.			
Accomplishments/Planned Programs Subtotals	-	-	2.963

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDT&E: BA07: PE 0207138F: *F-22A Squadrons**	326.012	274.407	153.999	-	153.999	221.551	258.075	242.229	282.832	Continuing	Continuing
• APAF: BA05: Line Item #F02200: *F-22A Squadrons, PE 0207138F***	316.516	358.268	301.426	-	301.426	188.794	264.277	206.349	224.861	Continuing	Continuing
• RDT&E, BA05, PE 0605213F: *F-22A Increment 3.2B****	110.432	115.000	173.647	-	173.647	141.575	73.042	1.411	1.438	24.751	641.296
• APAF: BA05: Line Item #F2232B: *F-22A Increment 3.2B, PE 0207138F*****	-	-	28.500	-	28.500	73.952	83.899	153.694	13.322	20.546	373.913

Remarks

*F-22 Squadrons, RDT&E/PE 0207138F, includes funding for F-22A Squadrons modernization and development BPAC 674785.

**F-22A Squadrons, APAF/PE 0207138F, includes funding for F-22A Squadrons BPs 11 (Aircraft Modifications), 13 (Post-Production Support), 16 (Initial Spares), and 19 (Depot Activation) only.

***F-22 Increment 3.2B, RDT&E/PE 0605213F, includes funding for the development of F-22A, Increment 3.2B.

****F-22 Squadrons, APAF/PE 0207138F/F2232B, includes funding for F-22 Increment 3.2B BPs 11 (Aircraft Modifications) and 16 (Initial Spares) only.

D. Acquisition Strategy

The Raptor Enhancement Development & Integration (REDI) contract is an Indefinite Delivery/Indefinite Quantity Ordering contract that maximizes flexibility to start, stop, accelerate and decelerate projects as required. The REDI contract was established to be more responsive to evolving war fighter requirements. The REDI contract allows the issuance of orders for the highest priority war fighter capabilities in operationally meaningful capability increments, requirements analysis, contractor cost estimates and studies, development and demonstration of capability enhancements, and unanticipated future war fighter requirements. Each increment is broken into phases to initiate requirements analysis, the design phase and the development, integration and verification phase of a specific incremental development effort.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674788 / *F-22 Tactical Mandates*

The (REDI) II contract is a follow-on Indefinite Delivery/Indefinite Quantity contract to the initial REDI contract. REDI II provides maximum flexibility to manage various modernization projects. The REDI II contract allows for the issuance of orders for efforts associated with the planning, analysis, design, development, qualification, test and documentation of F-22 weapon system performance enhancements, life-cycle improvements, Operational Flight Program (OFP) upgrades, and associated efforts essential to accomplishing the F-22 mission.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207138F / *F-22A Squadrons*	Project (Number/Name) 674788 / *F-22 Tactical Mandates*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
F-22 Tactical Mandates	SS/CPIF	Lockheed Martin : Ft Worth, TX	0.000	-		-		2.963	Jun 2015	-		2.963	410.670	413.633	-
		Subtotal	0.000	-		-		2.963		-		2.963	410.670	413.633	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Lab Test & Operations	SS/ Various	Lockheed Martin : Ft Worth, TX	0.000	-		-		-		-		-	63.091	63.091	-
Combined Test Force (CTF)	Various	Various : Various,	0.000	-		-		-		-		-	25.580	25.580	-
		Subtotal	0.000	-		-		-		-		-	88.671	88.671	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		2.963		-		2.963	499.341	502.304	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674788 / *F-22 Tactical Mandates*

F-22 Tactical Mandates Program Schedule Summary

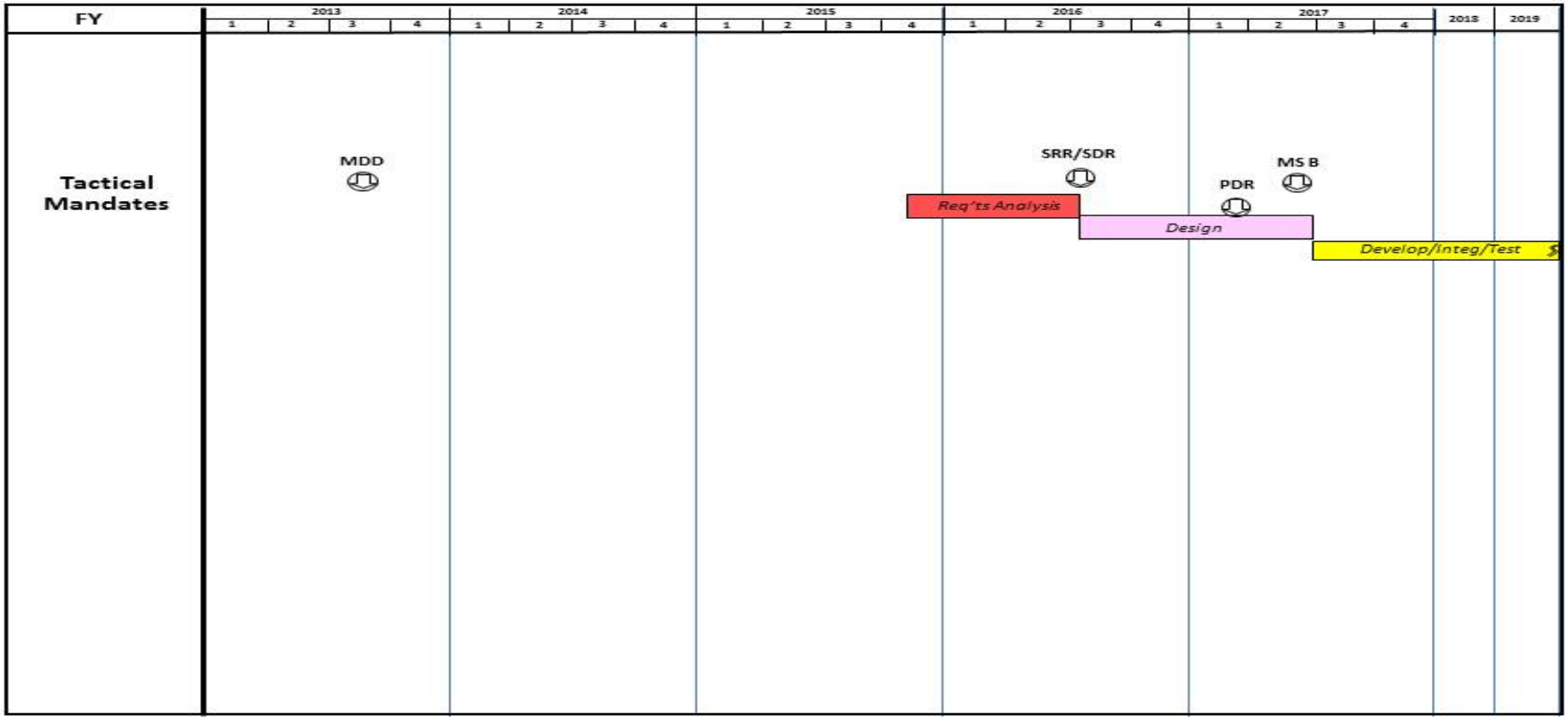


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207138F / *F-22A Squadrons*	**Project (Number/Name)** 674788 / *F-22 Tactical Mandates*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-22 Tactical Mandates Material Development Decision (MDD)	3	2013	3	2013
F-22 Tactical Mandates Requirements Analysis	4	2015	3	2016
F-22 Tactical Mandates System Requirements Review (SRR)	3	2016	3	2016
F-22 Tactical Mandates System Design Review (SDR)	3	2016	3	2016
F-22 Tactical Mandates Design	3	2016	2	2017
F-22 Tactical Mandates Preliminary Design Review (PDR)	1	2017	1	2017
F-22 Tactical Mandates Milestone B	2	2017	2	2017
F-22 Tactical Mandates Development, Integration & Test*	2	2017	4	2019

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	9.682	-	3.000	43.666	-	43.666	117.812	244.464	313.398	336.942	Continuing	Continuing
675346: *F-35*	0.000	-	3.000	28.051	-	28.051	117.812	244.464	313.398	336.942	Continuing	Continuing
676011: *JSF DUAL CAPABLE AIRCRAFT*	9.682	-	-	15.615	-	15.615	-	-	-	-	Continuing	Continuing
MDAP/MAIS Code: 198												

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, BPAC 676011, JSF DUAL CAPABLE AIRCRAFT includes new start efforts

A. Mission Description and Budget Item Justification

The F-35 Lightning II Fighter program is developing a family of highly common, affordable, next generation, multi-role aircraft to meet the needs of the USMC, USN, USAF and international partners. The three variants are the F-35A Conventional Takeoff and Landing (CTOL); F-35B Short Takeoff and Vertical Landing (STOVL); and the F-35C Carrier Variant (CV). Maximum commonality among the variants, consistent with National Disclosure Policy, will minimize life cycle costs. FY2015 continues development and testing of the F-35. As the initial capabilities are being delivered from the System Development and Demonstration (SDD) program, planning for Follow-on Development (FoD) continues. Capability requirements are being matured and FoD planning continues based upon the approved Fifth Generation Fighter Modernization Initial Capabilities Document (ICD), an approved Electronic Warfare ICD, and the results of an OSD Tiger Team Review. FY14 F-35 FoD activity supports development of Follow-on Development Increment 1 Capability Development Document (CDD). Follow-on Development will provide capability enhancements, required systems upgrades and cost improvements through an incremental acquisition approach.

Additionally, the F-35 JSF ORD calls for the F-35A (CTOL) Variant Air Vehicle to have the capabilities and provisions for Dual Capable Aircraft (DCA) operations in the first post SDD block upgrade. DCA refers to the capability to carry and deliver conventional and non-conventional weapons. DCA operation for the F-35A is internal carriage of two B-61s. Due to extensive certification requirements, the DCA capability planning and design will begin in Block 4A and continue through testing and certification in Block 4B.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force					Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*		**R-1 Program Element (Number/Name)** PE 0207142F / *F-35 Squadrons*			
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	8.117	33.000	104.866	-	104.866
Current President's Budget	-	3.000	43.666	-	43.666
Total Adjustments	-8.117	-30.000	-61.200	-	-61.200
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-8.117	-30.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-61.200	-	-61.200

Change Summary Explanation

FY13 Congressional reduction for Block 4 - Early to Need

FY14 Congressional reduction: -$23.0M for Block 4 ahead of Need, -$10.0M for B-61 - no Approved CDD, and +$3.0M for Block 4 CDD planning only

FY15 adjustments for proper program alignment and funding for higher Air Force priorities

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 675346 / *F-35*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675346: *F-35*	-	-	3.000	28.051	-	28.051	117.812	244.464	313.398	336.942	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

NOTE:
R-2A costs shown above reflect program funding only.

R-2A (section B)/R-3 displays combined service funding for F-35 Follow-on Development.

F-35 FoD Includes:
USAF:PE 0207142F BPAC 675346
USN: FY13 PE 0604800N Project Unit 2261
USN: FY14 PE 0604800N Project Unit 3353
USMC: FY13 PE 0604800M Project Unit 2262
USMC: FY14 PE 0604800M Project Unit 3351

F-35 DCA Includes:
USAF PE 0207142F BPAC 676011
USN N/A
USMC N/A

A. Mission Description and Budget Item Justification

F-35 FoD provides continuing incremental upgrades of the three F-35 variants and associated ground equipment. The FoD acquisition strategy is based upon incremental block development of capabilities with each increment consisting of two development cycles. FoD capability planning includes an efficient transition from F-35 SDD to Follow-on Development. As SDD development activities ramp down, the FoD program will assume responsibility for new development and the maintenance of associated developmental infrastructure. FoD capability planning includes Block 4A and 4B Engineering and Manufacturing Development efforts from FY16 through FY19 followed by DT and OT testing in 2020/2021 with IOC of capabilities in 2022.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207142F / *F-35 Squadrons*	**Project (Number/Name)** 675346 / *F-35*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Air Vehicle Follow-on Development (Capability Planning) (F-35 JSF) ***Description:*** Capability planning effort will focus on mission requirements analysis, early engineering, risk reduction and preparations leading to formal acquisition approval of Block 4. Program planning will consist of engineering and development support for defining, managing and the acquisition of capability enhancements required to address threats indicated in the Electronic Warfare ICD, the Fifth Generation Fighter Modernization ICD. ***FY 2014 Plans:*** Development and validation of the FoD CDD ***FY 2015 Plans:*** Requirements analysis and technical requirements development, systems engineering, and technical planning. A combined Systems Requirements Review and System Functional Review is planned followed by development of the Block 4 preliminary design.	-	3.000	47.880
Title: Developmental Test and Evaluation (F-35 JSF) ***Description:*** Initiate Laboratory and Test Aircraft Upgrade and other test planning activities required for Block 4 and later development , integration, test and evaluation. Changes are needed to support development and evaluation of improvements driven by changes in threat and as identified in the Electronic Warfare ICD and the Fith Generation Fighter Modernization ICD. . ***FY 2015 Plans:*** Funding will support infrastructure investment planning and prioritization required to maintain future development capability. This includes planning for long-lead procurement for replacement of engines and other life limited components on DT aircraft that will be at end of life upon completion of SDD, as well as laboratory upgrades required to support development and verification of capabilities in a relevant threat.	-	-	4.540
Title: Development Support ***Description:*** Technical and Analytical Support ***FY 2015 Plans:*** Initiate development support for defining, managing and acquiring the envisioned F-35B capability enhancements identified in approved requirements documents.	-	-	3.800
Accomplishments/Planned Programs Subtotals	-	3.000	56.220
Other Service Program Funding Adjustment	-	-	28.169
Air Force Subtotals	-	3.000	28.051

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 675346 / *F-35*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA05: PE 0604800F: *JSF SDD, BPAC 653831*	1,115.712	612.254	530.444	-	530.444	517.596	327.100	15.413	5.250	-	22,011.826
• RDTE: BA04: PE 0604800F: *JSF SDD, BPAC 653831*	-	-	4.976	-	4.976	4.979	-	-	-	-	9.955
• RDTE:BA05: PE 0604800F: *JSF Deployability and Suitability Enhancements, BPAC 653832*	14.167	16.200	32.593	-	32.593	29.657	-	-	-	-	-
• RDTE: BA07: PE 207142F: *Dual Capable Aircraft (DCA), BPAC 676011*	-	-	15.615	-	15.615	-	-	-	-	-	-
• RDTEN: BA05: PE 604800N: *JSF SDD (CV), BPAC 2261*	624.872	424.253	485.263	-	485.263	537.152	402.492	18.485	1.083	-	19,848.894
• RDTEN: BA05: PE 604800M: *JSF SDD (STOVL), BPAC 2262*	639.059	399.323	487.068	-	487.068	525.008	393.609	84.467	10.892	-	3,703.262
• RDTEN:BA05: PE 604800N: *USRL, BPAC 3194*	17.477	-	-	-	-	-	-	-	-	-	144.769
• International R&D (SDD/ FoD): *Int'l Parnter (SDD/FOD)*	148.772	18.030	6.430	-	6.430	2.600	8.080	3.040	-	Continuing	Continuing
• APAF: BA01: ATA000: *JSF CTOL, PE 0207142F, BP10*	2,532.184	2,889.602	3,553.046	-	3,553.046	5,138.558	5,262.325	5,943.415	5,770.781	148,305.400	190,999.096
• APAF: BA01:ATA000: *JSF CTOL Advance Procurement, PE 207142F, BP10*	293.400	339.533	291.880	-	291.880	438.808	528.560	522.180	497.720	18,087.420	22,248.588
• APN: BA01: BP0147: *JSF (CV), PE 0204146N*	808.000	1,028.415	610.652	-	610.652	629.916	1,135.967	1,394.026	1,974.142	32,609.960	49,791.131
• APN: BA01: BP0147C: *JSF Advance Procurement (CV), PE 204146N*	30.699	79.016	29.400	-	29.400	73.800	123.000	196.768	246.000	3,686.760	5,729.873
• APN: BA01:BP0152: *JSF (STOVL), PE 0204146M*	1,094.421	1,176.498	1,200.410	-	1,200.410	1,451.916	2,061.990	2,726.113	2,810.778	28,166.110	42,383.663
• APN: BA01: BP0152C: *JSF Advance Procurement (STOVL), PE 204146M*	98.061	103.195	143.885	-	143.885	203.057	226.014	136.732	139.330	3,180.220	4,971.884

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 675346 / *F-35*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• International Production: *International Production*	1,487.584	1,924.048	3,205.900	-	3,205.900	6,109.330	7,280.752	6,686.294	4,192.377	Continuing	Continuing
• OPN: BA04: BP4265: *JSF Other Procurement, PE 204261N*	-	-	-	-	-	-	-	-	-	-	5.665
• OPN: BA03: BP4267: *JSF Logistics Information System (ALIS), PE 204261N*	2.824	3.427	6.016	-	6.016	3.946	2.262	4.122	3.969	9.408	37.390
• APAF: BA06: ATA000: *JSF Initial Spares, PE 0207142F, BP16*	163.151	89.050	236.418	-	236.418	270.431	278.552	380.165	457.051	Continuing	Continuing
• APN: BA06:ATA000: *Initial Spares (CV), PE 0204146N, BP0605*	26.089	42.060	-	-	-	28.200	136.134	101.997	201.771	Continuing	Continuing
• APN: BA06: ATA000: *Initial Spares (STOVL), PE 0204146M, BP0605*	91.752	41.707	85.194	-	85.194	111.105	65.194	153.914	69.699	Continuing	Continuing
• MILCON: BA01: PE 0207142F: *JSF Military Construction*	13.513	56.000	66.700	-	66.700	50.400	14.650	135.850	-	Continuing	Continuing
• USN MILCON: BA01: *USN JSF Military Construction*	117.600	209.000	320.500	-	320.500	151.700	48.100	-	169.700	660.900	2,319.500
• APAF: BA05: ATA000: *JSF Modifications, PE 0207142F, BP11*	80.715	126.777	187.646	-	187.646	221.826	250.178	254.903	262.733	Continuing	Continuing
• OPAF: BA01: 821800: *Joint Strike Fighter, PE 0207142F*	0.338	1.431	4.463	-	4.463	3.858	2.333	2.374	2.415	Continuing	Continuing
• APN: BA05: BP0593: *Modifications (CV), PE 204146N*	-	29.950	20.502	-	20.502	37.336	47.953	51.409	53.388	Continuing	Continuing
• APN: BA05: BP0592: *Modifications (STOVL), PE 204146M*	-	111.158	285.968	-	285.968	278.596	173.231	178.035	181.759	Continuing	Continuing
• RDTEN: BA05:PE 604800N: *F-35C Follow-on Development (CV), BPAC 3353*	-	-	14.196	-	14.196	59.116	123.467	157.922	170.015	Continuing	Continuing
• RDT&EN:BA05: PE 604800N: *F-35C Sustainment/Capability Enhancements (CV),BPAC 3352*	-	14.992	16.997	-	16.997	16.977	-	-	-	-	38.968
• RDT&EN: BA05: PE 604800M: *F-35B Sustainment/*	-	14.904	11.980	-	11.980	11.952	-	-	-	-	38.838

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207142F / *F-35 Squadrons*	**Project (Number/Name)** 675346 / *F-35*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Capability Enhancements (STOVL),BPAC 3350 • RDTE: BA07: PE 604800M: *F-35B Follow-on Development (STOVL), BPAC 3351*	-	-	13.973	-	13.973	59.885	120.644	157.796	168.923	Continuing	Continuing

Remarks

This is a joint program with no executive service. Service Acquisition Executive (SAE) authority alternates between the Department of the Navy and the Department of the Air Force and currently resides with the Navy. Program Element 0604800N/0604800M continues USN development efforts budgeted in 0603800N prior to FY2002. The United Kingdom and other International countries are participants in the SDD phase of JSF.

Note: The USAF/USN/USMC PROCUREMENT lines include Aircraft Procurement and Advanced Procurement only. Initial Spares and Repair Parts for all Services are reflected in separate lines. International Partner Funding includes funds provided under the Italy and Netherlands Bilateral agreements.

RELATED RDT&E: Funding prior to F-35 SDD (FY94-FY01): USN PE 0603800N $1,950,617; USAF PE 0603800F $1,907,352; DARPA PE 0603800E $118,056; and International Partner contributions of $253.921 for a total of $4,229,896.

D. Acquisition Strategy

To enable the ability to adjust to potential discrepancies discovered during SDD Block 3 Test and Evaluation, the engineering and development planning support for FoD will be procured under a cost type contract. A fee provision will be used to target and motivate contractor performance. A separate Basic Ordering Agreement or Indefinite Quantity/Indefinite Delivery contract is planned to provide a long term approach to upgrading and maintaining laboratories and test aircraft. Both Development Support and Management Services will primarily use CPFF Delivery Orders.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 675346 / *F-35*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Requirements Analysis, Systems Engineering and Risk Reduction	SS/CPFF	Lockheed Martin : Ft Worth, TX	0.000	-		-		48.623	Feb 2015	-		48.623	Continuing	Continuing	107.984
		Subtotal	0.000	-		-		48.623		-		48.623	-	-	107.984

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical and Analytic Support LM	SS/CPFF	Lockheed Martin : Ft Worth, TX	0.000	-		3.000		-		-		-	Continuing	Continuing	10.062
		Subtotal	0.000	-		3.000		-		-		-	-	-	10.062

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Laboratory and Test Aircraft Infrastructure	TBD	Lockheed Martin : Ft Worth, TX	0.000	-		-		2.100	Jul 2015	-		2.100	Continuing	Continuing	-
		Subtotal	0.000	-		-		2.100		-		2.100	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support and Milestone Preparations	TBD	Various : Various,	0.000	-		-		4.177	Dec 2014	-		4.177	Continuing	Continuing	-
PMA	Various	Various : Various,	0.000	-		-		1.320	Dec 2014	-		1.320	Continuing	Continuing	-
		Subtotal	0.000	-		-		5.497		-		5.497	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 675346 / *F-35*	

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Subtotals	0.000	-		3.000		56.220		-		56.220	-	-	-
Other Service Program Funding Adjustment	0.000	-		-		28.169		-		28.169	-	28.169	-
Project Cost Totals	0.000	-		3.000		28.051		-		28.051	-	-	-

Remarks

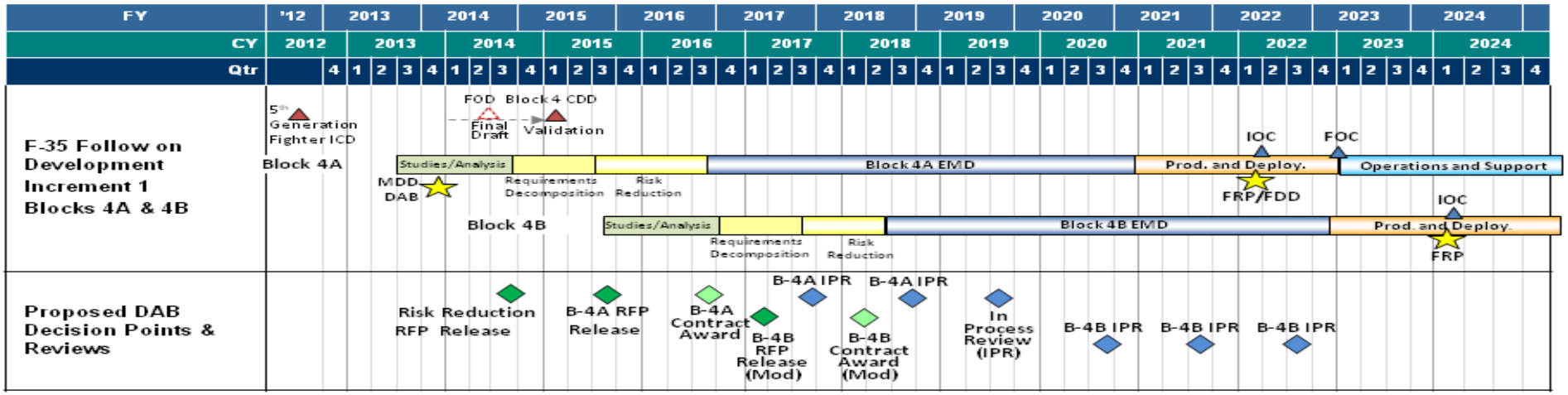
Note: The Project information shown here reflects USN, USMC, USAF and International Partner funding total for each contract. By agreement, USN and USMC funding shares are approximately equal and when combined are equal to the USAF share. Partner funding share is based upon future aircraft procurement numbers updated annually in accordance with the Production, Sustainment, Follow-on Development Memorandum of Agreement. FY 2013 Risk Reduction conducted with Partner funding to maintain planned schedule for integration and delivery of Block 4 Capabilities. Funding was contributed by Partner nations in anticipation of U.S. funding in FY 2014.

F-35 FoD Includes:
USAF PE 0207142F BPAC 675346
FY13: USN PE 0604800N Project Unit 2261
FY14: USN PE 0604800N Project Unit 3353
FY13: USMC PE 0604800M Project Unit 2262
FY14: USMC PE 0604800M Project Unit 3351

F-35 DCA Includes:
USAF PE 0207142F BPAC 676011
USN N/A
USMC N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207142F / *F-35 Squadrons*	**Project (Number/Name)** 675346 / *F-35*

FoD Top Level Planning Schedule



DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

5 February 2014

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207142F / *F-35 Squadrons*	**Project (Number/Name)** 675346 / *F-35*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Block 4A: CDD Development	3	2014	2	2015
Block 4A: Requirements Decomposition	3	2014	2	2015
Block 4A: Risk Reduction	2	2015	3	2016
Block 4A: Engineering and Manufacturing Development	3	2016	1	2019
Block 4B: Studies and Analysis	3	2015	3	2016
Block 4B: Requirements Decomposition	3	2016	3	2017
Block 4B: Risk Reduction	3	2017	3	2018
Block 4B: Engineering and Manufacturing Development	3	2018	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 676011 / *JSF DUAL CAPABLE AIRCRAFT*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
676011: *JSF DUAL CAPABLE AIRCRAFT*	9.682	-	-	15.615	-	15.615	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

NOTE:
F-35 FoD Includes:
USAF:PE 0207142F BPAC 675346
USN: FY13 PE 0604800N Project Unit 2261
USN: FY14 PE 0604800N Project Unit 3353
USMC: FY13 PE 0604800M Project Unit 2262
USMC: FY14 PE 0604800M Project Unit 3351

F-35 DCA Includes:
USAF PE 0207142F BPAC 676011
USN N/A
USMC N/A

In FY 2015, BPAC 676011, F-35 DCA includes new start efforts.

A. Mission Description and Budget Item Justification

The F-35 Lightning II Fighter program is developing a family of highly common, affordable, next generation, multi-role aircraft to meet the needs of the USMC, USN, USAF and international partners. The three variants are the F-35A Conventional Takeoff and Landing (CTOL); F-35B Short Takeoff and Vertical Landing (STOVL); and the F-35C Carrier Variant (CV). Maximum commonality among the variants, consistent with National Disclosure Policy, will minimize life cycle costs. FY2015 continues development and testing of the F-35. As the initial capabilities are being delivered from the System Development and Demonstration (SDD) program, planning for Follow-on Development (FoD) continues. Capability requirements are being matured and FoD planning continues based upon the approved Fifth Generation Fighter Modernization Initial Capabilities Document (ICD), an approved Electronic Warfare ICD, and the results of an OSD Tiger Team Review. FY14 F-35 FoD activity includes drafting of Follow-on Development Increment 1 Capability Development Document (CDD) and further risk reduction. Follow-on Development will provide capability enhancements, required systems upgrades and cost improvements through an incremental acquisition approach.

Additionally, the JSF ORD calls for the F-35A (CTOL) Variant Air Vehicle to have the capabilities and provisions for Dual Capable Aircraft (DCA) operations in the first post SDD block upgrade. DCA refers to the capability to carry and deliver conventional and non-conventional weapons. DCA operation for the F-35A is internal carriage

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207142F / *F-35 Squadrons*	**Project (Number/Name)** 676011 / *JSF DUAL CAPABLE AIRCRAFT*

of two B-61s. Due to extensive certification requirements, the DCA capability planning and design will begin in Block 4A and continue through testing and certification in Block 4B.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Dual Capable Aircraft (DCA)(F-35 JSF)	-	-	15.615
Description: This effort provides for the assessment of Dual Capable Aircraft (DCA) weapon integration impacts on the Joint Strike Fighter (JSF) aircraft, early in the weapon design phase. It identifies and avoids potential technical and cost risks, as well as defining the integration and certification trade-space to field the DCA capability with the B61 weapon. This effort also supports follow-on risk reduction efforts that will ensure future integration alignment with the first feasible post SDD block upgrade, and is expected to include full integration efforts pending Service decisions. ***FY 2015 Plans:*** Initiate risk reduction efforts required to integrate dual-capability on F-35A (CTOL). Developmental alignment with post SDD block upgrades will be determined based on analysis performed in FY12 and FY13.			
Accomplishments/Planned Programs Subtotals	-	-	15.615

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA05: PE 0604800F: *JSF SDD, BPAC 653831*	1,115.712	612.254	530.444	-	530.444	517.596	327.100	115.413	5.250	-	22,011.826
• RDTE: BA04: PE 0604800F: *JSF SDD, BPAC 653831*	-	-	4.976	-	4.976	4.979	-	-	-	-	-
• RDTEN: BA05: PE 604800N: *JSD SDD (CV), BPAC 2261*	624.872	424.253	485.263	-	485.263	537.152	402.492	18.485	1.083	-	19,848.894
• RDTEN: BA05: PE 604800M: *JSD SDD (STOVL), BPAC 2262*	639.059	399.323	487.068	-	487.068	525.008	393.609	84.467	10.892	-	3,703.262
• APN: BA01:BP0152C: *JSF Advance Procurement (STOVL), PE 204146M*	98.061	103.195	143.885	-	143.885	203.057	226.014	136.732	139.330	3,180.220	4,971.884
• RDTEN:BA05: PE 604800N: *USRL, BPAC 3194*	17.477	-	-	-	-	-	-	-	-	-	144.769

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 676011 / *JSF DUAL CAPABLE AIRCRAFT*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• International R&D: *International R&D (SDD/FOD)*	163.272	21.965	56.139	-	56.139	87.641	124.219	80.486	54.624	Continuing	Continuing
• APAF: BA01: ATA000: *JSF CTOL, PE 207142F, BP10*	2,532.184	2,889.602	3,553.046	-	3,553.046	5,138.558	5,262.325	5,943.415	5,770.781	148,305.400	190,999.096
• APAF:BA01: ATA000: *JSF CTOL Advance Procurement, PE 207142F, BP10 AP*	293.400	339.533	291.880	-	291.880	438.808	528.560	522.180	497.720	18,087.420	22,248.588
• APN: BA01: BP0147: *JSF (CV), PE 204146N*	808.000	1,028.415	610.652	-	610.652	629.916	1,135.967	1,394.026	1,974.142	32,609.960	49,791.131
• APN: BA01: BP0147C: *JSF Advance Procurement (CV), PE 204146N*	30.699	79.016	29.400	-	29.400	73.800	123.000	196.768	246.000	3,686.760	5,729.873
• APN: BA01: BP0152: *JSF (STOVL), PE 204146M*	1,094.421	1,176.498	1,200.410	-	1,200.410	1,451.916	2,061.990	2,726.113	2,810.778	28,166.110	42,383.663
• International Production: *JSF International Production*	148.772	18.030	6.430	-	6.430	2.600	8.080	3.040	-	-	-
• OPAF: BA01: 821800: *Joint Strike Fighter, PE 0207142F*	0.338	1.431	4.463	-	4.463	3.858	2.333	2.374	2.415	Continuing	Continuing
• OPN: BA04: BP4265: *JSF Other Procurement, PE 204261N*	-	-	-	-	-	-	-	-	-	-	5.665
• OPN: BA03: BP4267: *JSF Logistics Information System (ALIS),PE 204261N*	2.824	3.427	6.016	-	6.016	3.946	2.262	4.122	3.969	9.408	29.723
• APAF: BA06: PE 207142F, BP16: *JSF Initial Spares*	163.151	89.050	236.418	-	236.418	270.431	278.552	380.165	457.051	Continuing	Continuing
• APN: BA06: PE 204146N, BP0605: *Initial Spares (CV)*	26.089	42.060	28.200	-	28.200	28.200	136.134	101.997	201.771	Continuing	Continuing
• APN: BA06: PE 204146M, BP0605: *Initial Spares (STOVL)*	91.752	41.707	85.194	-	85.194	111.105	65.194	153.914	69.699	Continuing	Continuing
• MILCON: BA01: PE 207142F: *JSF Military Construction*	13.513	56.000	66.700	-	66.700	50.400	14.650	135.850	-	Continuing	Continuing
• USN MILCON: BA01: *USN JSF MILCON*	117.600	209.000	320.500	-	320.500	151.700	48.100	-	169.700	660.900	2,319.500

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 676011 / *JSF DUAL CAPABLE AIRCRAFT*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: PE 20742F, BP11: *JSF Modifications*	80.715	126.777	187.646	-	187.646	221.826	250.178	254.903	262.733	Continuing	Continuing
• APN: BA05: BP0593: *Modifications (CV),PE 204146N*	-	29.950	20.502	-	20.502	37.336	47.953	51.409	53.388	Continuing	Continuing
• APN: BA05: BP0592: *Modifications (STOVL), PE 204146M*	1,094.421	1,176.498	1,200.410	-	1,200.410	1,451.916	2,061.990	2,726.113	2,810.778	28,166.110	42,383.663
• RDTE: BA07: PE 207142F: *JSF Follow-on Development (FoD), BPAC 675346*	-	3.000	28.051	-	28.051	117.812	244.464	313.398	336.942	Continuing	Continuing
• RDTE:BA05: PE 0604800F: *JSF Deployability and Suitability Enhancements, BPAC 653832*	14.167	16.200	32.593	-	32.593	29.657	-	-	-	-	-
• RDTEN: BA05: PE 604800N: *F-35C Follow-on Development (CV),BPAC 3353*	-	-	14.196	-	14.196	59.116	123.467	157.922	170.015	Continuing	Continuing
• RDT&EN: BA05: PE 604800N: *F-35C Sustainment/Capability Enhancements (CV), BPAC 3352*	-	14.992	16.997	-	16.997	16.977	-	-	-	-	48.966
• RDTE: BA05: PE 604800M: *F-35B Follow-on Development (STOVL), BPAC 3351*	-	-	13.973	-	13.973	59.885	120.644	157.796	168.923	Continuing	Continuing
• RDT&EN: BA05: PE 604800M: *F-35B Sustainment/ Capability Enhancements (STOVL), BPAC 3350*	-	14.904	11.980	-	11.980	11.952	-	-	-	-	38.836

Remarks

This is a joint program with no executive service. Service Acquisition Executive (SAE) authority alternates between the Department of the Navy and the Department of the Air Force and currently resides with the Navy. Program Element 0604800N/0604800M continues USN development efforts budgeted in 0603800N prior to FY2002. The United Kingdom and other International countries are participants in the SDD phase of JSF.

Note: The USAF/USN/USMC PROCUREMENT lines include Aircraft Procurement and Advanced Procurement only. Initial Spares and Repair Parts for all Services are reflected in separate lines. International Partner Funding includes funds provided under the Italy and Netherlands Bilateral agreements.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207142F / *F-35 Squadrons*	**Project (Number/Name)** 676011 / *JSF DUAL CAPABLE AIRCRAFT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost

RELATED RDT&E: Funding prior to JSF SDD (FY94-FY01): USN PE 0603800N $1,950,617; USAF PE 0603800F $1,907,352; DARPA PE 0603800E $118,056; and International Partner contributions of $253.921 for a total of $4,229,896.

D. Acquisition Strategy

The DCA effort will be procured via a cost type contract. It is anticipated that fee provisions will be used to target and motivate the contractor performance.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 676011 / *JSF DUAL CAPABLE AIRCRAFT*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Lockheed Martin - DCA Integration	SS/CPFF	Lockheed Martin : Ft. Worth, TX	9.682	-		-		15.615	Mar 2015	-		15.615	Continuing	Continuing	19.682
		Subtotal	9.682	-		-		15.615		-		15.615	-	-	19.682

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.682	-		-		15.615		-		15.615	-	-	19.682

Remarks

F-35 FoD Includes:
USAF:PE 0207142F BPAC 675346
USN: FY13 PE 0604800N Project Unit 2261
USN: FY14 PE 0604800N Project Unit 3353
USMC: FY13 PE 0604800M Project Unit 2262

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207142F / *F-35 Squadrons*	Project (Number/Name) 676011 / *JSF DUAL CAPABLE AIRCRAFT*	

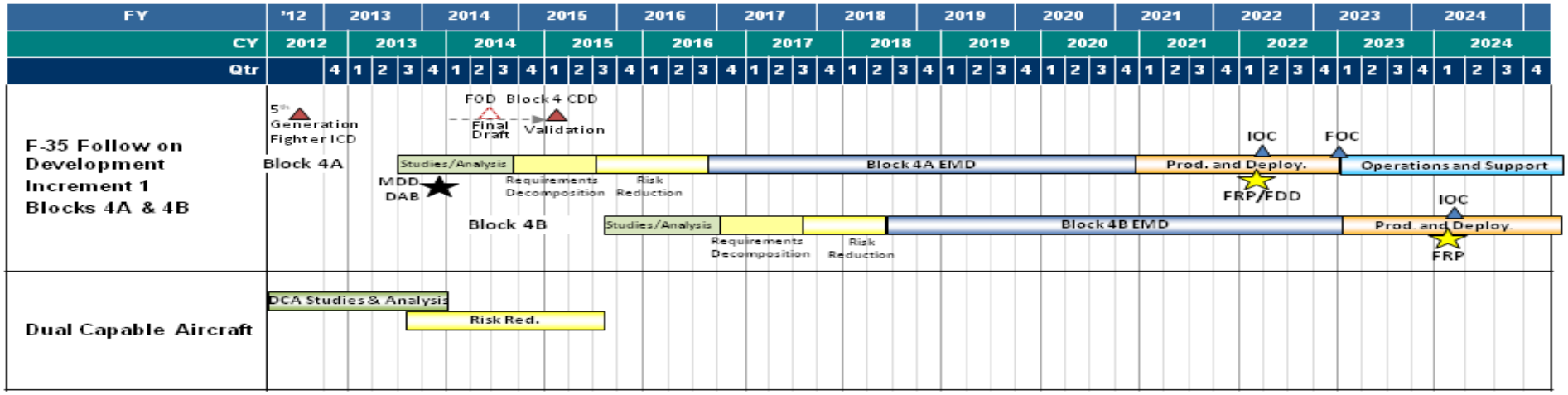
	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract

USMC: FY14 PE 0604800M Project Unit 3351

F-35 DCA Includes:
USAF PE 0207142F BPAC 676011
USN N/A
USMC N/A

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207142F / *F-35 Squadrons*	**Project (Number/Name)** 676011 / *JSF DUAL CAPABLE AIRCRAFT*

FoD/DCA Top Level Planning Schedule



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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207142F / *F-35 Squadrons*	**Project (Number/Name)** 676011 / *JSF DUAL CAPABLE AIRCRAFT*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DCA Risk Reduction	2	2013	3	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207161F / *Tactical AIM Missiles*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	48.942	5.972	12.760	29.739	-	29.739	46.133	51.765	13.106	13.356	4.435	226.208
674132: *AIM-9 Product Improvement*	48.942	5.972	12.760	29.739	-	29.739	46.133	51.765	13.106	13.356	4.435	226.208
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
MDAP/MAIS Code: 442												

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The AIM-9X Sidewinder short-range air-to-air missile is a long-term evolution of the AIM-9 series of fielded missiles. The AIM-9X missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile (AMRAAM). Air superiority in the short range air-to-air missile arena is essential and includes first-shot, first-kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuse, rocket motor, and warhead). Anti-Tamper features have been incorporated to protect improvements inherent in this design.

AIM-9X is a Post Milestone III, Acquisition Category 1C (ACAT 1C) joint-service program with Navy lead. AIM-9X Block I concluded in FY 2011 and all funding/quantity data in the documents are associated with Block II activities.

This budget line item will fund the development, test and integration of software updates to the missile, insensitive munitions improvements and aircraft platform integration, to ensure these capabilities perform in accordance with established requirements.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207161F / *Tactical AIM Missiles*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	8.234	15.460	30.110	-	30.110
Current President's Budget	5.972	12.760	29.739	-	29.739
Total Adjustments	-2.262	-2.700	-0.371	-	-0.371
• Congressional General Reductions	-0.009	-			
• Congressional Directed Reductions	-1.600	-2.700			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.108	-			
• Other Adjustments	-0.545	-	-0.371	-	-0.371

Change Summary Explanation

FY13 reduction of -$1.600M for congressional mark for Congressional Directed reduction
FY13 reduction of -$.545M for sequestration
FY14 reduction of -$2.700M for Congressional directed reduction

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Air Intercept Missile - 9X, Product Development	5.972	11.230	25.481

Description: Continuation of Primary Hardware Development/Pre-Planned Product Improvement efforts for the AIM-9X. Includes Systems Engineering/Program management, as well as associated Governmental and contractor support required to ensure AIM-9X missile integration with threshhold aircraft platforms. Includes efforts to redesign missile components in order to resolve Block II / Block III common component obsolescence, as well as to comply with the Insensitive Munitions (IM) requirements as established by Joint Requirements Oversight Council memo dated 11 February 2009.

FY 2013 Accomplishments:
Continued support of Block II integration and Operational Test (OT) anomaly resolution. Began Software Algorithm and Code Development on version 9.4 (v9.4) Block II missile software. Studied IM alternatives and risk reduction methods.

FY 2014 Plans:
Continue support of Block II integration and OT anomaly resolution. Continue development of v9.4 Block II software and integration efforts with threshold aircraft platforms including improvements associated with the F-15C/D suite 9 OFP to utilize full capability of the Block II missile. Continue study on IM alternatives and risk reduction methods.

FY 2015 Plans:

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207161F / *Tactical AIM Missiles*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue support of Block II integration and OT anomaly resolution. Continue development of v9.4 Block II software and integration efforts with threshold aircraft platforms including improvements including improvements associated with the F-15C/D suite 9 OFP to utilize full capability of the Block II missile. Continue study on IM alternatives and risk reduction methods.			
Title: Air Intercept Missile - 9X, Test and Evaluation ***Description:*** Funding required for Test & Evaluation required to ensure the AIM-9X missile integration with threshhold aircraft platforms. ***FY 2013 Accomplishments:*** Continued Block II Operational Testing (OT-C1). ***FY 2014 Plans:*** Resume/continue OT-C1 for Block II. Begin Developmental Test (DT-D1) of v9.4 Block II software well as improvements associated with the F-15C/D suite 9 OFP to utilize full capability of the Block II missile. ***FY 2015 Plans:*** Complete OT-C1 and await final IOT&E and BLRIP reports. Continue DT-D1, and begin Integrated Testing (IT-D1), of v9.4 Block II software including improvements associated with the F-15C/D suite 9 OFP to utilize full capability of the Block II missile.	-	1.530	4.258
Accomplishments/Planned Programs Subtotals	5.972	12.760	29.739

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• MPAF: BA02: Line Item # M09HAI: *Sidewinder (AIM-9X) (BP-20)*	72.242	100.590	132.995	-	132.995	156.234	181.949	114.384	116.498	969.566	2,009.588
• MPAF: BA04: Line Item # 000999: *Replen Spares, USAF*	8.854	10.728	10.720	-	10.720	10.933	11.143	11.347	11.556	Continuing	Continuing
• MPAF: BA04: Line Item # 000999: *Inital Spares, USAF*	1.593	1.650	1.717	-	1.717	1.750	1.784	1.816	1.850	48.532	63.723
• RDT&E,N: BA07: PE 0207161N: *Tactical AIM Missile, USN*	18.889	15.453	47.258	-	47.258	85.567	112.077	88.564	100.801	Continuing	Continuing
• WPN: BA07: PE 0207162N, Sidewind...: *Sidewinder, USN*	69.032	101.689	73.928	-	73.928	97.245	105.109	106.805	109.109	786.351	1,922.177

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207161F / *Tactical AIM Missiles*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost

Remarks

Congressional language directed the program to report as a missile procurement, starting in FY2002, and not as a missile modification.

E. Acquisition Strategy

In Jun 2011 the Milestone Decision Authority (MDA) established the AIM-9X Block II missile program for entry at Milestone C and Low Rate Initial Production (LRIP). The 2366 A/B certification and Acquisition Program Baseline for AIM-9X Block II was signed 23 Dec 2011 and the Block I program was terminated. The LRIP-1 (Lot 11) contract was awarded in Sep 2011, LRIP-2 (Lot 12) was awarded in Dec 2011 and LRIP-3 was awarded August 2013. Pending MDA approval the program will award LRIP-4 in FY 2014. Full Rate Production (FRP) decision is planned for FY 2015.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207161F / *Tactical AIM Missiles*	Project (Number/Name) 674132 / *AIM-9 Product Improvement*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RMS Software/OFP Upgrade	SS/CPFF	RMS : Tucson, AZ	20.866	4.569	Jan 2013	5.699	Jan 2014	12.391	Jan 2015	-		12.391	86.858	130.383	130.383
Munitions Improvement Study (RG)	SS/CPFF	RMS : Tucson, AZ	0.000	-		1.695	Jan 2014	2.170	Jan 2015	-		2.170	12.808	16.673	16.673
Munitions Improvement Study (USG)	MIPR	NAWC WD : China Lake, CA	0.500	1.403	Dec 2012	1.695	Jan 2014	2.170	Jan 2015	-		2.170	12.811	18.579	18.579
Aircraft Integration	SS/CPFF	Boeing : St. Louis, MO	0.000	-		1.600	Dec 2013	8.200	Dec 2014	-		8.200	4.900	14.700	14.700
RMS P3I Contract	Various	Various : ,	9.381	-		-		-		-		-	-	9.381	9.381
		Subtotal	30.747	5.972		10.689		24.931		-		24.931	117.377	189.716	189.716

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DT&E/OT&E for P3I	PO	Various : Various,	14.967	-		1.530	Mar 2014	1.558	Mar 2015	-		1.558	6.516	24.571	24.571
DT&E/OT&E for F-15C/D	PO	Various : Various,	0.000	-		-		2.700	Mar 2015	-		2.700	2.600	5.300	5.300
		Subtotal	14.967	-		1.530		4.258		-		4.258	9.116	29.871	29.871

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA	MIPR	PMA-259 : Patuxent River, MD	3.228	-	Jan 1901	0.541	Jan 2014	0.550	Jan 2015	-		0.550	2.302	6.621	6.621

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207161F / *Tactical AIM Missiles*	Project (Number/Name) 674132 / *AIM-9 Product Improvement*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	3.228	-		0.541		0.550		-		0.550	2.302	6.621	6.621

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	48.942	5.972		12.760		29.739		-		29.739	128.795	226.208	226.208

Remarks

Funding in FY11 and out is for the Block II program only. The AIM-9X Block I program costs for FY11 and prior are $233.583M. The AIM-9X Block II program costs for FY12 and prior are $48,942M.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207161F / *Tactical AIM Missiles*	**Project (Number/Name)** 674132 / *AIM-9 Product Improvement*

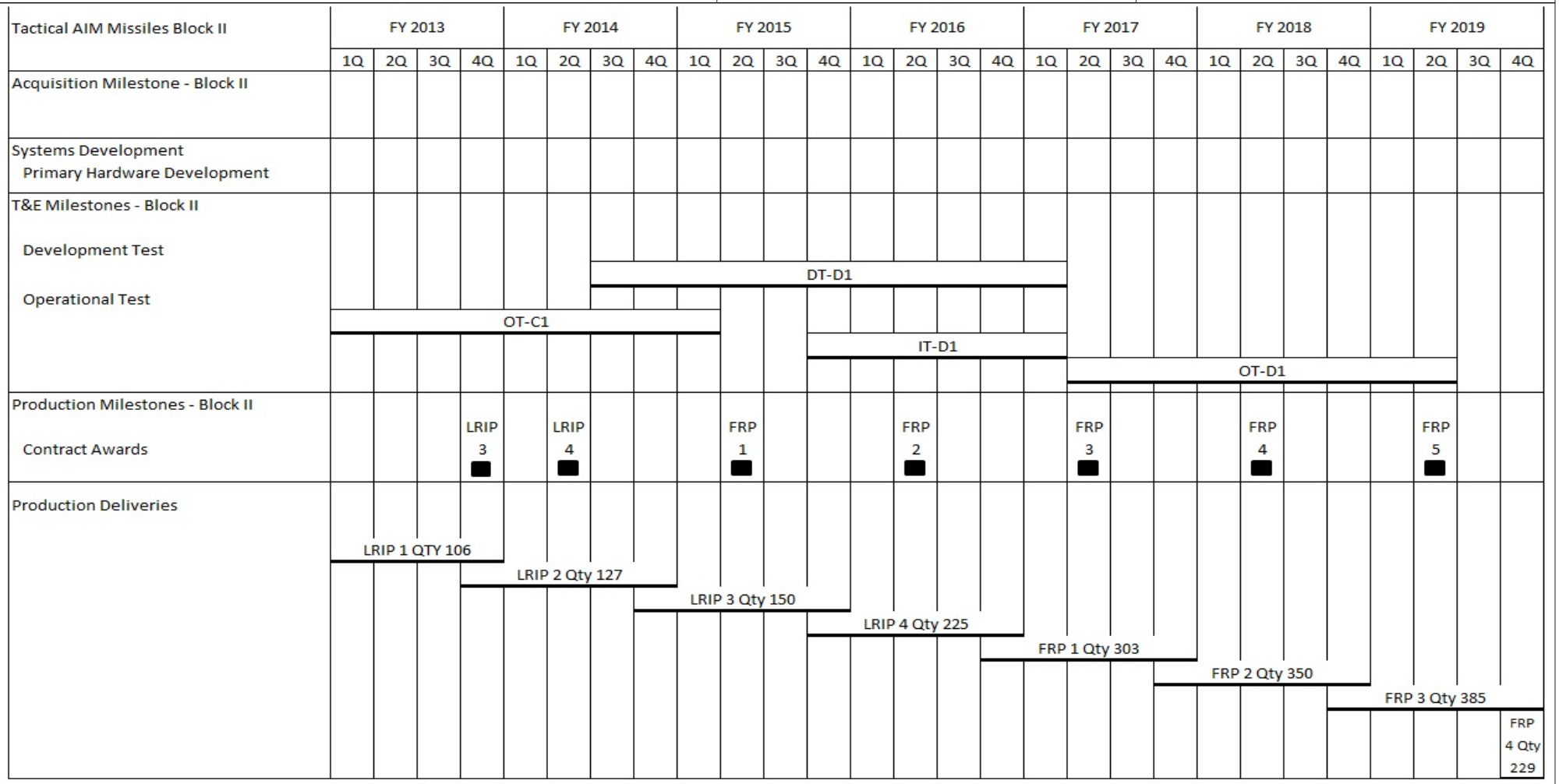


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207161F / *Tactical AIM Missiles*	**Project (Number/Name)** 674132 / *AIM-9 Product Improvement*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
T&E Milestones: Block II Development Test: v9.3 Operational Test (OT-C1)	1	2013	1	2015
T&E Milestones: Block II Development Test: v9.4 Development Test (DT-D1)	3	2014	1	2017
T&E Milestones: Block II Development Test: v9.4 Integrated Development/Operational Test (IT-D1)	4	2015	1	2017
T&E Milestones: Block II Development Test v9.4 Operational Test (OT-D1)	2	2017	2	2019
Production: Block II Contract Award: Low Rate Initial Production Lot 13 / LRIP 3	4	2013	4	2013
Production: Block II Contract Award: Low Rate Inital Production (LRIP 4)	2	2014	2	2014
Production: Block II Contract Award: Full Rate Production (FRP 1)	2	2015	2	2015
Production: Block II Contract Award: Full Rate Production (FRP 2)	2	2016	2	2016
Production: Block II Contract Award: Full Rate Production (FRP 3)	2	2017	2	2017
Production: Block II Contract Award: Full Rate Productin (FRP 4)	2	2018	2	2018
Production: Deliveries: Low Rate Initial Production Lot 11 / LRIP 1	1	2013	4	2013
Production: Deliveries: Low Rate Initial Production Lot 12 / LRIP 2	4	2013	4	2014
Production: Deliveries: Low Rate Initial Production Lot 13 / LRIP 3	4	2014	4	2015
Production: Deliveries: Low Rate Initial Production Lot 14 / LRIP 4	4	2015	4	2016
Production: Deliveries: Full Rate Production Lot 15 / FRP 1	4	2016	4	2017
Production: Deliveries: Full Rate Production Lot 16 / FRP 2	4	2017	4	2018
Production: Deliveries: Full Rate Production Lot 17 / FRP 3	4	2018	4	2018

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207163F / *Advanced Medium Range Air-to-Air Missile (AMRAAM)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	242.669	68.656	70.614	82.195	-	82.195	46.467	55.884	62.123	66.289	106.600	801.497
673777: *AMRAAM*	242.669	68.656	70.614	82.195	-	82.195	46.467	55.884	62.123	66.289	106.600	801.497
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
MDAP/MAIS Code: 185												

The FY 2015 OCO Request will be submitted at a later date.

Note

A. Mission Description and Budget Item Justification

The Air Force and Navy continue to develop improvements to the Advanced Medium Range Air-to-Air Missile (AMRAAM) to counter existing and emerging air vehicle threats operating at high or low altitude, and having advanced Electronic Attack (EA) capabilities. The development program also enables AMRAAM to be compatible with advanced fighters, enhances AMRAAM capability and operational flexibility against current and projected threats, incorporates high payoff technology development, performs risk reduction activities and investigates new variants and/or alternate missions which may use AMRAAM attributes. The latest AMRAAM variant, the AIM-120D, delivers improved performance via Global Positioning System (GPS)-aided navigation, a two-way datalink capability for enhanced aircrew survivability and improved network compatibility, and incorporates new guidance software which improves kinematic performance and weapon effectiveness. The AIM-120D Operational Test Readiness Review was successfully completed in May 2012 and the program is in dedicated Operational Testing (OT). The aircraft integration program maintains compatibility/performance of the missile with changes occurring on the F/A-18E/F, F-15C/D/E, F-16, F-22A, and F-18 C/D platforms. To keep the existing inventory as effective as possible, the Air Force and Navy also develop, test, and field improvements that are implemented via software upgrades reprogrammed into fielded AMRAAMs, and/or hardware upgrades inserted into production units. AMRAAM is a joint Air Force/Navy, Acquisition Category IC (ACAT IC) program with Air Force as lead service.

This program is in Budget Activity 7-Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207163F / *Advanced Medium Range Air-to-Air Missile (AMRAAM)*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	87.041	84.172	83.222	-	83.222
Current President's Budget	68.656	70.614	82.195	-	82.195
Total Adjustments	-18.385	-13.558	-1.027	-	-1.027
• Congressional General Reductions	-0.115	-			
• Congressional Directed Reductions	-	-13.558			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-9.000	-			
• SBIR/STTR Transfer	-2.175	-			
• Other Adjustments	-7.095	-	-1.027	-	-1.027

Change Summary Explanation

FY2013 reduction of -$7.095M for Sequestration
FY2013 other reduction of -$9.000M for higher Air Force priorities
FY2014 reduction of -$13.558M for congressional directed program decrease.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: System Improvement Program (SIP)/Software Upgrade Program (SWUP)/Electronic Protection Improvement Program (EPIP)	42.196	35.916	40.661
Description: Provide software upgrades/system improvements/electronic protection improvements (SWUP/SIP/EPIP)			
FY 2013 Accomplishments: 1. AIM-120C SWUP: Matured AIM-120C missile software candidates to a Preliminary Design Review (PDR) level. Candidates provide improvements to tactical missile software and enhance the fidelity of simulation performance predictions. 2. EPIP Basic and Advanced: Completed EPIP Basic Integrated Test (IT) live fire program and a Functional Configuration Audit (FCA) for AIM-120C-7 configuration and released missile software for dedicated OT. Completed 2 of 3 EPIP Basic AIM-120C-3 through C-6 IT live fire events. Continued Advanced EPIP implementation effort to address advanced threats in AIM-120C-7 missile software and began DT flight test. Completed upgrades to China Lake Hardware-in-the-Loop (HWIL) facility to support the Advanced EPIP program.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207163F / *Advanced Medium Range Air-to-Air Missile (AMRAAM)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
3. AIM-120D SIP: Continued candidate evaluation, selection and design activities including lab and captive flight tests activities for system performance upgrades. Completed SIP-1 Critical Design Review (CDR) and released software for DT flight test. Continued studies of additional software improvements to keep pace with evolving threats and parts obsolescence. ***FY 2014 Plans:*** 1. AIM-120C SWUP: Continues maturing AIM-120C missile software candidates, target models and simulation tools. Candidates provide improvements to tactical missile software and enhance the fidelity of simulation performance predictions. 2. EPIP Basic and Advanced: Completes EPIP Basic IT live fire program and a Functional Configuration Audit (FCA) for AIM-120C-3/4/5/6 configurations and releases missile software for dedicated OT. Continues Advanced EPIP implementation effort for AIM-120C-7 to address advanced threats. Completes CDR for EPIP Advanced software Tape 1. Continues development efforts for Advanced EPIP software Tape 2. 3. AIM-120D SIP: Continues candidate evaluation, selection and design activities including lab and captive flight test activities for potential system performance upgrades. Continues SIP-1 software development phase and awards SIP-2 software development contract. Continues studies of additional software improvements to keep pace with evolving threats and parts obsolescence. ***FY 2015 Plans:*** 1. AIM-120C SWUP: Continues maturing AIM-120C missile software candidates, target models and simulation tools. Candidates provide improvements to tactical missile software and enhance the fidelity of simulation performance predictions. 2. EPIP Advanced: Continues EPIP Advanced software development of Tapes 1 and 2 as well as simulation improvements to address advanced threats. Completes EPIP Advanced software Tape 1 Formal Qualification Testing (FQT) and releases software for IT live fire program. Completes CDR for EPIP Advanced software Tape 2 and continues development. 3. AIM-120D SIP: Continues candidate evaluation, selection and design activities including lab and captive flight test activities for potential system performance upgrades. Completes SIP-1 FCA and Operational Test Readiness Review (OTRR) of tactical missile software. Completes SIP-2 PDR and continues software development phase. Continues studies of additional software improvements to keep pace with evolving threats and parts obsolescence.			
Title: Test and Evaluation ***Description:*** Continue test and evaluation; Provides support to DT/OT. ***FY 2013 Accomplishments:***	7.156	12.805	16.594

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207163F / *Advanced Medium Range Air-to-Air Missile (AMRAAM)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continued dedicated AIM-120D OT on F/A-18E/F and F-15C/D. Continued infrastructure investments to support AIM-120D OT, SIP, SWUP and EPIP activities. Completed EPIP Basic AIM-120C-7 IT live fire program. Began EPIP Basic AIM-120C-7 dedicated OT flight test program. Completed 2 of 3 EPIP Basic AIM-120C-3/4/5/6 IT live fire missions. Started the EPIP Advanced DT captive carry program. ***FY 2014 Plans:*** Completes AIM-120D dedicated OT. Completes the last EPIP Basic IT live fire event for AIM-120C-3/4/5/6 configurations. Completes OT for EPIP Basic AIM-120C-7 & AIM-120C-3/4/5/6 configurations. Continues DT for the EPIP Advanced program. Begins SIP-1 OT. ***FY 2015 Plans:*** Completes SIP-1 OT. Supports initial fielding for AIM-120D on F/A-18 E/F and F-15 C/D. Completes DT captive flight testing and FQT for EPIP Advanced Tape 1 and begins IT live fire tests. Continues DT captive flight tests for EPIP Advanced Tape 2.			
Title: Aircraft Integration ***Description:*** Aircraft Integration - Integrate AIM-120D on multiple aircraft platforms. ***FY 2013 Accomplishments:*** Aircraft Integration - Continued integration and testing of AIM-120D on multiple threshold aircraft platforms. ***FY 2014 Plans:*** Aircraft Integration - Continues integration and testing of AIM-120D on multiple threshold aircraft platforms. ***FY 2015 Plans:*** Aircraft Integration - Continues integration and testing of AIM-120D on multiple threshold aircraft platforms.	19.304	21.893	24.940
Accomplishments/Planned Programs Subtotals	68.656	70.614	82.195

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• MPAF: BA02: Line Item # MAMRA0: *Missile Procurement, Air Force*	201.370	323.015	329.600	-	329.600	367.944	402.093	455.149	460.807	2,078.842	2,338.600
• MPAF: BA04: Line Item # MAMRA0: *Initial Spares/Repair Parts*	0.805	0.893	2.861	-	2.861	2.884	2.903	2.921	2.940	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207163F / *Advanced Medium Range Air-to-Air Missile (AMRAAM)*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• WPN: BA02: Line Item # 2206: *Weapons Procurement, Navy*	86.883	82.529	32.165	-	32.165	194.767	210.749	269.200	315.951	1,695.381	4,923.514
• RDTE: BA07: Line Item # 0981: *RDTE, Navy*	2.669	2.613	10.210	-	10.210	32.549	44.312	46.208	32.348	15.275	300.134

Remarks

E. Acquisition Strategy

The AIM-120D program entered dedicated Operational Testing (OT) in June 2012. This OT phase will continue to the end of 3QTR FY14, with the OT report released within 90 days, followed by initial fielding by the Air Force and Navy. Post-OT missile improvements are underway as part of the AIM-120D upgrade program. The System Improvement Program, Increment 1 (SIP-1) has begun and is expected to field in early FY15. Additional SIP increments are in the planning phase and will further improve the AIM-120D to meet emerging warfighter requirements.

The Electronic Protection Improvement Program (EPIP) is also underway, with the initial capabilities currently in flight testing. EPIP Basic capabilities will field in FY14. The EPIP effort will keep AIM-120C missiles capable against the growing electronic attack threat environment. Additional capabilities (EPIP Advanced) are in the detail design stage with initial fielding projected for FY16.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207163F / *Advanced Medium Range Air-to-Air Missile (AMRAAM)*	**Project (Number/Name)** 673777 / *AMRAAM*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Upgrade Program (SWUP)/System Improvement Program (SIP)/Electronic Protection (EP)	SS/CPFF	Raytheon : Tucson, AZ	108.487	42.464	Mar 2013	40.784	Mar 2014	46.054	Mar 2015	-		46.054	264.469	502.258	TBD
Aircraft Integration	MIPR	Wright-Patterson AFB : Dayton, OH	64.042	18.590	Jun 2013	20.830	Jan 2014	24.940	Jan 2015	-		24.940	18.340	146.742	TBD
		Subtotal	172.529	61.054		61.614		70.994		-		70.994	282.809	649.000	-

Remarks

Cost Plus Fixed Fee (CPFF) software development design implementation contracts include incentive events which must be achieved in order to earn full fixed fee amount.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	WR	Various : Various,	61.278	6.553	Jan 2013	7.801	Jan 2014	9.887	Jan 2015	-		9.887	45.097	130.616	TBD
		Subtotal	61.278	6.553		7.801		9.887		-		9.887	45.097	130.616	-

Remarks

Various = T&E activities take place at numerous locations across the US. Too many activities and locations to list.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207163F / *Advanced Medium Range Air-to-Air Missile (AMRAAM)*	Project (Number/Name) 673777 / *AMRAAM*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various,	8.862	1.049	Jan 2013	1.199	Jan 2014	1.314	Jan 2015	-		1.314	9.457	21.881	TBD
		Subtotal	8.862	1.049		1.199		1.314		-		1.314	9.457	21.881	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	242.669	68.656		70.614		82.195		-		82.195	337.363	801.497	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207163F / *Advanced Medium Range Air-to-Air Missile (AMRAAM)*	**Project (Number/Name)** 673777 / *AMRAAM*

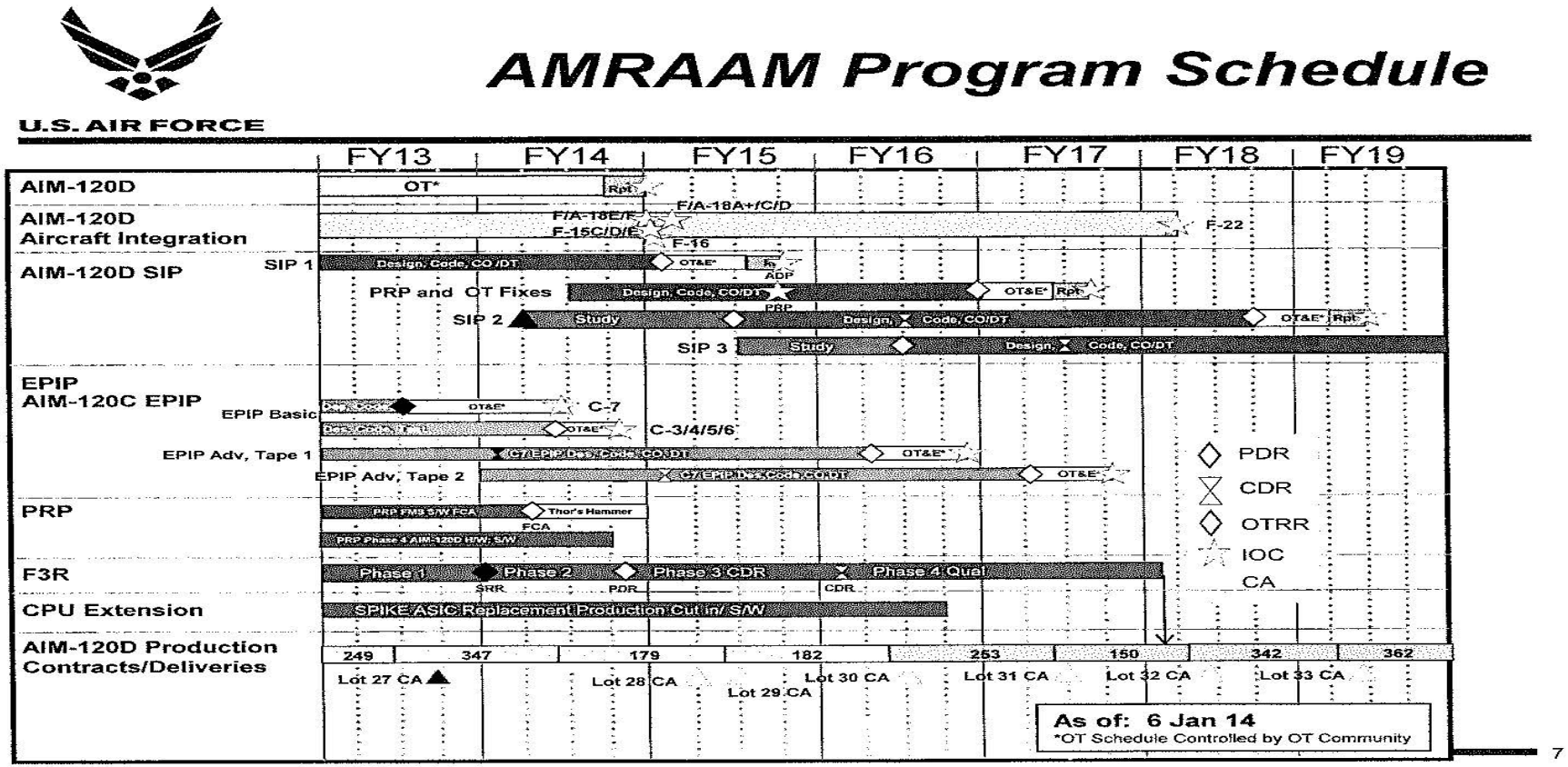


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207163F / *Advanced Medium Range Air-to-Air Missile (AMRAAM)*	**Project (Number/Name)** 673777 / *AMRAAM*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Lot 28 (FY14) contract award	1	2015	1	2015
AIM-120D OT	1	2013	4	2014
Lot 27 (FY13) contract award	3	2013	3	2013
AIM-120D SIP 1 Increment OT	1	2015	3	2015
AIM-120D SIP 1 Increment IOC	4	2015	4	2015
FCA for C-7 EPIP Basic	2	2013	2	2013
FCA for C-3/4/5/6 EPIP Basic	2	2014	2	2014
EPIP Adv Tape 1 CDR	1	2014	1	2014
EPIP Adv Tape 1 FCA	1	2016	1	2016
EPIP Adv Tape 2 CDR	1	2015	1	2015
EPIP Adv Tape 2 FCA	1	2017	1	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207170F / *Joint Helmet Mounted Cueing System (JHMCS)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.428	-	-	-	-	-	-	-	-	-	1.428
675226: *Joint Helmet Mounted Cueing System*	-	1.428	-	-	-	-	-	-	-	-	-	1.428
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

The Joint Helmet Mounted Cueing System (JHMCS) transitioned to Robins AFB for sustainment. FY13 funding allows for completion of sustainment transition, residual tasks, and any unplanned activities supporting JHMCS sustainment.

A. Mission Description and Budget Item Justification

The Joint Helmet Mounted Cueing System (JHMCS) develops a helmet display system capable of depicting aircraft heading data, pilot's viewing perspective, target indication tracking/cueing, and other information on the aircrew visor to enhance pilot situational awareness. This display allows the pilot to quickly align platform sensors and weapons on targets, and engage threats using High Off-Boresight System (HOBS) weapons such as the AIM-9X.

JHMCS is a Post Milestone C, Acquisition Category III (ACAT III) joint Air Force/Navy program with the Air Force as the lead service. Program is in Full Rate Production (FRP). Continuing activities include deficiency resolution; improvements to tooling and test equipment; Electronic Unit (EU) obsolescence/Diminishing Manufacturing Sources (DMS) redesign; a systems engineering approach for implementing alternate displays; software updates; platform integration; improvements to Reliability and Maintainability (R&M); system upgrade studies and analysis; other obsolescence upgrades; improved magnetic mapping processes to reduce maintenance manhours/ life cycle costs; and efforts to support the transition to depot activation.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207170F / *Joint Helmet Mounted Cueing System (JHMCS)*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	1.472	-	-	-	-
Current President's Budget	1.428	-	-	-	-
Total Adjustments	-0.044	-	-	-	-
• Congressional General Reductions	-0.001	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.043	-			
• Other Adjustments	-	-	-	-	-

Change Summary Explanation

No significant changes

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Product Development	1.428	-	-
Description: Continue Pre-Planned Product Improvement (P3I) efforts, software updates, Follow-On Test and Evaluation (FOT&E), and program management/support. ***FY 2013 Accomplishments:*** Completed deficiency resolution, reliability improvements, P3I activities, obsolescence upgrades, analysis/studies, some deficiency reporting, alternate displays implementation, and software updates. Provided mission support and program management to execute unplanned activities and accomplishment of residual tasks prior to the sustainment phase. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	1.428	-	-

D. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207170F / *Joint Helmet Mounted Cueing System (JHMCS)*

D. Other Program Funding Summary ($ in Millions)

Remarks

E. Acquisition Strategy

JHMCS is an ACAT III joint Air Force/Navy program with Air Force as lead service. The development contract was Cost Plus Award Fee (CPAF) through Boeing - St. Louis for development/integration on the F-15 and F/A-18 aircraft. All other aircraft integration will be handled by the respective platform prime contractors.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207170F / *Joint Helmet Mounted Cueing System (JHMCS)*	**Project (Number/Name)** 675226 / *Joint Helmet Mounted Cueing System*

U.S. AIR FORCE

Joint Hemet Mounted Cueing System (JHMCS) Schedule

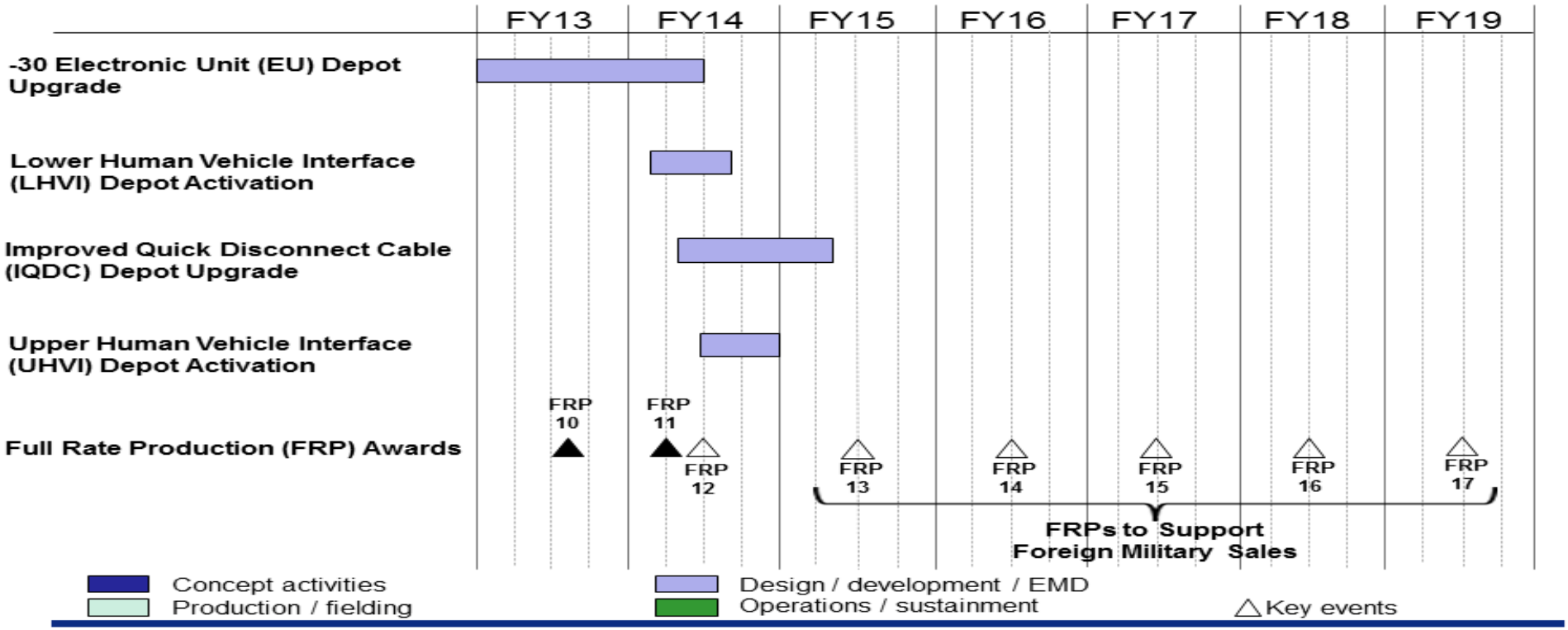


Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207171F / *F-15 EPAWSS*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	-	-	68.944	-	68.944	160.521	108.829	78.337	59.557	108.069	584.257
676038: *EPAWSS*	0.000	-	-	68.944	-	68.944	160.521	108.829	78.337	59.557	108.069	584.257
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 676038 EPAWSS efforts were transferred from PE 0207134F Project 670131 Initial Operation Test and Evaluation.

A. Mission Description and Budget Item Justification

The F-15 is the most versatile fighter in the world today. The F-15C continues to provide air superiority with an undefeated and unmatched aerial combat record. The F-15E retains this air superiority capability and adds systems, such as advanced imaging and targeting systems, to meet the requirement for all-weather, deep penetration, and night / under-the-weather, air-to-surface attack. A mainstay in operations both domestic and abroad, upgrades to the F-15 (avionics, armament, airframe and engines) are critical to maintaining combat viability (lethality, survivability and supportability). Projected to remain in service past 2035, avionics modernization is key to long-term weapon system viability. This modernization is built on a foundation of technical and acquisition support studies (both internal to the Air Force and through outside contractors). The proliferation of fourth generation enemy aircraft, sophisticated "double-digit" anti-aircraft missile systems and other enemy systems pose a significant threat to F-15 survivability. The F-15 Eagle Passive Active Warning and Survivability System (EPAWSS) will replace the F-15's functionally obsolete self-defense Tactical Electronic Warfare System (TEWS) to enhance weapon system situational awareness and survivability against enemy threats. F-15 EPAWSS will also improve reliability and sustainability. F-15 EPAWSS is linked to an aircraft operational flight program update schedule that works to integrate new capabilities with the airframe. Incorporation of corresponding spiral and / or phased technology / equipment improvements that include support equipment, mission planning systems, and training device upgrades will improve performance, supportability and aircrew training.

The F-15 EPAWSS upgrade will significantly improve the F-15's capability to autonomously and automatically detect, identify and locate radio frequency (RF) threats as well as provide the ability to deny, degrade, deceive, disrupt and defeat RF and electro-optical / infrared (EO / IR) threat systems in contested and unplanned operations within highly contested environments through 2035. The 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. The F-15 EPAWSS will prevent RF and IR threat systems from detecting or acquiring accurate targeting information prior to threat engagement to complicate and / or negate an enemy threat targeting solution--and effectively counter enemy missiles / weapons if adversary threat systems engage and employ weapons against friendly forces--through components such as chaff, flares, decoys / angle countermeasures and jamming.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207171F / *F-15 EPAWSS*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	68.944	-	68.944
Total Adjustments	-	-	68.944	-	68.944
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	68.944	-	68.944

Change Summary Explanation

In FY 2015 funds were transfered from PE 0207134F, F-15 Squadrons, Project Number 670131, Initial Operational Test and Evaluation in order to provide ACAT 1 budget transparency of the EPAWSS program.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Eagle Passive/Active Warning Survivability System (EPAWSS)	-	-	68.944
Description: Planned replacement of the existing F-15 self-protection, Tactical Electronic Warfare System (TEWS). This includes technical and acquisition related studies. ***FY 2013 Accomplishments:*** Included in PEC 27134F, BPAC 670131. ***FY 2014 Plans:*** Included in PEC 27134F, BPAC 670131. ***FY 2015 Plans:*** Award and execute Pre-EMD design contract through PDR and CDR. Develop and release Request for Proposal for EMD contract. Continue acquisition planning for EMD and Milestone B. Technical and acquisition related studies and demonstrations			
Accomplishments/Planned Programs Subtotals	-	-	68.944

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207171F / *F-15 EPAWSS*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # F15EWS: *Aircraft Modification*	-	-	-	-	-	-	-	-	82.984	Continuing	Continuing

Remarks

E. Acquisition Strategy

N/A

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207171F / *F-15 EPAWSS*	Project (Number/Name) 676038 / *EPAWSS*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
F-15 EPAWSS (Pre-EMD Effort)	TBD	TBD : TBD,	0.000	-		-		59.180	Dec 2014	-		59.180	111.230	170.410	170.410
F-15 EPAWSS (EMD Effort)	TBD	TBD : TBD,	0.000	-		-		-		-		-	284.592	284.592	284.592
F-15 EPAWSS	Various	Various : Various,	0.000	-		-		9.764	Dec 2014	-		9.764	119.491	129.255	129.255
		Subtotal	0.000	-		-		68.944		-		68.944	515.313	584.257	584.257

Remarks

The individual program reference to "various" contract methods addresses other government costs for trainers, test, hardware, special studies, etc. that are required to meet F-15 EPAWSS programming objectives. The execution vehicles between these DoD entities vary by effort.

FY13PB - Project 670131 includes EPAWSS.

FY14PB - Project 670131 includes EPAWSS.

FY15PB - PEC 27171F, project 676038 includes EPAWSS only.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207171F / *F-15 EPAWSS*	Project (Number/Name) 676038 / *EPAWSS*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support Costs	Various	Various : Various,	0.000	-		-		-		-		-	-	-	-
		Subtotal	0.000	-		-		-		-		-	-	-	-

Remarks

The individual program reference to "various" contract methods addresses other government costs for trainers, test, hardware, special studies, etc. that are required to meet F-15 EPAWSS programming objectives. The execution vehicles between these DoD entities vary by effort.

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		68.944		-		68.944	515.313	584.257	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207171F / *F-15 EPAWSS*	**Project (Number/Name)** 676038 / *EPAWSS*

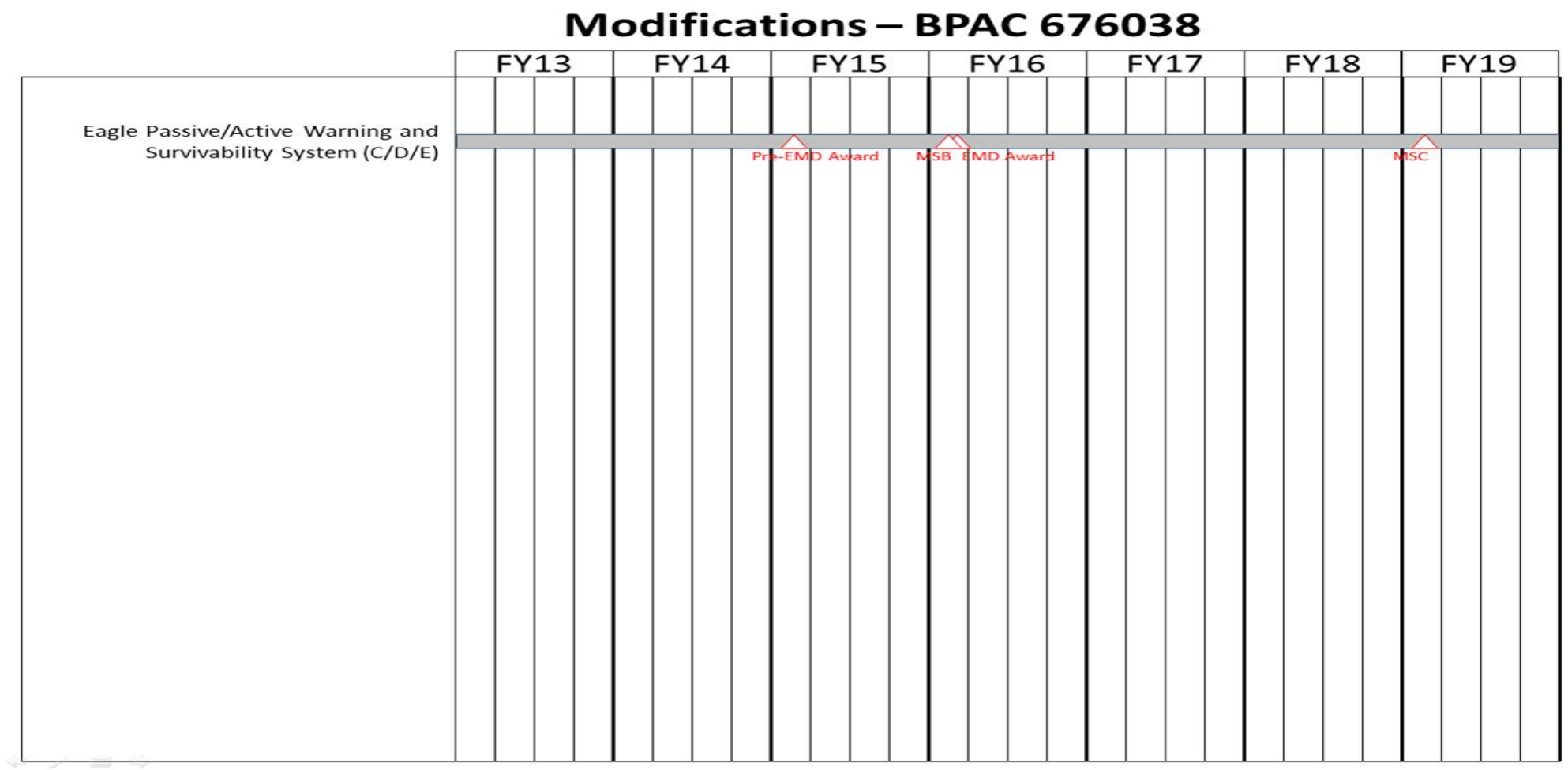


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207171F / *F-15 EPAWSS*	**Project (Number/Name)** 676038 / *EPAWSS*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EPAWSS--FY13 New Start	1	2013	1	2013
EPAWSS Pre-EMD Contract Award	1	2015	1	2015
EPAWSS MS B	3	2016	3	2016
EPAWSS EMD contract award	3	2016	3	2016
EPAWSS MS C	2	2019	2	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207224F / *Combat Rescue and Recovery*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.910	2.582	5.095	-	5.095	0.415	-	-	-	Continuing	Continuing
676016: *Avionics Development and Integration*	-	1.910	2.582	5.095	-	5.095	0.415	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Air Force Rotary Wing Avionics Development and Integration effort is a program to develop a fully integrated avionics upgrade that includes predictive terrain awareness. This program focuses on developing and integrating technologies that will increase the situational awareness of helicopter crews in a degraded visibility environment. This effort was initiated by the Defense Safety Oversight Council.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current and subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	2.095	2.582	5.159	-	5.159
Current President's Budget	1.910	2.582	5.095	-	5.095
Total Adjustments	-0.185	-	-0.064	-	-0.064
• Congressional General Reductions	-0.003	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.182	-	-0.064	-	-0.064

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Avionics Development and Integration	1.910	2.582	5.095
Description: This program focuses on developing and integrating technologies that will increase the situational awareness of helicopter crews in a degraded visibility environment.			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207224F / *Combat Rescue and Recovery*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: Completed risk reduction flight test of prototype Lasar Detection and Ranging (LADAR) and integration of Forward Looking Infrared (FLIR)/LADAR Turret Preliminary Design Review. ***FY 2014 Plans:*** Provides integration contracting support, program management, engineering, simulation, software support, and second developmental flight test. ***FY 2015 Plans:*** Program management, engineering, software support to build and qualify integrated FLIR/LADAR turrets for HH-60G.			
Accomplishments/Planned Programs Subtotals	1.910	2.582	5.095

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

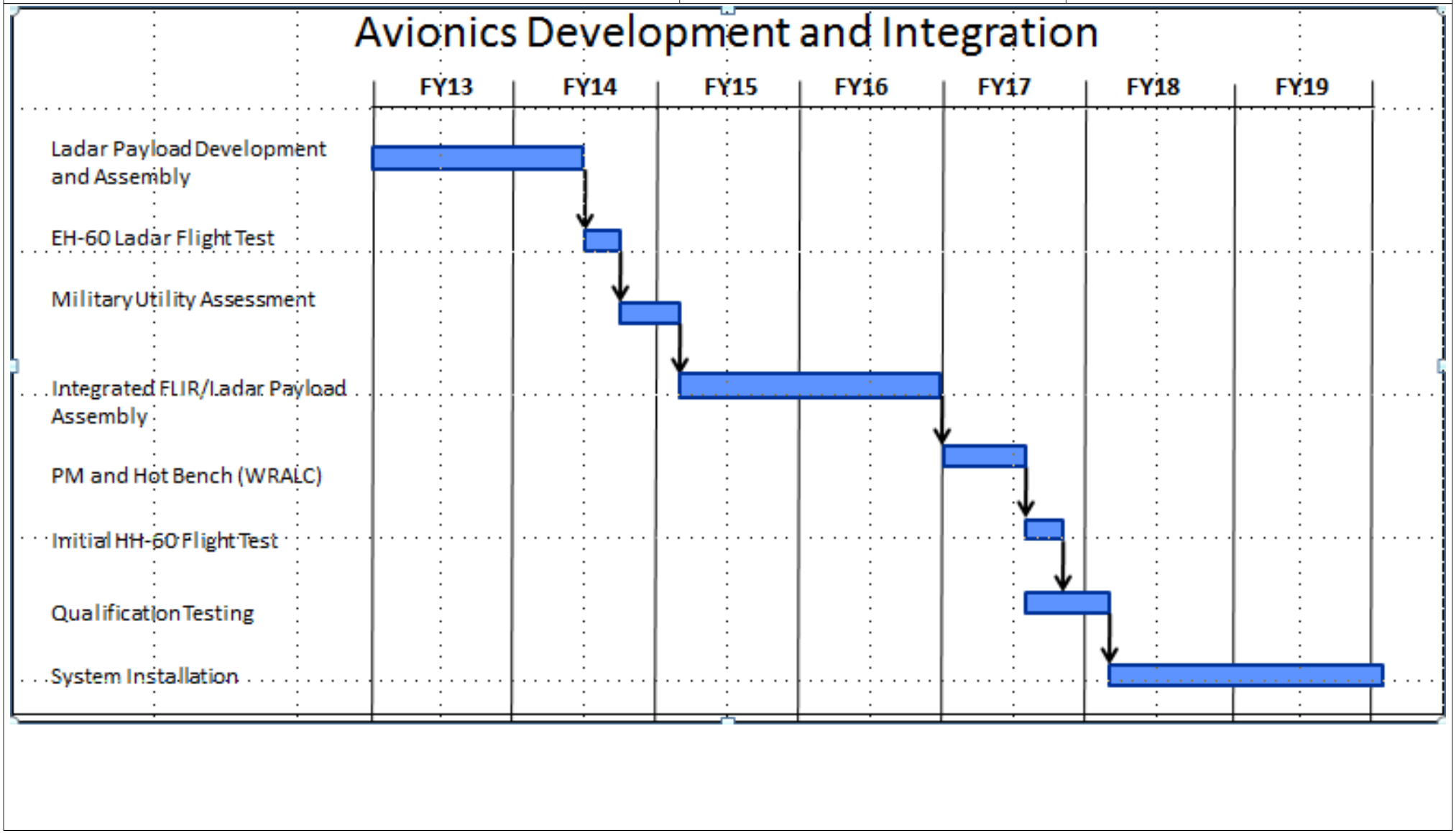
E. Acquisition Strategy

The Air Force is in the process of integrating the Three Dimensional Landing Zone (3D-LZ) technology into an airworthy payload. This payload will be integrated with existing forward looking infrared turrets to minimize additional equipment and weight on the aircraft. Once the payload is tested, the Air Force will finalize its strategy for fleet implementation.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207224F / *Combat Rescue and Recovery*	**Project (Number/Name)** 676016 / *Avionics Development and Integration*



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207227F / *Combat Rescue - Pararescue*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	0.992	0.350	0.883	-	0.883	0.791	0.637	0.650	0.662	Continuing	Continuing
675352: *Guardian Angel RDT&E*	-	0.992	0.350	0.883	-	0.883	0.791	0.637	0.650	0.662	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Guardian Angel (GA) is an Air Force non-aircraft weapon system within the overarching Battlefield Airmen Modernization program. GA is a Family of Systems (FoS) based in both human and equipment capabilities formulated to execute Air Force Personnel Recovery (PR) across the full spectrum of military operations. Established by the Air Force Chief of Staff in 2003 and officially captured in AFPD 10-9, the GA FoS is employed by three distinct Air Force specialties: Pararescuemen (PJ), Combat Rescue Officer (CRO), and Survival, Evasion, Resistance, Escape (SERE). The GA FoS is comprised of nine critical mission areas: Precision Aerial Insertion, Information Management, Force Application, Visual Augmentation, Maritime Recovery, Ground Mobility, Technical Rescue, Medical, and SERE. GA focus is on maintaining legacy weapon system capability while modernizing/improving subsystems for better mission effectiveness.

Funds will be used to obtain significant improvements in operational capability and develop items within the GA FoS to include but not limited to: SONAR, Maritime Recovery, Technical Recovery, Integrated Oxygen System, Medical Monitoring, and the Guardian Angel Air Operations Kit. The Guardian Angel weapon system development activities also include studies, analysis, and developmental testing to support both current and future program planning and execution. Funding will deliver enhanced capability for the dismounted Guardian Angel soldier in terms of dramatic weight reduction and increased mission effectiveness across the conflict spectrum.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207227F / *Combat Rescue - Pararescue*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	1.119	0.542	0.894	-	0.894
Current President's Budget	0.992	0.350	0.883	-	0.883
Total Adjustments	-0.127	-0.192	-0.011	-	-0.011
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.127	-0.192	-0.011	-	-0.011

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Guardian Angel Family of Systems (FoS)	0.992	0.350	0.883

Description: Standardize, modernize and develop additional capability for the Guardian Angel (GA) weapon system used by Combat Rescue Officers and Pararescuemen. Development efforts provide enhanced and improved capabilities for execution of Air Force combat search and rescue and personnel recovery. This weapon system is utilized across the full spectrum of Personnel Recovery (PR) military operations to include patient treatment, extrication, surface/underwater search and recovery, airborne infill/exfill, and ground recovery operations.

FY 2013 Accomplishments:

Explored and developed efforts with NAVSEA on a multi-fuel submersible motor for Maritime Recovery. Delivered motor development assets to government for testing. Completed development and government testing activities of the Tech Recovery Human Remains Pouch and Hand Held Operated Rescue Tool, increasing pararescue capabilities. Completed development and government testing activities for the GA Integrated Oxygen System (GAIOS). Completed development of software plug-ins, software updates, and integration for inclusion of Medical 9 Line and CSAR 15 line form templates in GAO Kit software for greater battlefield situational awareness and patient care. In addition, additional training was required to be developed and conducted to support government testing events for the GAO Kit software and equipment. Continued development efforts and studies for Remote Patient Monitoring and Digital Enhanced Vision Devices as tools for use within the GAO Kit. Started exploration and studies of an upgraded Fire Suppression System for Technical Recovery that will increase pararescue capabilities for extraction of personnel and equipment.

FY 2014 Plans:

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207227F / *Combat Rescue - Pararescue*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue execution and development of previous year's acquisition activities. Complete test, study, strategic planning, and development activities for increased capability and address Engineering Change Proposals as needed. Conduct development and system enhancements on existing and future systems through incorporating test feedback and user inputs into subsequent iterations for better capability and mission success. ***FY 2015 Plans:*** Will continue execution and development of previous year's acquisition activities. Will complete test, study, strategic planning, and development activities for increased capability and address Engineering Change Proposals as needed. Will conduct development and system enhancements on existing and future systems through incorporating test feedback and user inputs into subsequent iterations for better capability and mission success.			
Accomplishments/Planned Programs Subtotals	0.992	0.350	0.883

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA04: Line Item # 842990: *Items Less than $5M (Safety)*	21.149	19.593	24.174	-	24.174	23.560	21.445	21.824	22.214	Continuing	Continuing
• OPAF: BA02: Line Item# 823230: *Security and Tactical Vehicles*	4.096	0.580	3.719	-	3.719	3.911	3.983	4.054	4.126	Continuing	Continuing
• OPAF: BA04: Line Item# 842140: *Night Vision Goggles*	2.427	2.430	2.409	-	2.409	0.806	-	-	-	Continuing	Continuing

Remarks

E. Acquisition Strategy

The Guardian Angel (GA) program will address warfighter immediate needs to standardize, modernize, and develop additional capability for the weapon system used by Combat Rescue Officers and Pararescuemen (Phase one). Until this point, GA has not had a formal acquisition process for the weapon system. The program will also address future requirements for the weapon system that will encompass the needs of all three GA career fields (Phase two).

Phase two of the GA program is an incremental evolutionary acquisition effort in which requirements are fullfilled through further sub-system development and integration. These requirements are being identified in an ongoing study conducted by HQ Air Combat Command. The program has been divided into two phases to more rapidly meet the user's immediate need to standardize and modernize the weapon system.

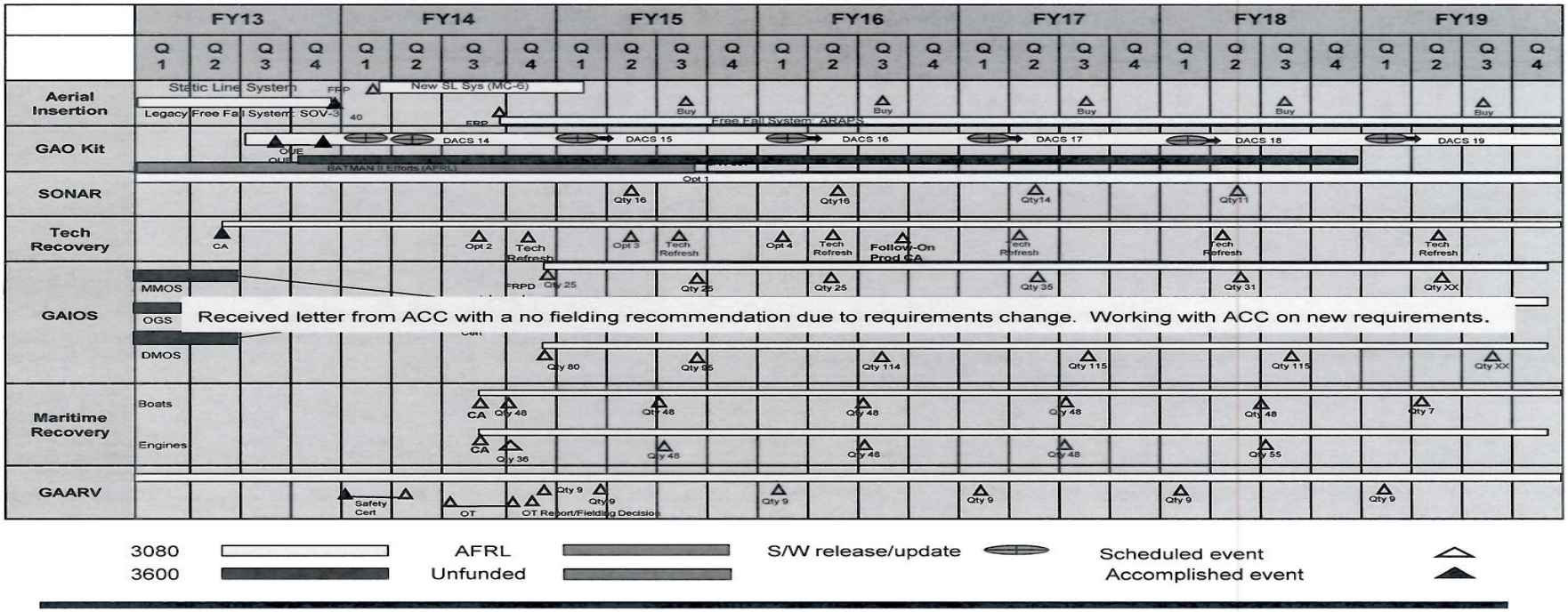
Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207227F / *Combat Rescue - Pararescue*

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207227F / *Combat Rescue - Pararescue*	**Project (Number/Name)** 675352 / *Guardian Angel RDT&E*

Current Schedule



Integrity - Service - Excellence

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207247F / *AF TENCAP*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	58.514	89.816	5.812	-	5.812	31.637	24.389	18.191	18.537	Continuing	Continuing
670001: *Air Force TENCAP*	-	58.514	89.816	5.812	-	5.812	31.637	24.389	18.191	18.537	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Air Force TENCAP increases warfighter effectiveness through the exploitation of national capabilities and promotes cross-domain integration of these capabilities into military operations/training, intelligence, surveillance and reconnaissance (ISR) activities.

AF TENCAP exploits existing air, space, cyber, national and global ISR, and Non-Traditional ISR (NTISR) for operational and tactical applications by rapidly prototyping and providing capability demonstrations. Projects are designed to transition to warfighters and/or national intelligence agencies for operational use, sustainment and appropriate acquisition Programs of Record for further development. AF TENCAP projects can influence the design and operation of future air, space, cyber, national and global ISR and NTISR while providing awareness to warfighters and national intelligence agency organizations and units.

Program consists of multiple small projects supporting one of eight mission/investment areas as a reflection of the Air Force Core Function Mission Areas (CFMAs). Mission areas include: ISR for Space and Space Capabilities, National and Operational ISR, Precision Strike Support and NTISR, Strategic Capabilities and Effects, Cyber and Spectrum Warfare, Data Discovery and Dissemination, Anti-Access/Area Denial and Aerial Layer Network, and National Technical Means support to Irregular Warfare.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207247F / *AF TENCAP*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	63.853	89.816	22.282	-	22.282
Current President's Budget	58.514	89.816	5.812	-	5.812
Total Adjustments	-5.339	-	-16.470	-	-16.470
• Congressional General Reductions	-0.084	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-5.255	-	-16.470	-	-16.470

Change Summary Explanation

FY13: -$5.255M Sequestration Reduction.

Reduction of $16.397M in FY15 due to higher AF priorities.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Exploitation Applications	7.947	11.995	5.812

Description: Exploiting existing air, space, cyber, national and global ISR, and Non-Traditional ISR (NTISR) for operational and tactical applications by rapidly prototyping and capability demonstration and influencing the design and operation of future space, cyber, national and global ISR, and NTISR systems for tactical users.

FY 2013 Accomplishments:

Continued rapid prototype development of AF TENCAP portfolio comprised of 34 Talon projects across eight mission and investment areas (Talon is an approved and funded AF TENCAP effort).

FY 2014 Plans:

Continuing to rapidly prototype projects and focus warfighter support and resource allocation based on AF TENCAP mission/ investment areas as a reflection of Air Force Core Function Mission Areas (CFMAs). Mission areas include: ISR for Space and Space Capabilities, National and Operational ISR, Precision Strike Support and NTISR, Strategic Capabilities and Effects, Cyber and Spectrum Warfare, Data Discovery and Dissemination, Anti-Access/Area Denial and Aerial Layer Network, and National Technical Means support to Irregular Warfare.

FY 2015 Plans:

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207247F / *AF TENCAP*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Will continue to rapidly prototype projects and focus warfighter support and resource allocation based on AF TENCAP mission/ investment areas as a reflection of Air Force Core Function Mission Areas (CFMAs). Mission areas include: ISR for Space and Space Capabilities, National and Operational ISR, Precision Strike Support and NTISR, Strategic Capabilities and Effects, Cyber and Spectrum Warfare, Data Discovery and Dissemination, Anti-Access/Area Denial and Aerial Layer Network, and National Technical Means support to Irregular Warfare.			
Title: Trident Warrior/Battlefield Airborne Communications Node (BACN) Intra-Flight Data Link Subsystem (BACN/BIS) ***Description:*** Support USPACOM advanced tactics (Trident Warrior), techniques and procedures and development efforts for Multi-Domain Integration (MDI) capability leveraging Battlefield Airborne Communications Node Intra-Flight Data Link (BACN-BIS) technology. ***FY 2013 Accomplishments:*** Provided resources to USPACOM advanced tactics and development efforts with one MDI equipped aircraft. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A	4.578	-	-
Title: Talon Hate ***Description:*** Talon HATE is comprised of technology demonstrations to evaluate the military utility of a next-generation capability for the F-15C providing multi-domain information to tactical users. Talon HATE will provide targeting, situational awareness, and an enhanced decision-maker Common Operational Picture. This effort will increase interoperability between joint (Air Force, Navy) forces in contested environments. ***FY 2013 Accomplishments:*** Developed, procured, installed, and integrated four multi-domain fused information pods on F-15s. Cost of all ancillary equipment including antennas is included. ***FY 2014 Plans:*** Continuing the development and building of four multi-domain fused information pods on F-15s, in support of PACOM need. ***FY 2015 Plans:*** Will continue the testing and integration of four multi-domain fused information pods on F-15s, in support of PACOM need.	45.989	49.000	-
Title: Increased Lethality in a Contested Environment (Talon Hate II)	-	28.821	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207247F / *AF TENCAP*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Technology demonstrations to evaluate the military utility of providing additional capability to Talon HATE next-generation capability for the F-15C. This effort provides enhanced multi-domain fused information to tactical users, targeting, situational awareness, and an enhanced decision-maker Common Operational Picture. This effort will increase interoperability between joint (Air Force, Navy) forces in contested environments. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Developing and building capability to provide enhanced multi-domain fused information to tactical users, targeting, situational awareness, and an enhanced decision-maker Common Operational Picture. This effort increasing interoperability between joint (Air Force, Navy) forces in contested environments. ***FY 2015 Plans:*** Will test and integrate capability to provide enhanced multi-domain fused information to tactical users, targeting, situational awareness, and an enhanced decision-maker Common Operational Picture. Effort will continue to increase interoperability between joint (Air Force, Navy) forces in contested environments.			
Accomplishments/Planned Programs Subtotals	58.514	89.816	5.812

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• Not applicable: *N/A*	-	-	-	-	-	-	-	-	-	-	-

Remarks

E. Acquisition Strategy

Projects are selected for development based upon needs identified by the program's customers - DOD Departments, Combatant Commands, Components, MAJCOMs, and/or National Intelligence Agencies. Acquisition strategies are developed using a segmented gate strategy to limit and control risks. Many projects are executed via existing contracts maintained by other agencies; others are executed via Air Force TENCAP contracts established with vendors responding to annual Broad Agency Announcements. The U.S. government organization sponsoring a project is responsible for assuming acquisition, deployment, logistics, and budgetary responsibilities for the developed capability after it has been successfully demonstrated by Air Force TENCAP.

TENCAP projects typically use an incremental acquisition strategy. TENCAP utilizes a disciplined systems engineering approach that allows program team to solve problems through a series of segments. Each increment has to be successful to pursue to the following segment which enables mitigation of cost and schedule risk.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207247F / *AF TENCAP*

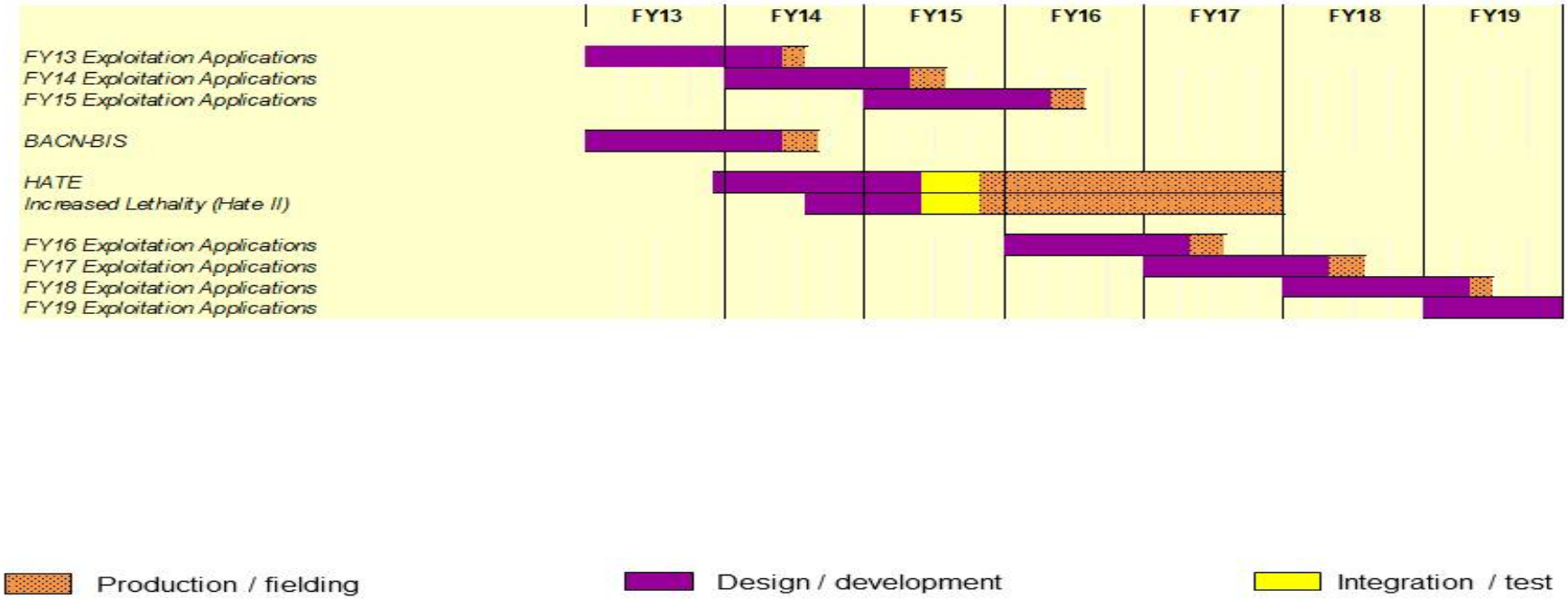
Contracts funded in this program element will be awarded using competitive procedures to the maximum extent possible.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207247F / *AF TENCAP*	**Project (Number/Name)** 670001 / *Air Force TENCAP*

Air Force TENCAP Schedule



FY15 PB

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207249F / *Precision Attack Systems Procurement*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.029	2.000	1.081	-	1.081	1.112	1.123	1.145	1.167	Continuing	Continuing
675347: *Advanced Targeting Pod*	-	1.029	2.000	1.081	-	1.081	1.112	1.123	1.145	1.167	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Advanced Targeting Pods (ATPs) provide long-range target acquisition and expanded weapon delivery envelopes for greater aircraft survivability. ATPs feature an infrared (IR) sensor, charged coupled device television (CCD-TV), laser designator, eye-safe laser, laser spot tracker, infrared marker, and real-time video data link for connectivity with ground forces. As non-developmental items, the majority of improvements to ATPs are the result of investments made by industry Internal Research and Development (IRAD). In addition to operational flight program (OFP) development, this funding provides for the development and integration of capabilities which are either above the capabilities of the industrial base or that require accelerated development timelines in order to meet operational requirements. It also includes program management support, technical analysis, studies and assessments necessary to support the development and integration of future capabilities. Data-linking is one such area where there is an identified gap between industrial capabilities and operational requirements. Additional development efforts will be structured to support the documented ATP requirements as well as urgent operational needs (UONs) as they become known.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	1.063	1.075	1.094	-	1.094
Current President's Budget	1.029	2.000	1.081	-	1.081
Total Adjustments	-0.034	0.925	-0.013	-	-0.013
• Congressional General Reductions	-0.001	-			
• Congressional Directed Reductions	-	-1.075			
• Congressional Rescissions	-	-			
• Congressional Adds	-	2.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.033	-			
• Other Adjustments	-	-	-0.013	-	-0.013

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207249F / *Precision Attack Systems Procurement*

Change Summary Explanation

FY14 Congressional Mark of -$1.075M for forward financing and an add of $2M for Air National Guard (ANG) Sniper

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Advanced Targeting Pod - Sensor Enhancement (ATP-SE) Requirements	1.029	2.000	1.081
Description: ATP-SE technology improvements, requirements definition (studies, analysis and assessments). ***FY 2013 Accomplishments:*** Studied ATP-SE technology improvements and requirements definition. ***FY 2014 Plans:*** ATP-SE digital video interface for Air National Guard. ***FY 2015 Plans:*** ATP-SE technology improvements,requirements definition, studies, analysis and assessments.			
Accomplishments/Planned Programs Subtotals	1.029	2.000	1.081

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA07: LINE ITEM# OTHACF: *PE 0207249F, Precision Attack Systems*	33.685	25.517	21.036	-	21.036	16.864	17.460	17.769	18.100	Continuing	Continuing

Remarks

E. Acquisition Strategy

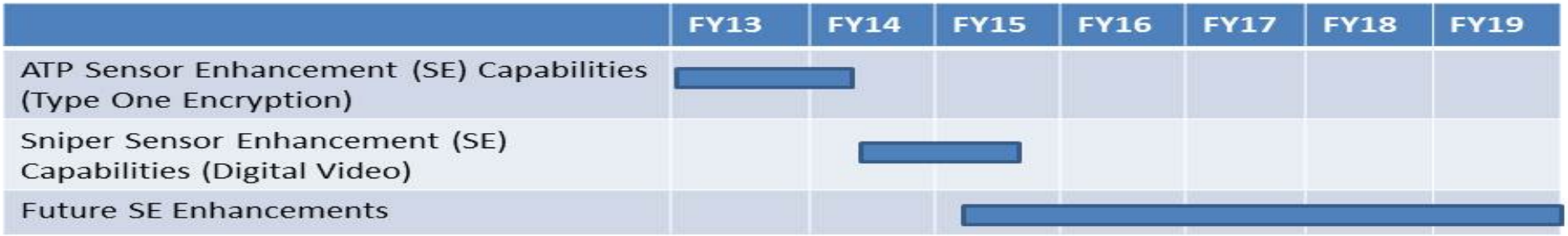
Funds will primarily be executed for studies, analysis and definition for the purpose of identifying improved capability and maintenance mods requirements. Contracting strategy is dependent on market research results. Prior efforts have been accomplished by the prime contractors as well as industry partners.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207249F / *Precision Attack Systems Procurement*	**Project (Number/Name)** 675347 / *Advanced Targeting Pod*

Advanced Targeting Pod Technology Improvement Roadmap



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207253F / *Compass Call*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	10.733	10.745	14.411	-	14.411	14.344	13.970	14.249	14.522	Continuing	Continuing
674804: *Compass Call*	-	10.733	10.745	14.411	-	14.411	14.344	13.970	14.249	14.522	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The EC-130H COMPASS CALL is the USAF's wide-area, airborne Command and Control Warfare/Information Operations (C2W /IO) weapon system. The employment of this system interdicts our adversary's use of the electronic battlespace and is a key active component in the information battlespace and prosecution of Overseas Contingency Operations (OCO). EC-130H COMPASS CALL's sophisticated electronic combat system is capable of surgical denial or disruption of adversary radio frequency (RF) communications systems and sensors. The system was fielded in 1983 and to date has evolved through the Baseline 2 configuration. Due to the rapid advances in electronic attack technology, the EC-130H COMPASS CALL was designed to be easily modified and must continue to modernize and evolve to keep pace with adversary tactics and emerging technologies. Continuous system development is required to maintain battlespace superiority.

The EC-130H COMPASS CALL program employs an incremental development and fielding strategy that puts capability into the warfighter's hands as soon as practical and ensures each iteration of the weapon system is effective against the highest priority threats. To sustain that process requires a steady stream of system development funds. Development funds are required to accomplish subsystem additions and improvements such as the digital signal analysis and exciter subsystem (AXE), the Special Purpose Emitter Array (SPEAR), new modern communications receiver technologies, new IR and counter radar technologies, the Human-to-Machine Interface (HMI), digital cockpit avionics with multi-function displays (glass cockpits), network centric operations, phased array transmit and receive apertures and other classified hardware and software developments necessary to counter military and commercial communications evolutions, command and control operations enhancements, and new/emerging sensor developments. Funding in FY 2015 is required to support RDT&E efforts for Baseline 3 (BL3) upgrades to the EC-130H COMPASS CALL fleet and ground systems/simulators. The BL2 and BL3 programmed requirements have advanced significantly over the two previously fielded baselines. BL2 and BL3 upgrades will help cover the electronic attack shortfall in the coming years. Obsolescence and diminishing manufacturing sources (DMS) are addressed with each baseline upgrade as well as annually as part of the sustainment responsibilities. The two COMPASS CALL Mission Crew Simulators (CCMCS) are upgraded per the Baseline schedule to ensure training capacity keeps pace and matches the operational and technological upgrades delivered in the fielded aircraft. The Weapons System Trainer (WST), scheduled to deliver in 2nd Quarter FY 2014, will mirror the capabilities of the fielded aircraft as well.

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

Due to the rapidly changing threat environment encountered during our prolonged commitment to OCO, the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging requirements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207253F / *Compass Call*

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	12.094	10.782	13.263	-	13.263
Current President's Budget	10.733	10.745	14.411	-	14.411
Total Adjustments	-1.361	-0.037	1.148	-	1.148
• Congressional General Reductions	-0.016	-0.037			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.351	-			
• Other Adjustments	-0.994	-	1.148	-	1.148

Change Summary Explanation

FY13 Reductions in Other Adjustments was due to Sequestration.
FY15 addition due to AF supporting full fleet for EC-130H.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Baseline Upgrade Development	10.733	10.745	14.411

Description: Supports Baseline development, integration and test, plus Special Purpose Emitter Array (SPEAR) Generation 3 for Baseline 2, and Baseline 3 non-recurring engineering (NRE).

FY 2013 Accomplishments:
Continued Baseline 2 integration, and test of SPEAR classified techniques and electronic attack infrastructure, Network Centric Operations and Reachback Connectivity Capability, Digital Signal Acquisition and Analysis Subsystem, Digital Exciter Subsystem and production of a second COMPASS CALL Mission Crew Simulator (CCMCS). Continued Baseline 3 development of Modern communications receiver technologies, Human Machine Interface, Commercial Band Phased Array New Target Development, Advanced Commercial and Military Communications, Counter Radar and Counter Satellite Navigation Techniques, and Target Development.

FY 2014 Plans:

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207253F / *Compass Call*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continue Baseline 3 development of new IR counter-measures and counter-radar technologies, new receiver technologies, Human-Machine Interface, New Array, New Target Development, Advanced Commercial and Military Communications, Counter Radar and Counter Satellite Navigation Techniques, and Target Development. ***FY 2015 Plans:*** Will continue Baseline 3 development of new counter-radar technologies, new receiver technologies, Human Machine Interface, New Array, New Target Development, Advanced Commercial and Military Communications, Counter Radar and Counter Satellite Navigation Techniques, Target Development, and Digital Avionics (glass cockpit) enhancements.			
Accomplishments/Planned Programs Subtotals	10.733	10.745	14.411

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line item# CALL00: *Compass Call Mods*	63.958	29.494	57.828	-	57.828	41.779	35.690	36.616	37.298	Continuing	Continuing
• APAF: BA06: Line item# CALL00: *Compass Call Mod Spares*	26.663	10.222	12.458	-	12.458	11.662	10.508	10.706	10.902	Continuing	Continuing

Remarks

E. Acquisition Strategy

EC-130H COMPASS CALL capability is maintained with incremental upgrades per the baseline acquisition strategy plus Quick Reaction Capability (QRC) developments acquired through the 645th Aeronautical Systems Group (BIG SAFARI Program Office) in accordance with the BIG SAFARI Program Management Directive (PMD) and the BIG SAFARI Class Justification and Approval (J&A) document for acquisition of supplies and services using other than full and open competition criteria. The procured supplies and services are supported by the BIG SAFARI Life Cycle Management Plan (LCMP) across the full spectrum of system life cycle management from developmental engineering to system retirement ("cradle to grave" support). Due to the rapidly changing threat environment encountered during our prolonged commitment to Overseas Contingency Operations (OCO), the acquisition program manager has the authority to redirect funding as necessary to meet current stated and emerging Combatant Commander requirements.

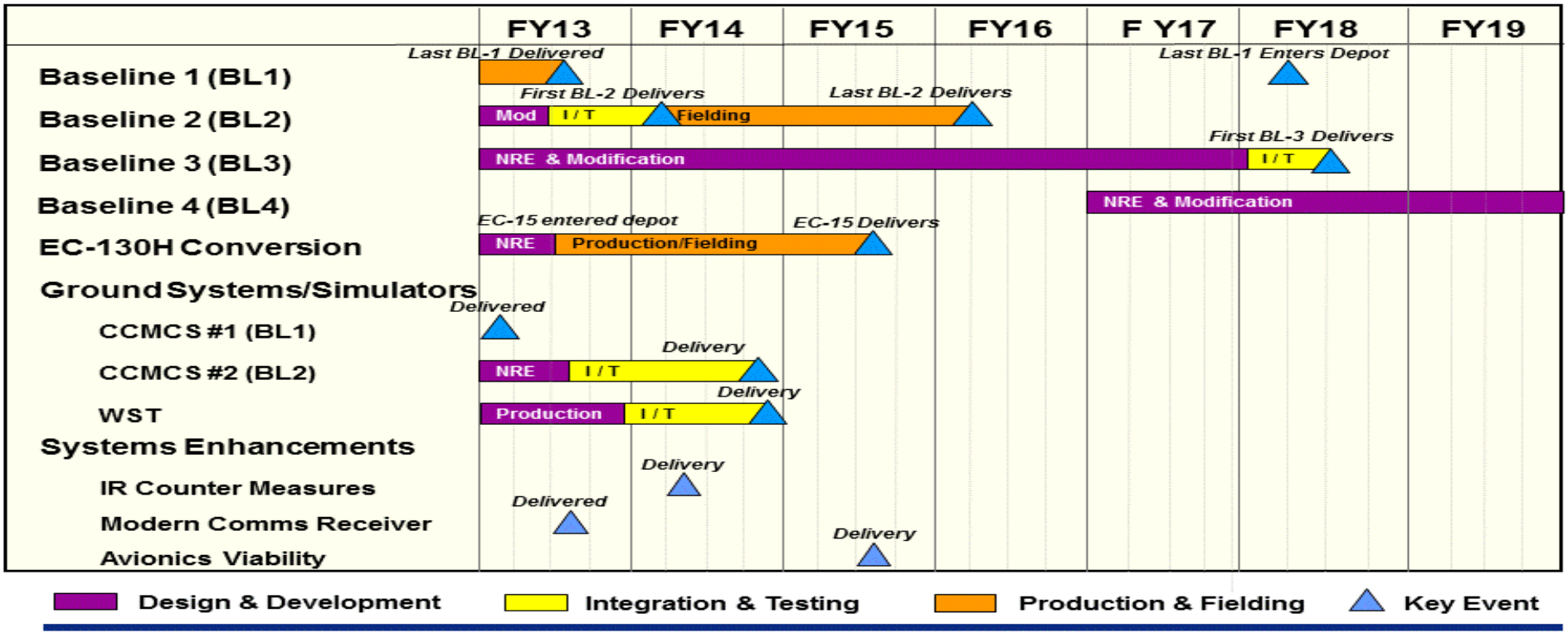
F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207253F / *Compass Call*	**Project (Number/Name)** 674804 / *Compass Call*

U.S. AIR FORCE

EC-130H COMPASS CALL Schedule



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	114.802	89.369	109.664	-	109.664	148.286	151.187	154.141	157.076	Continuing	Continuing
671012: *Aircraft Engine Component Improvement Program*	-	113.829	70.069	78.690	-	78.690	116.738	119.053	121.379	123.690	Continuing	Continuing
675365: *F-35*	-	0.973	19.300	30.974	-	30.974	31.548	32.134	32.762	33.386	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for in-service Air Force engines to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. Historically, aircraft systems change missions, tactics, and environments (including new fuels) to meet changing threats throughout their lives. New technical problems can develop in the engines through actual use and Engine CIP provides the means to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the engine's life, gradually decreasing to a minimum level (safety/ depot repairs) sufficient to keep older inventory engines operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes engine-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Engine CIP ensures continued improvements in engine R&M, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs. Without Engine CIP, out year support funding would have to be significantly increased.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force					Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*		
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	187.984	139.369	139.810	-	139.810
Current President's Budget	114.802	89.369	109.664	-	109.664
Total Adjustments	-73.182	-50.000	-30.146	-	-30.146
• Congressional General Reductions	-0.248	-			
• Congressional Directed Reductions	-	-50.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-49.449	-			
• SBIR/STTR Transfer	-5.133	-			
• Other Adjustments	-18.352	-	-30.146	-	-30.146

Change Summary Explanation

FY2013 adjustments are Sequestration $-18.352M, Reprogrammings $-49.449M, and Small Business Innovative Research (SBIR) Reduction -$5.133M

FY2014 -Congressional Directed Reduction $-50.000M "Program Decrease"

FY2015 - Reduction - $30.146M due to higher Air Force Priorities

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*	Project (Number/Name) 671012 / *Aircraft Engine Component Improvement Program*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
671012: *Aircraft Engine Component Improvement Program*	-	113.829	70.069	78.690	-	78.690	116.738	119.053	121.379	123.690	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustaining engineering support for in-service Air Force engines to maintain flight safety (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life. Historically, aircraft systems change missions, tactics, and environments (including new fuels) to meet changing threats throughout their lives. New technical problems can develop in the engines through actual use and Engine CIP provides the means to develop fixes for these field problems. Engine CIP funding is driven by field events and types/maturity of engines, not by the total engine quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the engine's life, gradually decreasing to a minimum level (safety/ depot repairs) sufficient to keep older inventory engines operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes engine-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production engines. Engine CIP ensures continued improvements in engine R&M, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year Operations and Maintenance (O&M) and spares costs. Without Engine CIP, out year support funding would have to be significantly increased.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Aircraft Engine Component Improvement Program	113.829	70.069	78.690
Description: Aircraft Engine Component Improvement Program (CIP) provides critical sustainment engineering support for approximately 20,300 engines (including foreign military sales (FMS)) to maintain flight safety (highest priority), to address parts obsolescence, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life.			
FY 2013 Accomplishments: Funding enabled Engine CIP to continue to execute tasks across 13+ engine types. Majority of the budget addresses engine issues associated with the A-10, B-1, B-2, C-130, F-15, F-16, and F-22 aircraft. Engine CIP work effort addresses safety of flight,			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. In addition to engine maturation, ground and flight engine testing was used to validate redesigned parts and new repair procedures. Engine CIP maintained engine flight safety, addressed obsolescence deficiencies, improved system operational readiness (OR) and reliability & maintainability (R&M), reduced engine life cycle costs (LCC), and sustained engines throughout their service life. ***FY 2014 Plans:*** Funding enables Engine CIP to execute tasks across 13+ engine types. Majority of the budget addresses engine issues associated with the A-10 B-1, B-2, C-130, F-15, F-16, and F-22 aircraft. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. In addition to engine maturation, ground and flight engine testing is used to validate redesigned parts and new repair procedures. Engine CIP maintains engine flight safety, addresses obsolescence deficiencies, improves system operational readiness (OR) and reliability & maintainability (R&M), reduces engine life cycle costs (LCC), and sustains engines throughout their service life. ***FY 2015 Plans:*** Funding will enable Engine CIP to execute tasks across 13+ engine types. Majority of the budget addresses engine issues associated with the A-10, B-1, B-2, C-130, F-15, F-16, and F-22 aircraft. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, engine maturation and life limit/mission analysis. In addition to engine maturation, ground and flight engine testing is used to validate redesigned parts and new repair procedures. Engine CIP maintains engine flight safety, addresses obsolescence deficiencies, improves system operational readiness (OR) and reliability & maintainability (R&M), reduces engine life cycle costs (LCC), and sustains engines throughout their service life.			
Accomplishments/Planned Programs Subtotals	113.829	70.069	78.690

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• None: *N/A*	-	-	-	-	-	-	-	-	-	-	-

Remarks

Other APPN RELATED ACTIVITIES
(U) - PEs 0604268A and 0604268N, Army/Navy Aircraft Engine CIPs, prior to FY1996
(U) - PEs 0203752A and 0205633N, Army/Navy Aircraft Engine CIPs, FY1996-present

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

D. Acquisition Strategy

Contracts within this program are awarded sole source to engine manufacturers. Engine CIP tasks are generally assigned to original engine manufacturers based on available funding and prioritization of candidates.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 671012 / *Aircraft Engine Component Improvement Program*

Not applicable. Engine CIP is a continuing sustaining engineering support program that annually funds 200+ separate tasks.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207268F / *Aircraft Engine Component Improvement Program*	Project (Number/Name) 675365 / *F-35*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675365: *F-35*	-	0.973	19.300	30.974	-	30.974	31.548	32.134	32.762	33.386	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The F135 Aircraft Engine Component Improvement Program (CIP) supports F-35 single-engine fighter propulsion systems. It provides the only source of critical sustaining engineering support for in-service Air Force propulsion systems. Engine CIP maintains flight safety (highest priority), to correct service revealed deficiencies, to improve system Operational Readiness (OR) and Reliability & Maintainability (R&M), to reduce propulsion system Life Cycle Cost (LCC), and sustain the propulsion systems throughout the service life. Historically, aircraft systems change missions, tactics, and environment (including new fuels) and meet changing threats throughout their lives. New technical problems can develop in the propulsion system through actual use and the Engine CIP provides the means to develop fixes for these field problems. Engine CIP funding is driven by field events and type/maturity of the propulsion systems, not by the total quantity. The program starts with government acceptance of the first procurement-funded engine and continues over the propulsion system's life, gradually decreasing to a minimum level (safety/depot repairs) sufficient to keep older inventory propulsion systems operational. Engine CIP, through "Lead the Fleet" operational use and accelerated mission testing, identifies and fixes propulsion-related problems ahead of operational impacts. Engine CIP addresses out-of-warranty usage/life and enables the Air Force to obtain additional warranties when manufacturers incorporate Engine CIP improvements into production propulsion systems. Engine CIP ensures continued improvements in R&M, which reduce out year support costs. Historically, R&M related Engine CIP efforts significantly reduce out year O&M and spares costs. Without Engine CIP, out year support funding would have to be significantly increased.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Aircraft Engine Component Improvement Program (F135)	0.973	19.300	30.974
Description: The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical sustainment engineering support for F-35 propulsion systems to maintain flight safety for this single-engine fighter (highest priority), to correct service revealed deficiencies, to improve system operational readiness (OR) and reliability & maintainability (R&M), to reduce engine Life Cycle Cost (LCC), and to sustain engines throughout their service life.			
FY 2013 Accomplishments: FY13 allocated funding was used to assess and plan 2014 Joint Strike Fighter (JSF) Engine CIP requirements.			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F-35*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Funding enables JSF Engine CIP to execute approximately 8 tasks supporting initial flying operations on F135. Engine CIP work effort addresses safety of flight, engine component redesign, repair/rework procedures, accelerated maturation testing and life limit/mission analysis. In addition, ground and flight engine testing is used to validate redesigned parts and new repair procedures. Funding enables JSF CIP to maintain/improve engine flight safety, address parts obsolescence, improve system operational readiness and reliability & maintainability, reduce engine life cycle cost, and sustain engines throughout their service life. ***FY 2015 Plans:*** Funding will enable JSF Engine CIP to execute approximately 25 tasks supporting initial flying operations on F135. Engine CIP work effort will address safety of flight, engine component redesign, repair/rework procedures, accelerated maturation testing and life limit/mission analysis. In addition, ground and flight engine testing will be used to validate redesigned parts and new repair procedures. Funding will enable JSF CIP to maintain/improve engine flight safety, address parts obsolescence, improve system operational readiness and reliability & maintainability, reduce engine life cycle cost, and sustain engines throughout their service life.			
Accomplishments/Planned Programs Subtotals	0.973	19.300	30.974

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• None: *N/A*	-	-	-	-	-	-	-	-	-	-	-

Remarks

Program Element 0205633N provides US Navy funding support for F-35 propulsion system

D. Acquisition Strategy

Contracts within this program are projected to be awarded sole source to engine manufacturer. F-35 Engine CIP tasks are generally assigned to the original engine manufacturer based on available funding and prioritization of candidates.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207268F / *Aircraft Engine Component Improvement Program*	**Project (Number/Name)** 675365 / *F-35*

Not Applicable. F-35 engine CIP is a continuing sustaining engineering support program that will fund 8 engine accelerated mission test tasks in FY14 with increasing F135 engine unique tasks over the FYDP.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	1,125.419	7.095	6.373	15.897	-	15.897	14.699	4.915	4.413	4.497	41.100	1,224.408
674515: *Joint Air-to-Surface Standoff Missile (JASSM)*	926.298	3.607	3.132	7.424	-	7.424	4.968	-	-	-	-	945.429
675356: *JASSM Extended Range (JASSM-ER)*	199.121	3.488	3.241	8.473	-	8.473	9.731	4.915	4.413	4.497	41.100	278.979
MDAP/MAIS Code: 555												

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Joint Air-to-Surface Standoff Missile (JASSM) program provides a long range, conventional air-to-surface, autonomous, precision-guided, low-observable, standoff cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable targets. There are two variants of the JASSM missile; JASSM baseline and JASSM-Extended Range (JASSM-ER). The requirement for JASSM baseline is given in the JASSM Operational Requirements Document (ORD) dated 20 Jan 2004, and the JASSM-ER requirement is given in JASSM-ER Capability Development Document (CDD) dated 16 Apr 2010. Both JASSM missiles have improved reliability, separate milestone decision points and separate projects within a single program element. Aircraft integration of baseline JASSM is complete on the B-52H, F-16 (Block 50), B-1, B-2 and F-15E. Objective aircraft include the F-16 (Block 40) and F-35. Aircraft integration of JASSM-ER is complete on the B-1B. Objective aircraft are the B-52H, F16C/D (Block 50/52), B-2, F-16C/D (Blocks 25-42), F-15E and F-35.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	7.950	6.373	17.579	-	17.579
Current President's Budget	7.095	6.373	15.897	-	15.897
Total Adjustments	-0.855	-	-1.682	-	-1.682
• Congressional General Reductions	-0.011	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.191	-			
• Other Adjustments	-0.653	-	-1.682	-	-1.682

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*

Change Summary Explanation

FY13: Decrease in Other Adjustments is due to the sequestration reduction.

FY15: Rephased the funding by reducing the FY15 funds by $1.7M with a payback in FY16 and FY17, due to delay in the fuze (ESAF) development program.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	Project (Number/Name) 674515 / *Joint Air-to-Surface Standoff Missile (JASSM)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
674515: *Joint Air-to-Surface Standoff Missile (JASSM)*	926.298	3.607	3.132	7.424	-	7.424	4.968	-	-	-	-	945.429
Quantity of RDT&E Articles	81.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Joint Air-to-Surface Standoff Missile (JASSM) program provides a long range, conventional air-to-surface, autonomous, precision-guided, low-observable, standoff cruise missile compatible with fighter and bomber aircraft able to attack a variety of fixed or relocatable targets. This project develops the baseline JASSM missile. The requirement for JASSM baseline is given in the JASSM Operational Requirements Document (ORD), dated 20 Jan 2004. Aircraft integration of the baseline JASSM is complete on the B-52H, F-16 (Block 50), B-1, B-2, and F-15E. Objective aircraft include the F-16 (Block 40)and F-35. The government is buying the JASSM system based on a contractor-developed, government-approved System Performance Specification (SPS), this SPS is on contract. The contractor assumes total system performance responsibility (TSPR) for Lots 1-6 as defined in the SPS; for Lot 7 and beyond, the government has approval authority of Class I configuration changes. This project also develops improvements to the JASSM and JASSM-ER fuze, including the development of the Electronic Safe and Arm Fuze (ESAF). The Common Telemetry Instrumentation Kit (C-TIK) is partially executed under this project as it is common to JASSM baseline and JASSM-ER. The program is evaluating Diminishing Manufacturing Sources Material Shortages (DMSMS) and several obsolescence issues.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Electronic Safe and Arm Fuze (ESAF) - Common to JASSM baseline and JASSM-ER (cost shared by both projects)	1.316	2.686	5.729
Description: ESAF will resolve obsolescence issues, increase reliability and replace the current fuze. ESAF will be implemented in both JASSM baseline and JASSM-ER missiles.			
FY 2013 Accomplishments: ESAF development prototype contract. Initial design work, sled instrumentation kit (SLIK) development, and conduct comparative airgun testing.			
FY 2014 Plans: ESAF development restart contract. Technical demonstration phase leading to critical design review work with the United States Navy (USN) to identify potential for common fuze requirement between JASSM and US Navy's Offensive Air-to-Surface Weapon (OASuW).			
FY 2015 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	**Project (Number/Name)** 674515 / *Joint Air-to-Surface Standoff Missile (JASSM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Award ESAF Engineering and Manufacturing Development (EMD) contract. Complete sled instrumentation kit (SLIK) development. Continue design work, pre-production material, qualification work.			
Title: Common Telemetry Instrumentation Kit (C-TIK) - Common to JASSM baseline and JASSM-ER (cost shared by both projects) ***Description:*** C-TIK replaces current TIK used during flight testing and will be common to both JASSM and JASSM-ER. The C-TIK is partially executed under this project as it is common to JASSM baseline and JASSM-ER. ***FY 2013 Accomplishments:*** Completed Phase I effort of C-TIK development contract. Includes design work, battery prototype and destruct charge. ***FY 2014 Plans:*** C-TIK development contract. Includes design work, destruct charge development and battery qualification testing. ***FY 2015 Plans:*** C-TIK development contract. Includes design work, destruct charge development and battery qualification testing.	2.091	0.246	0.937
Title: Diminishing Manufacturing Sources Material Shortages (DMSMS) ***Description:*** Development/evaluation (study analysis) related to Diminishing Manufacturing Sources Material Shortages (DMSMS), and obsolescence issues. ***FY 2013 Accomplishments:*** Development/evaluations that address JASSMs obsolescence plan directed activities and determine parts/components that will need replacement/upgrading (Inertial Measurement Unit, Missile control Unit, anti-jam/anti-spoofing system). ***FY 2014 Plans:*** Development/evaluations that address JASSMs obsolescence plan directed activities and determine parts/components that will need replacement/upgrading (Inertial Measurement Unit, Missile control Unit, anti-jam/anti-spoofing system). ***FY 2015 Plans:*** Development/evaluations that address JASSMs obsolescence plan directed activities and determine parts/components that will need replacement/upgrading (Inertial Measurement Unit, Missile control Unit, anti-jam/anti-spoofing system).	0.100	0.100	0.100
Title: Test Support ***Description:*** Government Test Support for ESAF and C-TIK. Includes flight test equipment, targets, Test Wing and Range support, and other ground/flight test support.	0.100	0.100	0.658

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	**Project (Number/Name)** 674515 / *Joint Air-to-Surface Standoff Missile (JASSM)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: ESAF (prototype) and C-TIK test support to include test equipment, targets, range support, and other ground test support. ***FY 2014 Plans:*** ESAF (prototype) and C-TIK development flight test support to include test equipment, targets, range support, and other ground test support. ***FY 2015 Plans:*** Continue ESAF Sled tests, cannon tests and other ESAF and C-TIK development flight test support to include test equipment, targets, range support, and other ground test support.			
Accomplishments/Planned Programs Subtotals	3.607	3.132	7.424

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• MPAF: BA02: Line Item # 654515: *JASSM*	166.400	144.532	-	-	-	-	-	-	-	-	1,606.415
• MPAF: BA02 Line Item # JASSM0: *JASSM*	-	-	138.224	-	138.224	118.116	-	-	-	-	256.340

Remarks

D. Acquisition Strategy

All major contracts within this project have been awarded through full and open competition. The EMD phase option for JASSM baseline was completed using Cost Plus Award Fee (CPAF). Currently, C-TIK is a Cost Plus Fixed Fee (CPFF) contract and ESAF is a CPFF contract.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	Project (Number/Name) 674515 / *Joint Air-to-Surface Standoff Missile (JASSM)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development of a new fuze. Component Upgrades to Electronic Safe and Arm Fuze (ESAF) due to DMSMS.	SS/CPIF	Lockheed Martin : Orlando, FL	714.516	1.316	Dec 2012	2.686	Jun 2014	5.729	Mar 2015	-		5.729	2.820	727.067	727.067
Common Telemetry Instrumentation Kit (C-TIK)	SS/FFP	Lockheed Martin : Orlando, FL	0.000	2.091	Jan 2013	0.246	Mar 2014	0.937	Dec 2014	-		0.937	1.748	5.022	5.022
Development efforts related to Diminishing Manufacturing Sources Material Shortages (DMSMS), and obsolescence issues.	Various	Lockheed Martin : Orlando, FL	0.000	0.100	Jun 2013	0.100	Jul 2014	0.100	Jan 2015	-		0.100	-	0.300	0.300
		Subtotal	714.516	3.507		3.032		6.766		-		6.766	4.568	732.389	732.389

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
96 TW test support, flight test	Various	Test Wing : Eglin, FL	149.552	0.100	Jan 2013	0.100	Jul 2014	0.658	Feb 2015	-		0.658	0.400	150.810	150.810
		Subtotal	149.552	0.100		0.100		0.658		-		0.658	0.400	150.810	150.810

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	Project (Number/Name) 674515 / *Joint Air-to-Surface Standoff Missile (JASSM)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration (PMA). Program office/mission support.	C/Various	PMA : Eglin AFB, FL	62.230	-		-		-		-		-	-	62.230	62.230
		Subtotal	62.230	-		-		-		-		-	-	62.230	62.230

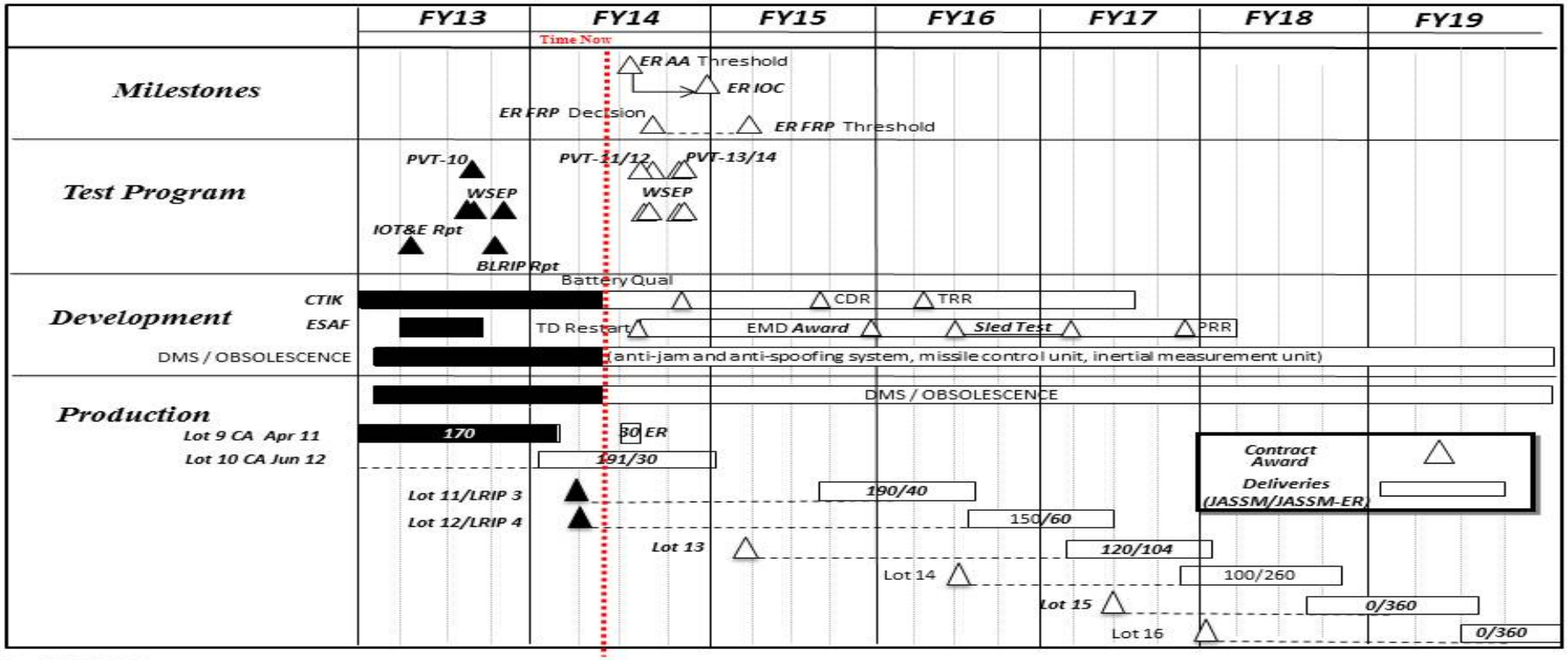
	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	926.298	3.607		3.132		7.424		-		7.424	4.968	945.429	945.429

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	**Project (Number/Name)** 674515 / *Joint Air-to-Surface Standoff Missile (JASSM)*

JASSM/JASSM-ER Top Level Schedule

War-Winning Capability…On Time, On Cost



As of 25 Feb 14

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	**Project (Number/Name)** 674515 / *Joint Air-to-Surface Standoff Missile (JASSM)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
C-TIK Battery Development and Qualification	1	2013	1	2015
C-TIK Destruct Charge Development and Qualification	1	2013	4	2015
C-TIK Integration with JASSM and Test Equipment Development	2	2014	1	2017
C-TIK Critical Design Review (CDR)	3	2015	3	2015
C-TIK Safety Certification	4	2016	4	2016
C-TIK Flight Testing	1	2017	2	2017
ESAF Prototyping	3	2014	1	2016
ESAF Engineering and Manufacturing Development (EMD)	4	2015	1	2018
ESAF Cannon Testing	2	2016	2	2016
ESAF Critical Design Review (CDR)	3	2016	3	2016
ESAF Sled Testing	2	2016	1	2017
ESAF Qualification Testing	4	2016	1	2017
ESAF Flight Testing	3	2017	4	2017
ESAF Production Readiness Review (PRR)	4	2017	4	2017

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	Project (Number/Name) 675356 / *JASSM Extended Range (JASSM-ER)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675356: *JASSM Extended Range (JASSM-ER)*	199.121	3.488	3.241	8.473	-	8.473	9.731	4.915	4.413	4.497	41.100	278.979
Quantity of RDT&E Articles	31.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This project provides a long range (over twice the range of baseline JASSM), conventional air-to-surface, autonomous, precision-guided, low observable, standoff cruise missile compatible with fighter and bomber aircraft. The requirement for JASSM-ER is given in JASSM-ER Capability Development Document (CDD), dated 16 Apr 2010. This project develops the extended range version of the JASSM missile (JASSM-ER). The threshold integration platform for JASSM-ER is the B-1B. Objective aircraft are B-52H, F16C/D (Block 50/52), B-2, F-16C/D (Blocks 25-42), F-15E, and F-35. JASSM-ER provides the capability to attack a variety of high value fixed or relocatable targets with precision, through preplanned missions or target-of-opportunity, deeper into enemy territory than JASSM Baseline while minimizing the threat to launch aircraft. The Air Force is developing JASSM-ER based on a contractor-developed, government-approved System Performance Specification (SPS). The 16 JASSM-ER Operational Test flights were successfully completed in 2013 with a 100% success rate (16/16). Currently, this project develops a Common Telemetry Instrumentation Kit (C-TIK) which will be used during flight testing and will be common to both JASSM Baseline and JASSM-ER. The Electronic Safe and Arm Fuze (ESAF) is partially executed under this project since it's common to JASSM baseline and JASSM-ER. The JASSM program is evaluating Diminishing Sources Material Shortages (DMSMS) and several obsolescence issues.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Common Telemetry Instrumentation Kit (C-TIK) - Common to JASSM baseline and JASSM-ER (cost shared by both projects) ***Description:*** C-TIK replaces current TIK used during flight testing and will be common to both JASSM and JASSM-ER. ***FY 2013 Accomplishments:*** Completed Phase I effort of C-TIK development contract. Includes design work, battery prototype and destruct charge; and PMA costs. ***FY 2014 Plans:*** C-TIK development contract. Design work: Continue destruct charge development and battery qualification testing; and PMA costs. ***FY 2015 Plans:*** C-TIK development contract. Design work: Continue destruct charge development and battery qualification testing.	2.728	1.607	6.773
Title: Electronic Safe and Armed Fuze (ESAF) - Common to JASSM baseline and JASSM-ER (cost shared by both projects)	0.463	1.224	1.000

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	**Project (Number/Name)** 675356 / *JASSM Extended Range (JASSM-ER)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: ESAF will resolve obsolescence issues and replace the current fuze. ESAF will be implemented in both JASSM Baseline and JASSM-ER. ***FY 2013 Accomplishments:*** ESAF development prototype contract. Initial design work, sled instrumentation kit (SLIK) development, and conduct comparative airgun testing. ***FY 2014 Plans:*** ESAF development restart contract. Technical demonstration phase leading to critical design review work with the United States Navy (USN) to identify potential for common fuze requirement between JASSM and US Navy's Offensive Air-to-Surface Weapon (OASuW). ***FY 2015 Plans:*** ESAF development contract. Complete sled instrumentation kit (SLIK) development. Continue design work, pre-production material, qualification testing.			
Title: Development and testing to support upgrades. Diminishing Manufacturing Sources Material Shortages (DMSMS) ***Description:*** Development and testing to support upgrades. Supports DMSMS changes and hardware obsolescence; also provide support for any ground and flight test activity required to verify changed hardware before cutting into production. ***FY 2013 Accomplishments:*** Development and testing to support upgrades to support DMSMS changes and hardware obsolescence; also provide support for any ground and flight test activity required to verify changed hardware before cutting into production. ***FY 2014 Plans:*** Development and testing to support upgrades. Supports DMSMS changes and hardware obsolescence, Flight Termination System (FTS) battery replacement, and M-code mandate investigation; also provide support for any ground and flight test activity required to verify changed hardware before cutting into production. ***FY 2015 Plans:*** Development and testing to support upgrades. Supports DMSMS changes and hardware obsolescence, and M-code mandate investigation; also provide support for any ground and flight test activity required to verify changed hardware before cutting into production.	0.200	0.350	0.500
Title: Test Support	0.097	0.060	0.200

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	**Project (Number/Name)** 675356 / *JASSM Extended Range (JASSM-ER)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Government Test Support for ESAF and C-TIK. Includes flight test equipment, targets, Test Wing and Range support, and other ground/flight test support. ***FY 2013 Accomplishments:*** CTIK, ESAF, and other flight test support to include test equipment, targets, range support, and other ground test support. ***FY 2014 Plans:*** Continue CTIK, ESAF, and other flight test support to include test equipment, targets, range support, and other ground test support. ***FY 2015 Plans:*** Continue CTIK, ESAF, and other development flight test support to include test equipment, targets, range support, and other ground test support.			
Accomplishments/Planned Programs Subtotals	3.488	3.241	8.473

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• MPAF: BA02 Line Item 654515: *JASSM*	63.792	126.619	-	-	-	-	-	-	-	-	309.935
• MPAF: BA02 Line Item # JASSM0: *JASSM*	-	-	199.214	-	199.214	326.472	439.933	448.689	456.977	1,899.807	3,771.092

Remarks

D. Acquisition Strategy

JASSM-ER is the extended range version of the JASSM baseline missile (currently in full rate production). The initial JASSM-ER development contract, awarded in 2004, was Cost-Plus-Award-Fee. In 2008, the program office awarded a Cost-Plus-Incentive-Fee (CPIF) contract with performance incentives to complete the development effort. Current contracts for ESAF is a Cost Plus Fixed Fee(CPFF) contract, and the C-TIK contract is a CPFF contract.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	**Project (Number/Name)** 675356 / *JASSM Extended Range (JASSM-ER)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JASSM-ER Phase I/ II development, Test Missile Procurement (for DT/IT), parts upgrade, software updates, product improvements, and obsolescence.	Various	Lockheed Martin : Orlando, FL	130.427	0.200	Jan 2013	0.350	May 2014	0.500	Jun 2015	-		0.500	49.960	181.437	181.437
C-TIK	SS/CPIF	Lockheed Martin : Orlando, FL	2.064	2.670	Mar 2013	1.527	Mar 2014	6.693	Jan 2015	-		6.693	9.673	22.627	22.627
ESAF	SS/FFP	Lockheed Martin : Orlando, FL	2.285	0.463	Dec 2012	1.224	Jun 2014	1.000	Dec 2014	-		1.000	2.183	7.155	7.155
		Subtotal	134.776	3.333		3.101		8.193		-		8.193	61.816	211.219	211.219

Remarks

Common Test Instrumentation Kits (C-TIK)
Electronic Safe and Arm Fuze (ESAF)

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support. Includes flight test equipment, targets, 96th Test Wing and Range support, and other ground/	Various	96 TW : Eglin AFB, FL	20.164	0.097	Jan 2013	0.060	Mar 2014	0.200	Feb 2015	-		0.200	2.200	22.721	22.721

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	Project (Number/Name) 675356 / *JASSM Extended Range (JASSM-ER)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
flight test support as necessary.															
6 IT/6 OT assets	SS/CPAF	Lockheed Martin : Orlando, FL	12.651	-		-		-		-		-	-	12.651	12.651
12 Operational Test (OT) assets	SS/FFP	Lockheed Martin : Orlando, FL	30.392	-		-		-		-		-	-	30.392	30.392
		Subtotal	63.207	0.097		0.060		0.200		-		0.200	2.200	65.764	65.764

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration (PMA). Provides program office oversight of development and upgrade activities.	Various	PMA : Eglin AFB, FL	1.138	0.058	Oct 2012	0.080	Nov 2013	0.080	Oct 2014	-		0.080	0.640	1.996	1.996
		Subtotal	1.138	0.058		0.080		0.080		-		0.080	0.640	1.996	1.996

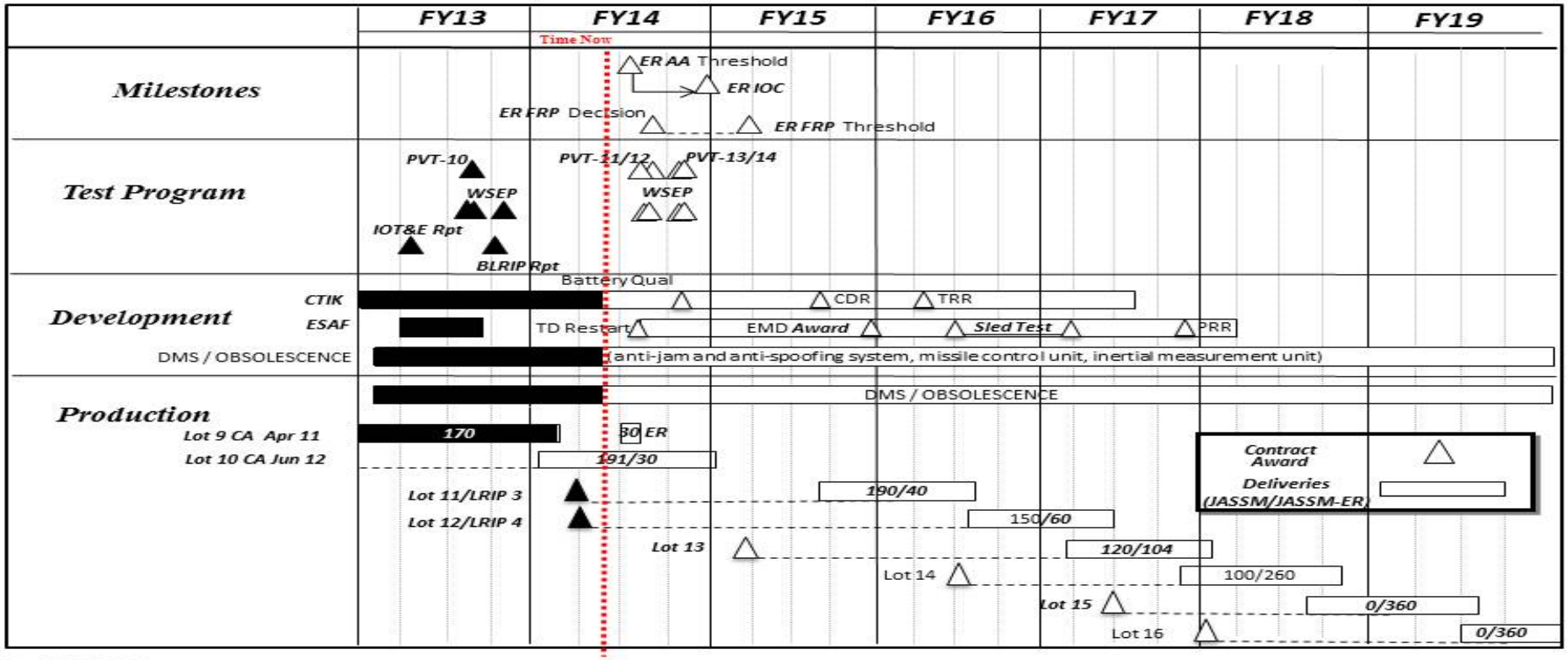
	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	199.121	3.488		3.241		8.473		-		8.473	64.656	278.979	278.979

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	**Project (Number/Name)** 675356 / *JASSM Extended Range (JASSM-ER)*

JASSM/JASSM-ER Top Level Schedule

War-Winning Capability…On Time, On Cost



As of 25 Feb 14

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207325F / *Joint Air-to-Surface Standoff Missile (JASSM)*	**Project (Number/Name)** 675356 / *JASSM Extended Range (JASSM-ER)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
C-TIK Battery Development and Qualification	1	2013	3	2015
C-TIK Destruct Charge Development and Qualification	1	2013	2	2015
C-TIK Integration with JASSM and Test Equipment Development	3	2014	1	2017
C-TIK Critical Design Review (CDR)	3	2015	3	2015
C-TIK Safety Certification	4	2016	4	2016
C-TIK Flight Testing	1	2017	2	2017
ESAF Prototyping	3	2014	4	2016
ESAF Engineering and Manufacturing Development (EMD)	4	2015	1	2018
ESAF Cannon Testing	2	2016	2	2016
ESAF Critical Design Review (CDR)	3	2016	3	2016
ESAF Sled Testing	2	2016	1	2017
ESAF Qualification Testing	4	2016	1	2017
ESAF Flight Testing	3	2017	4	2017
ESAF Production Readiness Review (PRR)	4	2017	1	2018
Diminishing Manufacture Sources and Obsolescence Evaluation/Development	1	2013	4	2019

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207410F / *Air & Space Operations Center (AOC)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	264.584	70.925	22.332	41.066	-	41.066	21.333	17.734	18.081	18.425	Continuing	Continuing
675117: *Integration Development*	264.584	49.329	-	-	-	-	-	-	-	-	-	313.913
675218: *Applications Development*	0.000	15.771	14.796	29.550	-	29.550	11.588	7.496	7.643	7.789	Continuing	Continuing
675220: *Unit Level*	0.000	5.825	5.397	9.100	-	9.100	7.311	7.803	7.956	8.107	Continuing	Continuing
675221: *Personnel Recovery Command and Control (PRC2)*	0.000	-	2.139	2.416	-	2.416	2.434	2.435	2.482	2.529	Continuing	Continuing
MDAP/MAIS Code: N42												

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2014, project number 675117, Integration Development, AOC Increment 10.2, efforts were transferred to PE 0604458F, AOC Increment 10.2, project number 644945, AOC Increment 10.2, in order to improve transparency of ACAT 1 Acquisition programs.

AOC Increment 10.2 received a Milestone B decision 11 October 2013. Beginning in FY 2015, PE 0604458F Air & Space Ops Center project number 644945 AOC Increment 10.2 development efforts are transferred to PE 0605458F Air & Space Ops Center 10.2 RDT&E project number 654945 AOC 10.2 Development, to align post Milestone B development efforts with funding in RDT&E Budget Activity 05, System Development & Demonstration (SDD).

In FY13, AOC 10.2 is PRCP Program Number(PNO) N42. In FY14, AOC 10.2 is PNO N46. Beginning in FY15, AOC 10.2 is PNO N91

A. Mission Description and Budget Item Justification

The Air and Space Operations Center Weapon System (AOC WS) program element provides development of Command and Control (C2) capabilities across the entire spectrum of air and space operations from the strategic to the tactical level. There are four funded projects within the AOC WS program element:

Integration Development supports the AOC WS, AN-USQ-163 Falconer, the senior element of the Theater Air Control System (TACS). AOC WS is the weapon system the Commander, Air Force Forces (COMAFFOR) provides the Combined/Joint Force Air Component Commander (C/JFACC) for planning, executing and assessing theater-wide air and space operations.

Applications Development provides worldwide operational level C2 capabilities, which include: air battle planning, management, and execution; operational level C2 of Integrated Air and Missile Defense (IAMD); as well as personnel recovery C2 in support of DoD, Coalition Partners, and other government agencies.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*

Unit Level (UL) supports two primary mission areas: UL Operations software systems provide both the scheduling and mission preparation activities at the wing and squadron level and the capabilities to report and track the success of each mission and influence decisions on future Air Battle Planning to refine future missions. UL intelligence capabilities ensure detailed threat, target and imagery information readily available to mission commanders and aircrews planning current flight operations.

Personnel Recovery Command and Control (PRC2): Provides an adaptive, networked, decentralized and situationally-appropriate personnel recovery command and control system which supports personnel accountability and recovery missions worldwide. PRC2 delivers a globally accessible, collaborative, interoperable and integrated system to prevent, prepare for and respond to isolating events across the Range of Military Operation in the joint/coalition operating environment. The system collects, stores and delivers personnel/identity biometric data, emergency locator beacon registrations, isolated personnel reports, evasion plans of action, incident reports and other information management capabilities for predictive, preventive and personnel vulnerability analysis/assessment in support of Personnel Recovery across Department of Defense and other national and international entities.

This program is in Budget Activity 7, Operational System Development, these budget activities includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	76.315	22.820	41.578	-	41.578
Current President's Budget	70.925	22.332	41.066	-	41.066
Total Adjustments	-5.390	-0.488	-0.512	-	-0.512
• Congressional General Reductions	-0.100	-0.488			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.397	-			
• Other Adjustments	-3.893	-	-0.512	-	-0.512

Change Summary Explanation

FY 2013: Other Adjustments reduction of -$3.893M due to sequestration.

FY 2014: Project number 675117, Integration Development, AOC Increment 10.2 efforts transferred to PE 0604458F, AOC Increment 10.2, project number 644945, AOC Increment 10.2, in order to improve transparency of ACAT 1 Acquisition programs.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207410F / *Air & Space Operations Center (AOC)*	Project (Number/Name) 675117 / *Integration Development*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675117: *Integration Development*	264.584	49.329	-	-	-	-	-	-	-	-	-	313.913
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2014, project number 675117, Integration Development, AOC Increment 10.2, efforts were transferred to PE 0604458F, project number 644945, AOC Increment 10.2, in order to improve transparency of ACAT 1 Acquisition programs.

In FY 2015, PE 0604458F, Air & Space Ops Center project number 644945 AOC Increment 10.2, development efforts were transferred to PE 0605458F Air & Space Ops Center 10.2 project number 654945, AOC 10.2 Development, in order to align post Milestone B development efforts with funding in RDT&E Budget Activity 05, System Development & Demonstration (SDD).

A. Mission Description and Budget Item Justification

The Air Operations Center Weapons System (AOC WS), AN/USQ-163 Falconer, the senior element of the Theater Air Control System (TACS), is the weapon system the Commander, Air Force Forces (COMAFFOR) provides the Combined/Joint Force Air Component Commander (C/JFACC) for planning, executing, and assessing theater-wide air and space operations. The C/JFACC provides air, space and cyber support to the Combined/Joint Forces Commander (C/JFC) by coordinating, deconflicting and assessing the progress of various weapon systems to advance the C/JFC's campaign. The AOC WS develops operations strategy and planning documents. The weapon system also disseminates tasking orders; executes day-to-day peacetime and combat air, space and cyber operations; and provides rapid reaction to immediate situations by exercising positive control of friendly forces.

The AOC Integration Development program keeps the AOC interoperable, certified, supportable, and compliant through the integration, testing and fielding of new capabilities and sustainment upgrades to the AOC WS baseline. The program supports mission requirements at Geographic and Functional AOCs, as well as Support and Manpower Augmentation units. To keep the AOC current and interoperable with the COCOMs, cyber requirements, and fifth generation weapon system/weapons, the AOC WS program plans to evolve the AOC through the integration and test of progressively improving capabilities. These activities ensure a system of systems engineering perspective for the AOC WS, and include weapon system standardization activities as defined by AOC WS requirements documents. Integrated Air and Missile Defense (IAMD) establishes critical IAMD improvements in the AOC WS to maximize the allocation, planning, and execution of IAMD. The Modernization contractor, which was awarded the Modernization contract on 25 October 2011, has commenced with AOC 10.2 pre-Engineering and Manufacturing Development (EMD) activities, including a Systems Requirements Review (SRR), an Interim Design Review (IDR), and a delta-Preliminary Design Review (delta-PDR). In accordance with AOC 10.2 Milestone Decision Authority (MDA) direction (23 Jun 2010), the AOC 10.2 Modernization program conducted prototyping and Limited Early Install (LEI) activities through an iterative build methodology prior to Milestone B (MS B) to reduce integration risk and improve user feedback in the acquisition process.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675117 / *Integration Development*

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

In FY13, AOC 10.2 is PRCP Program Number (PNO) N42. In
FY14, AOC 10.2 is PNO N46. Beginning in FY15, AOC 10.2 is PNO N91

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: AOC WS Inc 10.2 ***Description:*** AOC 10.2 infrastructure modernization and mission capability integration. Development of a robust, open, Net-Centric infrastructure with a Services Oriented Architecture. ***FY 2013 Accomplishments:*** Accomplished pre-EMD activities on the Modernization contract to obtain MDA approved MS B. The program conducted system prototyping, LEI activities, Warfighter Assessment Workshops, and Delta Preliminary Design Review (PDR) to support risk reduction and operational feedback. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A	48.736	-	-
Title: AOC WS Inc 10.2 Test and Evaluation ***Description:*** Test and Evaluation ***FY 2013 Accomplishments:*** Planned and implemented comprehensive testing (in-plant integration and test, functional testing, security testing, etc.), Developmental Test and Evaluation (DT&E), and Operational Test and Evaluation (OT&E) on the AOC 10.2 baseline. Efforts included test planning, conducting, and documentation review. ***FY 2014 Plans:*** N/A	0.593	-	-
Accomplishments/Planned Programs Subtotals	49.329	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675117 / *Integration Development*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE: BA04: PE 0604458F: *AOC Increment 10.2*	-	58.861	-	-	-	-	-	-	-	-	194.370
• RDTE: BA05: PE 0605458F: *AOC Increment 10.2*	-	-	85.938	-	85.938	47.946	-	-	-	-	135.509
• OPAF: BA03: Line Item # 834530: *Air & Space Operations Ctr - WPN SYS*	27.623	22.974	23.690	-	23.690	12.033	12.439	7.524	7.780	Continuing	Continuing
• OPAF: BA03 Line Item # 834560: *Air and Space Operations Ctr Inc.10.2*	-	-	-	-	-	24.405	51.283	43.585	32.313	286.340	437.926

Remarks

D. Acquisition Strategy

The acquisition strategy builds on existing capabilities using evolutionary acquisition to standardize, modernize and sustain the AOC. The AOC Modernization Contract was competitively awarded on 25 October 2011, but due to contract protests and associated delays, the actual start date was 20 December 2011. The Modernization contractor is using a system of systems perspective, and is following systems engineering rigor, to evolve AOC to a Net-Centric environment, compliant with DoD Services Oriented Architecture (SOA) standards.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207410F / *Air & Space Operations Center (AOC)*	Project (Number/Name) 675117 / *Integration Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
10.1 Integration & Version Upgrades	C/CPAF	Lockheed Martin-WSI : Colorado Springs, CO	67.247	-		-		-		-		-	-	67.247	67.823
10.1 Integration & Version Upgrades (Organic)	Various	Various : Various,	3.396	-		-		-		-		-	-	3.396	3.343
IAMD	TBD	TBD : TBD,	1.490	-		-		-		-		-	-	1.490	17.762
10.2 Modernization	Various	Various : Various,	22.969	8.553		-		-		-		-	-	31.522	-
10.2 Modernization Contract	C/Various	Northrop Grumman : Herndon, VA	85.863	31.019	Dec 2012	-		-		-		-	-	116.882	119.000
Training	C/Various	Various : Various,	11.471	-		-		-		-		-	-	11.471	-
Prototyping	C/CPFF	Jacobs : Hanscom AFB, MA	20.559	-		-		-		-		-	-	20.559	7.000
		Subtotal	212.995	39.572		-		-		-		-	-	252.567	214.928

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test 10.1 Integration and Version Upgrades	Various	Various : Various,	7.421	-	Nov 2012	-		-		-		-	-	7.421	-
Test 10.2 Modernization	Various	Various : Various,	0.300	0.593	Oct 2012	-		-		-		-	-	0.893	-
		Subtotal	7.721	0.593		-		-		-		-	-	8.314	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675117 / *Integration Development*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/ Various	MITRE : Bedford, MA	19.459	4.268	Oct 2012	-		-		-		-	-	23.727	-
Program Management Administration	Various	Various : Hanscom AFB, MA	24.409	4.896	Oct 2012	-		-		-		-	-	29.305	-
		Subtotal	43.868	9.164		-		-		-		-	-	53.032	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	264.584	49.329		-		-		-		-	-	313.913	-

Remarks

In FY 2014, project number 675117, Integration Development, AOC Increment 10.2, efforts were transferred to PE 0604458F, project number 644945, AOC Increment 10.2, in order to improve transparency of ACAT 1 Acquisition programs.

In FY 2015, PE 0604458F, Air & Space Ops Center project number 644945 AOC Increment 10.2, development efforts were transferred to PE 0605458F Air & Space Ops Center 10.2 project number 654945, AOC 10.2 Development, in order to align post Milestone B development efforts with funding in RDT&E Budget Activity 05, System Development & Demonstration (SDD).

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675117 / *Integration Development*

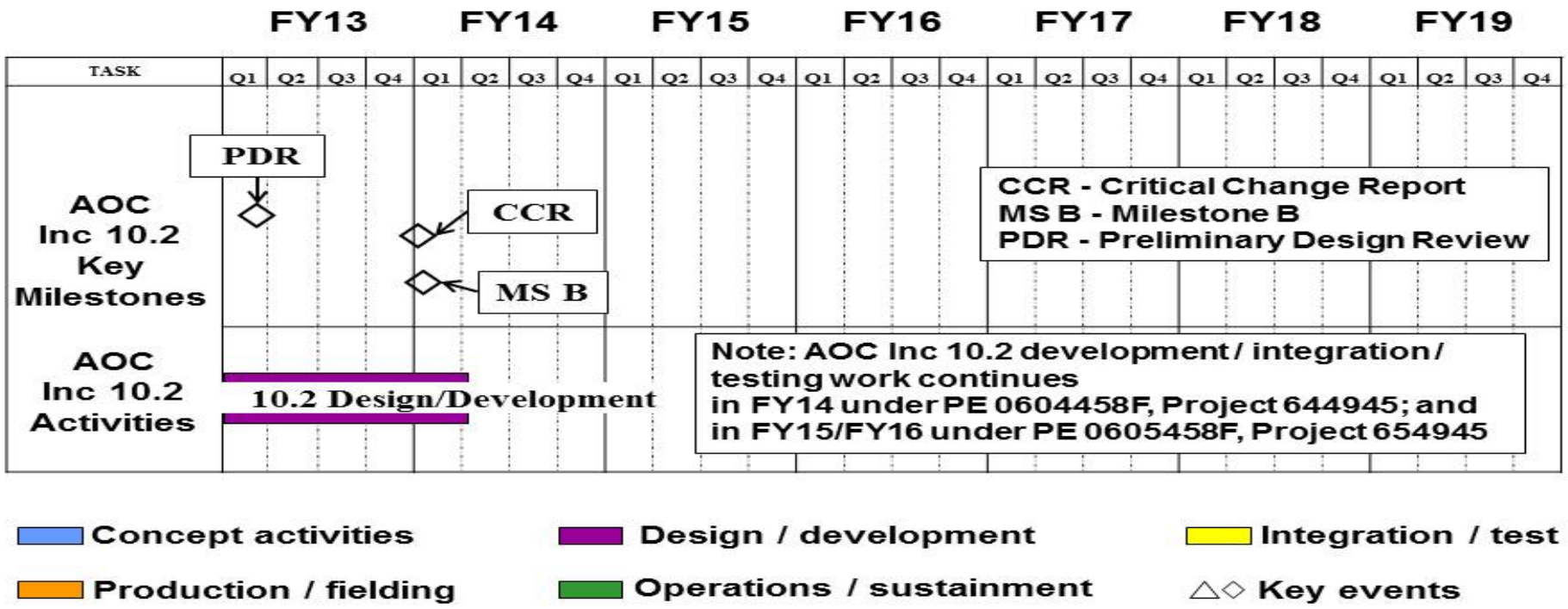


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675117 / *Integration Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AOC Increment 10.2 Preliminary Design Review (PDR)	1	2013	1	2013
AOC Increment 10.2 Critical Change Report (CCR)	1	2014	1	2014
AOC Increment 10.2 Milestone B (MS B)	1	2014	1	2014
AOC Increment 10.2 Design / Development	1	2013	2	2014

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207410F / *Air & Space Operations Center (AOC)*	Project (Number/Name) 675218 / *Applications Development*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675218: *Applications Development*	-	15.771	14.796	29.550	-	29.550	11.588	7.496	7.643	7.789	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This project funds operational development necessary to acquire, modify, and sustain segments of Air Force's Command and Control (C2) capabilities and services. Applications Development provides worldwide operational capabilities for AF C2 in support of DoD, Coalition Partners, and other government agencies. These efforts focus on, but are not limited to, support of the Joint Forces Air Component Commander (JFACC) that provides air, space and cyber support as presented to the AOC and to other C2 systems. Applications Development efforts deliver capabilities identified in the Joint Command and Control (JC2) Capability Development Document (CDD) (2013). Applications Development activities include but are not limited to the following: 1) Command and Control Air Operations Suite-Command and Control Information Services (C2AOS-C2IS) needs identified in the Capability Definition Package (CDP) (2012). C2AOS-C2IS I creates web-enabled information services to expose air operations data using standardized schemas, such as those developed by the Air Operations Community of Interest (AO COI). C2AOS-C2IS I also develops, matures, fields, and maintains modular net-centric C2 applications for air battle planning, execution, and management functions to include Network Enabled Weapons (NEW); 2) Command and Control Air Operations Suite-Command and Control Information Services II (C2AOS-C2IS II) will focus on but not be limited to, the remainder of CDP and Theater Battle Management Core Systems-Force Level (TBMCS-FL) functionality not addressed in C2AOS-C2IS I as well as providing new C2 capabilities for planning and execution of 4th & 5th Generation Fighter Platforms, interoperability with other evolving Global Command & Control System Family of Systems (GCCS FoS) and other Service programs, and for Force Level data migration; and 3) Personnel Recovery Command and Control (PRC2) program which develops and delivers tools and services for collaborating, planning and managing search and rescue efforts, and disseminating related information. The Joint Personnel Recovery Initial Capabilities Document (ICD) (2012) articulates capabilities needed for PRC2.

Core activities for Applications Development include but are not limited to the following: 1) developing capabilities to support planning and replanning of the Air Battle Plan; generation and dissemination of the Air Tasking Order; defense planning and execution; targeting; weaponeering; personnel recovery tasks; other applications and services supporting C2 in the joint environment; 2) providing support to and participating in the Air Operations Community of Interest (AO COI) to improve air operations information interoperability among all joint and coalition systems within the Air Operations (AO) domain; 3) developing and assessing C2 air, space, intelligence, surveillance, reconnaissance, and cyber technologies that will improve joint and coalition warfighter interoperability, including participation in North Atlantic Treaty Organization (NATO) and Coalition interoperability exercises, demonstrations, trials, and activities; 4) transitioning existing C2 capabilities to a net-centric environment; and 5) improving operational level C2 of Integrated Air and Missile Defense (IAMD). Applications Development efforts include evaluation and maturation of future air, space, and cyber C2 concepts identified through research, risk reduction, prototyping, current operations, exercises, and demonstrations.

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

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675218 / *Applications Development*

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: NATO	0.430	0.435	0.430
Description: NATO and International Cooperation Research and Development. Efforts to develop air, space, intelligence, surveillance, reconnaissance and cyber Information Exchange Requirements and capabilities between U.S. and NATO / Coalition systems to promote interoperability. ***FY 2013 Accomplishments:*** Developed technologies to improve joint and coalition warfighter capability. ***FY 2014 Plans:*** Continue to develop technologies that improve joint and coalition warfighter capability. ***FY 2015 Plans:*** Continue with the development of technologies that improve joint and coalition warfighter capability.			
Title: C2AOS-C2IS I	11.827	12.384	20.831
Description: C2AOS-C2IS I develops modular net-centric C2 applications for air battle planning, execution and management functions and creates web-enabled information services to expose air operations data in TBMCS applications and systems using standardized schemas including Capablility Packages (CP) 1 & 2. - CP 1: Air Tasking Order Management System (ATOMS), Request Information Services for Command and Control (RISC2) & Network Enabled Weapons (NEW) - CP 2: IAMD Planner and Airspace Management Application - Airspace Information Service (ASMA - ASIS) ***FY 2013 Accomplishments:*** Awarded Fixed Price Incentive Firm contract 21 Dec 2012 for ATOMS and Cost Plus Incentive Fee contract for 20 Dec 2012 Request Information Services for C2 (RISC2) capabilities. Competed and awarded follow-on contract(s) for but not limited to the development of Air Space Management Application - Air Space Information Service (ASMA-ASIS) and C2 of IAMD capabilities. ***FY 2014 Plans:*** Continue with the development of but not limited to ATOMS, RISC2, ASMA-ASIS and C2 of IAMD capabilities. Beginning testing and potential fielding of ATOMS & RISC2. ***FY 2015 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675218 / *Applications Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Will continue with the development of but not limited to ATOMS, RISC2, ASMA-ASIS and C2 of IAMD capabilities. Beginning testing and potential fielding of ATOMS, RISC2, ASMA-ASIS & IAMD PLANNER.			
Title: PRC2 ***Description:*** PRC2 develops and delivers tools and services for collaborating, planning and managing search and rescue efforts, and disseminating related information. The system collects, stores and delivers personnel/identity biometric data, emergency locator beacon registrations, isolated personnel reports, evasion plans of action, incident reports and other information management capabilities for predictive, preventive and personnel vulnerability analysis/assessment in support of Personnel Recovery across Department of Defense and other national and international entities. ***FY 2013 Accomplishments:*** Tested and supported the fielding decision for PRMS Mission Manager v1.0 which provides mission management capabilities, captures data regarding events, collaborates and automates event information collection for incident reports. Refined requirements for multiple increments of Mission Manager with a Joint Working Group to identify Air Force other Services capability needs/priorities. ***FY 2014 Plans:*** In FY 2014, Personnel Recovery Command and Control (PRC2), efforts can be found under project number 675221, Personnel Recovery Command and Control (PRC2). ***FY 2015 Plans:*** N/A	2.170	-	-
Title: C2AOS-C2IS II ***Description:*** C2AOS-C2IS II develops modular net-centric C2 applications for air battle planning, execution and management functions and creates web-enabled information services to expose air operations data in TBMCS applications and systems using standardized schemas. As well as providing new C2 capabilities for planning, execution and interoperability with other evolving GCCS FoS and other Service programs, and for Force Level data migration. ***FY 2013 Accomplishments:*** Developed the remainder of TBMCS-FL functionality not addressed in C2AOS-C2IS I requirements, and new C2 capabilities for planning and execution of 4th & 5th Generation Fighter Platforms, NEW, interoperability with other evolving GCCS FoS and other Service programs, and Force Level data migration. ***FY 2014 Plans:***	0.298	0.877	6.537

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675218 / *Applications Development*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Planning for the development of the remainder of TBMCS-FL functionality as well as interoperability with other evolving GCCS FoS and other Service programs, and for Force Level data migration. Potential opportunities to conduct protyping to allow for better requirements refinement. ***FY 2015 Plans:*** Will continue to plan for and execute the development of the remainder of TBMCS-FL functionality as well as interoperability with other evolving GCCS FoS and other Service programs, and for Force Level data migration. Potential opportunities to conduct protyping to allow for better requirements refinement.			
Title: Test and Evaluation ***Description:*** Test and Evaluation ***FY 2013 Accomplishments:*** Test and Evaluation focused on DT&E and OT&E, which included test planning, conduct and documentation review. ***FY 2014 Plans:*** Test and Evaluation continuing to focus on DT&E and OT&E, to include test planning, conduct and documentation review. ***FY 2015 Plans:*** Test and Evaluation will continue to focus on DT&E and OT&E, to include test planning, conduct and documentation review.	1.046	1.100	1.752
Accomplishments/Planned Programs Subtotals	15.771	14.796	29.550

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA03: Line Item # 834520: *Theater Battle Management C2 System*	1.205	-	-	-	-	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Projects will be awarded following full and open competition and will use an evolutionary acquisition strategy based on incremental development leveraging the C2 Applications and Information Services Development (C2AD) Indefinite Delivery/Indefinite Quantity (ID/IQ) contract.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675218 / *Applications Development*

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675218 / *Applications Development*

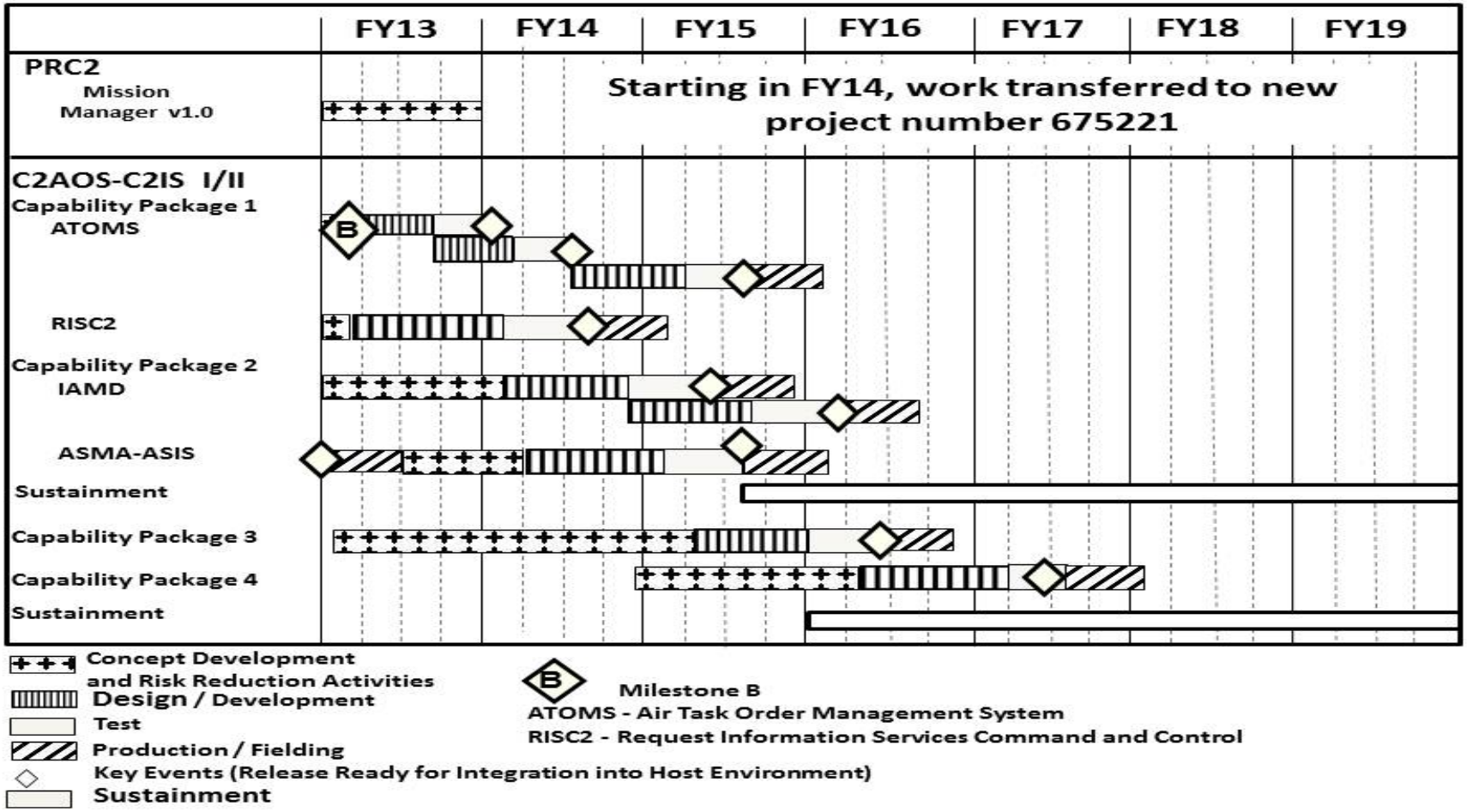


Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207410F / *Air & Space Operations Center (AOC)*	Project (Number/Name) 675220 / *Unit Level*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675220: *Unit Level*	-	5.825	5.397	9.100	-	9.100	7.311	7.803	7.956	8.107	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

This project funds operational development to develop, integrate, field, and maintain Unit Level / Unit Command and Control (UL/UC2) as an evolving sequence of increasing software capabilities that support the execution of the air battle plan and the air tasking order message received from the AOC. UL/UC2 operations software systems meet needs identified in the TBMCS Operational Requirements Document (ORD) (2001) by providing both the scheduling and mission preparation activities at the wing, group and squadron level, and the capabilities to report and track the success of each mission and influence decisions on future air battle planning. UL/UC2, also referred to as Unit Command and Control (UC2), is fielded to the Wing Operations Center (WOC), the Maintenance Operations Center (MOC), the Squadron Operations Center (SOC), and many other work-centers. UC2 requirements will be identified using the system modification request process.

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Software Development	5.120	4.997	8.550
Description: UL/UC2 and UC2 capabilities development/integration. ***FY 2013 Accomplishments:*** Completed testing of UL/UC2 Ops Increment 2. Finished planning activities for UC2 MR1 which provided migration of UL/UC2 into a service oriented infrastructure capable of meeting the Net-Ready key performance parameter, implementing elements of the Installation Control Center (ICC) Enabling Concept. ***FY 2014 Plans:*** Writing the UC2 MR1 System Requirements Document and program office cost estimate. Planning for and awarding of the contract for UC2 MR1. UC2 MR1 will provide service oriented infrastructure capable of meeting the Net-Ready key performance parameters. Accelerating should cost initiatives for virtualization and open source replacement of application server software into Inc2 Service Patch 3 (SP3). ***FY 2015 Plans:*** Complete development of UC2 MR1. Begin testing of MR1 and prepare for fielding. Start UC2 MR2 planning.			
Title: Testing and Test Support	0.705	0.400	0.550

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675220 / *Unit Level*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Testing and test support activities. ***FY 2013 Accomplishments:*** Completed testing and test support activities for UL/UC2 Ops Increment 2 and Inc 2 Service Pack 1 (SP1). ***FY 2014 Plans:*** Continue testing and evaluation involved in UL/UC2 Inc 2 SP2. Starting Inc 2 SP3 testing. ***FY 2015 Plans:*** Will continue testing and evaluation of UL/UC2 Inc 2 SP3. Start testing on UC2 MR1.			
Accomplishments/Planned Programs Subtotals	5.825	5.397	9.100

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA03: Line Item # 834520: *Theater Battle Management C2 System*	3.873	3.247	3.825	-	3.825	3.950	4.161	4.235	4.311	Continuing	Continuing

Remarks

D. Acquisition Strategy

Projects will be awarded following full and open competition and will use an evolutionary acquisition strategy based on incremental development while incorporating agile testing principals

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675220 / *Unit Level*

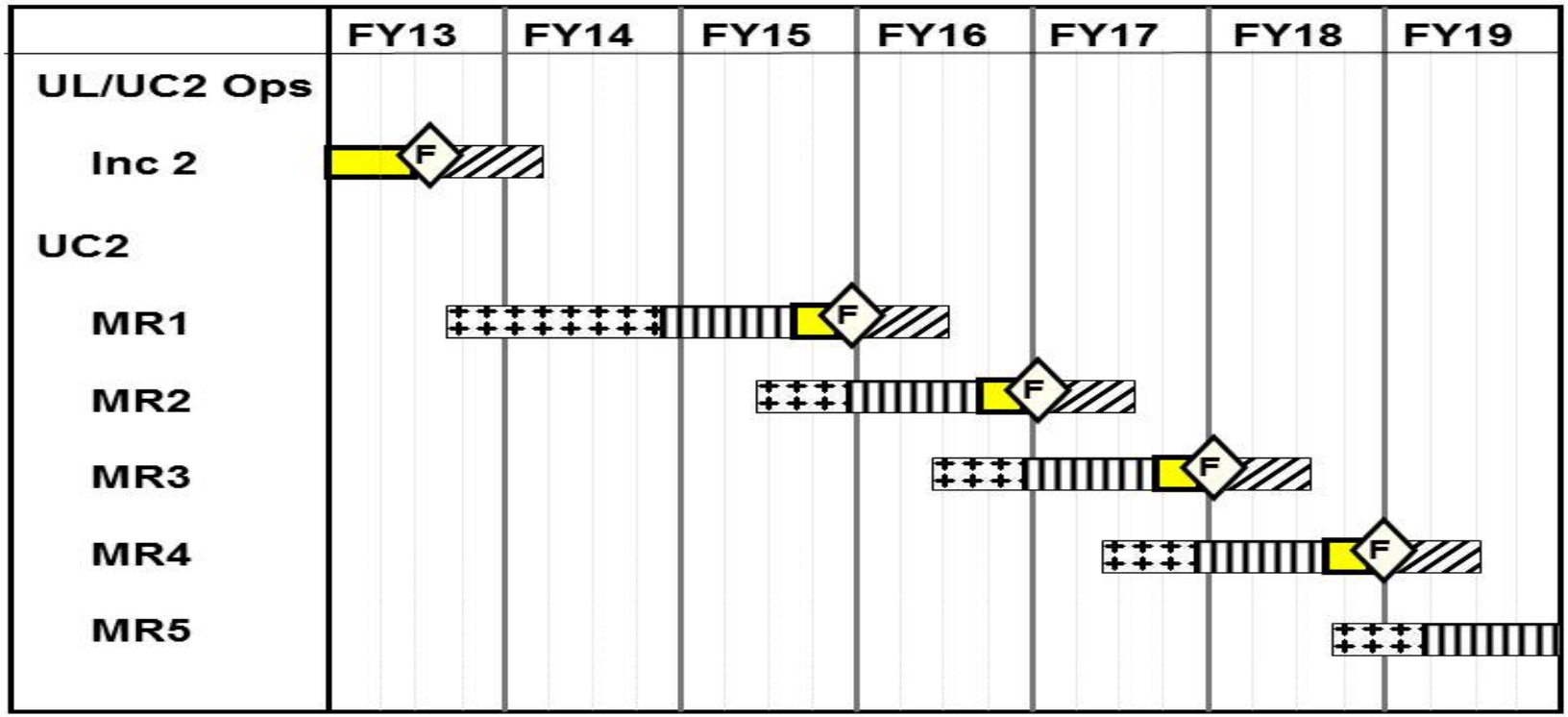


Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207410F / *Air & Space Operations Center (AOC)*	Project (Number/Name) 675221 / *Personnel Recovery Command and Control (PRC2)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675221: *Personnel Recovery Command and Control (PRC2)*	-	-	2.139	2.416	-	2.416	2.434	2.435	2.482	2.529	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

FY 2013 Personnel Recovery Command and Control (PRC2) efforts can be found under project number 675218, Applications Development, Personnel Recovery Command and Control (PRC2).

A. Mission Description and Budget Item Justification

This project funds operational development necessary to acquire, modify, and sustain a segment of Air Force's C2 capabilities and services associated with Personnel Recovery. The Personnel Recovery Command and Control (PRC2) program develops and delivers tools and services for planning, collaborating and managing search and rescue efforts, as well as disseminating related information to all personnel recover mission coordinators across PR network. PRC2 provides an adaptive, networked, decentralized and timely situational awareness information for personnel recovery supporting personnel accountability and recovery missions worldwide. PRC2 delivers a globally accessible, collaborative, interoperable and integrated system to prevent, prepare for and respond to isolating events across a broad spectrum of US government which may include in the joint/coalition military and civilian rescue mission. The Joint Personnel Recovery (JPR) ICD (2012) articulates capabilities needed for PRC2.

The system collects, stores and delivers personnel/identity biometric data, emergency locator beacon registrations, isolated personnel reports, evasion plans of action, incident reports and other information management capabilities. The information is used for predictive, preventive and personnel vulnerability analysis and assessment in support of Personnel Recovery across Department of Defense and other national and international entities.

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: PRC2	-	2.039	2.216
Description: Personnel Recovery Command and Control (PRC2) developing and delivering tools and services for planning and managing search and rescue efforts, and disseminating related information.			
FY 2013 Accomplishments: N/A			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675221 / *Personnel Recovery Command and Control (PRC2)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Developing and delivering Personnel Recovery Mission Software (PRMS) 2.1.7 Maintenance Release: Provides compatibility with Internet Explorer 9/10. Developing and delivering PRMS 2.1.8 web services to enable net-centric capability exposing data to joint users and to support future PR Mission Manager (PRMM) development. Developing and delivering PRMM initial capability, Search Widgets: Provides the capability to query the PRMS/Joint SARSAT Electronic Tracking System (JSETS) database without logging into the PRMS website. Search Widgets also provide advanced search definitions not available via the PRMS website. Continue developing PRMM Capability Mission Folders: Allows for management and storage of all PR incident information in a single case file. ***FY 2015 Plans:*** PRMS 3.1.0 development will continue in FY15. This will normalize the PRMS database and will provide an increased net-centric capability while reducing lifecycle costs. PRMS 3.2.0 virtualization development will continue in FY15. Virtualization will provide increased availability and more robust security while decreasing sustainment costs. Will continue to develop PRMS 3.3.0 Mission Folders. Will develop PRMS 4.0 Mission Manager creating a collaborative environment for the Joint Personnel Recovery Coordinator (JPRC)/Personnel Recovery Coordinator Cell to access situational awareness data to recover isolated personnel. This will provide situational awareness including geo-spatial visualization of IP location, weather, threat environment, airspace, and Air Tasking Order data.			
Title: Test and Evaluation ***Description:*** Test and Evaluation ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Continuing Test and Evaluation focusing on testing activities to integrate PRMS Inc 2 capabilities to include web-services and PR Search Widget. Bringing test suites up to PRMS 2.1.8 baseline. Follow on activities focusing on finalizing test documentation to support the development of Mission Manager in the Joint environment. ***FY 2015 Plans:*** Continuing Test and Evaluation will focus on test activities to field 3.1.0 Tech Refresh, 3.2.0 Virtualization, and 3.3.0 Mission Folder capability. Follow on activities will focus on finalizing test documentation to support the development of Mission Manager in the Joint environment	-	0.100	0.200
Accomplishments/Planned Programs Subtotals	-	2.139	2.416

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675221 / *Personnel Recovery Command and Control (PRC2)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA03: Line Item # 834520: *Theater Battle Management C2 System*	-	1.240	1.261	-	1.261	1.270	1.279	1.302	1.325	Continuing	Continuing

Remarks

D. Acquisition Strategy

Projects will be awarded following full and open competition and will use an evolutionary acquisition strategy based on incremental development.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207410F / *Air & Space Operations Center (AOC)*	**Project (Number/Name)** 675221 / *Personnel Recovery Command and Control (PRC2)*

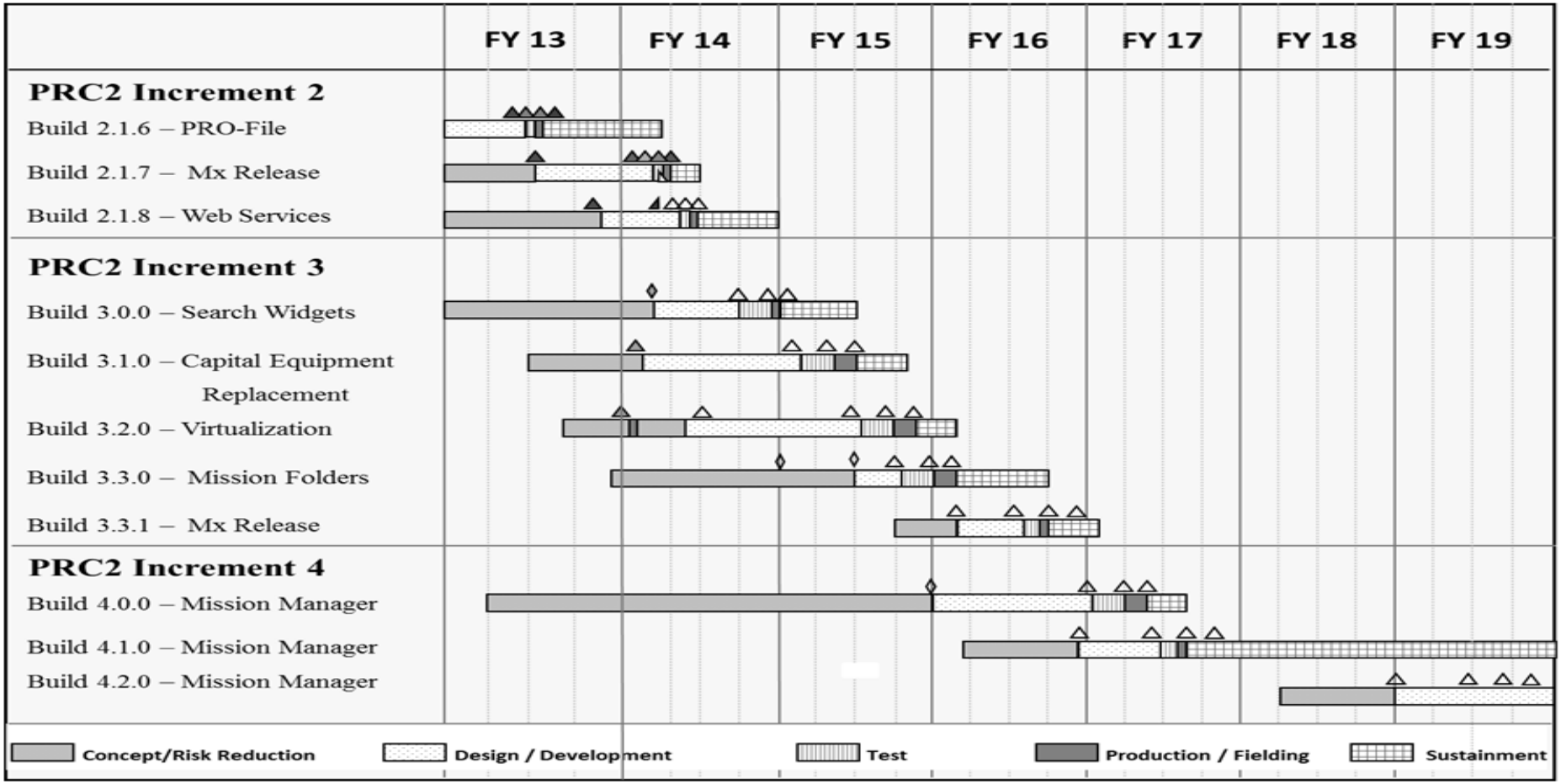


Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207412F / *Control and Reporting Center (CRC)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	8.960	6.993	0.552	-	0.552	0.563	10.201	11.790	24.269	Continuing	Continuing
67485L: *Theater Air Control System Imp (TACSI)*	-	8.960	6.993	0.552	-	0.552	0.563	10.201	11.790	24.269	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 393

The FY 2015 OCO Request will be submitted at a later date.

Note

A. Mission Description and Budget Item Justification

The Control and Reporting Center (CRC) program element provides for development and integration of new capabilities, upgrades, and modifications required to maintain capability due to replacement of diminshing manufacturing sources related to mobile ground-based capabilities. The CRC is a ground-based theater air control system (TACS) surveillance and battle management command and control (BMC2) element. It consists of facilities, equipment, and people. It is a tailorable, modular, transportable, sustainable, and persistent weapon system employed at the tactical level to support air and surface operations. The CRC projects include development of Theater Air Control Systems Improvement (TACSI) capabilities. These efforts include, but are not limited to, the development and modification of the AN/TYQ-23 Operations Module (OM) and the AN/TRC-215 Remote Radio Secure Voice System (RRSVS).

AN/TYQ-23 OM is a low density/high demand (LD/HD) rapidly deployable ground-based C2 asset. This automated, computer-based information system provides operators the real-time battlespace picture necessary to plan, direct, and control tactical air operations and airspace management tasks. AN/TRC-215 RRSVS is a mobile, vehicle-mounted voice radio and OM-interface unit. The RRSVS allows real-time, secure voice communication between aircraft operating in the battlespace and ground-based battle management C2 operators located in the OM of the CRC.

Activities also include studies and analysis supporting current and future program planning and future development of open system architecture requirements.

This program is in Budget Activity 07, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207412F / *Control and Reporting Center (CRC)*	

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	8.653	7.029	0.559	-	0.559
Current President's Budget	8.960	6.993	0.552	-	0.552
Total Adjustments	0.307	-0.036	-0.007	-	-0.007
• Congressional General Reductions	-	-0.036			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-0.012	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.039	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.720	-	-0.007	-	-0.007

Change Summary Explanation

FY13 Reprogramming was used to purchase a 2nd Production Representative Unit for the AN/TYQ-23 Operations Module Modernization

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: OM Mod	8.032	6.983	0.552
Description: The OM Mod Upgrade effort's activities include, but are not limited to, the engineering manufacturing and development of the OM Mod Units, Developmental and Operational Test (DT/OT), integration and technical data package development. ***FY 2013 Accomplishments:*** Began the OM Mod Upgrade effort to include: the engineering manufacturing and development of the OM Mod Production Representatve Units (PRUs), pre-test work and technical data package development. ***FY 2014 Plans:*** Continuing the OM Mod Upgrade effort to include: the development of OM Mod PRUs,integration, completing DT/OT and the completion of the technical data package. ***FY 2015 Plans:*** Will complete the OM Mod Upgrade effort to include: complete any delta testing required for the PRUs.			
Title: RRSVS	0.928	0.010	-
Description: RRSVS activities include, but are not limited to, the development, testing and integration of software upgrades. ***FY 2013 Accomplishments:***			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207412F / *Control and Reporting Center (CRC)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Completed the development and testing of software upgrades in support of RRSVS. ***FY 2014 Plans:*** Completing the integration efforts prior to the start of production activities in support of RRSVS. ***FY 2015 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	8.960	6.993	0.552

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA07: Line Item # 833040: *Control and Reporting Center*	23.452	10.761	50.033	-	50.033	22.860	40.067	9.627	-	Continuing	Continuing

Remarks

E. Acquisition Strategy

The CRC program is utilizing evolutionary development to modernize and further advance current and future battlespace awareness and tactical BMC2 capabilities. A variety of contract types will be utilized depending on type of effort. Contracting strategy will include but is not limited to open competition, sole source contracts, and interdepartmental purchase requests.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207412F / *Control and Reporting Center (CRC)*	**Project (Number/Name)** 67485L / *Theater Air Control System Imp (TACSI)*

U.S. AIR FORCE

CRC Program Schedule

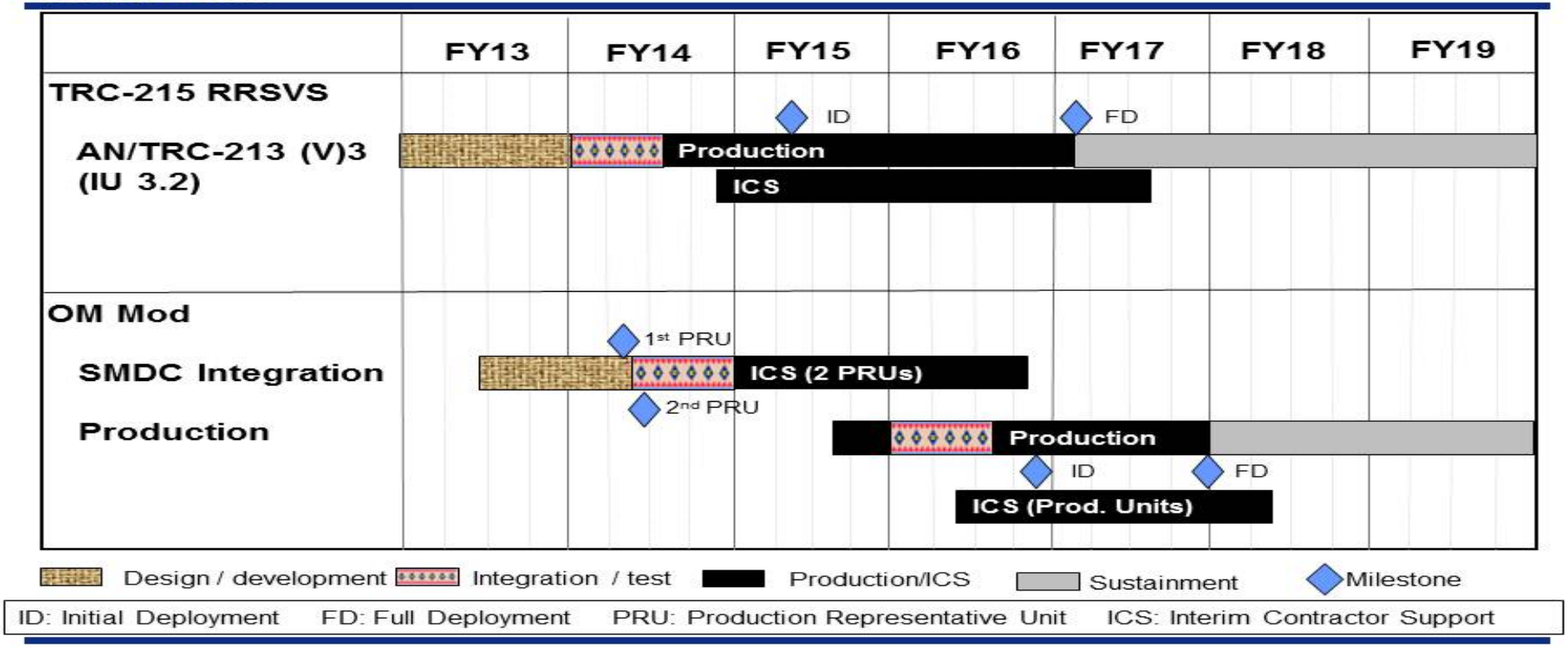


Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207417F / *Airborne Warning and Control System (AWACS)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	3,706.552	47.171	148.369	180.804	-	180.804	124.987	125.375	85.471	82.751	Continuing	Continuing
67411L: *Airborne Warning & Control System (AWACS)*	3,706.552	47.171	148.369	180.804	-	180.804	124.987	125.375	85.471	82.751	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
MDAP/MAIS Code: 277												

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Mission: Airborne Warning and Control System (AWACS) is the premier airborne platform providing battle management (BM)/command and control (C2) for Commander In Chief and combatant commander tasking in joint, allied, and coalition operations, humanitarian relief, and homeland defense. AWACS provides a real-time picture of friendly, neutral, and hostile air activity. Its capabilities include all-altitude/all-weather surveillance of the battle space; early warning of enemy actions; a real-time ability to find, fix, track, and assess airborne or maritime threats; and detection, location, and identification of electronic emitters.

1. E-3 Block 40/45 is replacing AWACS 1970's vintage mission systems that are experiencing Diminishing Manufacturing Sources (DMS) issues, are difficult and expensive to upgrade, and limit overall AWACS system performance. The Block 40/45 upgrade will improve integration, quality and timeliness of sensor data to the shooter, improve Combat Identification (CID), improve AWACS contribution to Time Critical Targeting via Data Link Infrastructure (DLI), improve electronic support measures processing and enable more effective, faster upgrades via an open-system, Ethernet-based architecture. This upgrade also updates the ground support infrastructure, training systems [(Mission Crew Training Set (MCTS), Mission Computing Maintenance Trainer (MCMT) and the Airborne Training Set (ATS)], data links and the Avionics Integration Support Facility (AISF) all located at Tinker Air Force Base.

2. E-3 Next Generation Identification Friend or Foe (NGIFF) provides AWACS with enhanced IFF interrogator operation to add a more secure Mode 5 capability. The National Security Agency (NSA) declared IFF Mode 4 unsecure and obsolete on 5 Nov 2003. Joint Requirements Oversight Council Memo 047-07 requires IFF Mode 5 interrogation capability by FY14. The new Mode 5 interrogation capability extends the effective range of the AWACS interrogator, while helping discriminate against closely spaced cooperative targets. NGIFF developed and integrated a basic Mode 5 capability on Block 30/35 starting in FY09 and began developing a full Mode 5 capability on Block 40/45 in FY11. Hardware will be common between the Block 30/35 and Block 40/45 platforms. NGIFF will also integrate Mode S, a civilian air traffic control capability residing in the NGIFF hardware, as funding allows.

3. E-3 DMS Replacement of Avionics for Global Operations and Navigation (DRAGON) completes the FAA/International Civil Aviation Organization (ICAO)/ EUROCONTROL (European Organization for the Safety of Air Navigation) air traffic control mandated safety of flight capabilities. This program will provide the E-3 fleet with the flight instruments and other avionics for the Required Navigation Performance (RNP), and the surveillance and communication capabilities necessary to maintain continued critical unrestricted access to global airspace. Non-compliance will result in airspace restrictions and denials that will impact AWACS ability to support worldwide responses to situations requiring immediate on-scene Command and Control (C2) Battle Management (BM). The DRAGON modifications replace

the existing Diminishing Manufacturing Sources (DMS) Global Positioning System (GPS) Integrated Navigation System (GINS) with a modern Flight Management System (FMS) that will accommodate new capabilities including Mode 5 IFF and Joint Mission Planning System (JMPS). Also included as part of the modification is the addition of data link communications, voice and data link digital radios, and improved visual displays. Emphasis on employment of Commercial-Off-The-Shelf (COTS) avionics is expected to lower cost, reduce the tech refresh cycle, and enhance life cycle management. Replacement of critical avionics subsystems that became unsustainable beginning in 2010 is included in the DRAGON program. The Engineering and Manufacturing Development (EMD) phase of DRAGON is being executed as a Cooperative Program between the US and NATO.

4. E-3 Electronic Protection (EP): The EP program funds the development and retrofit of the E-3 AWACS radar processing capability including risk reduction and EMD activities. EP will provide improved radar processing in a specific flight environment to meet a classified requirement. Processing will initially address radar modes comprising 90% of operational AWACS radar usage. EP will install an adjunct processor that works in parallel with the current Radar System Improvement Program (RSIP) system. The EP-processed radar picture will appear on the operator screen in place of the current RSIP output when the EP radar modes are selected. The program will buy COTS equipment starting in FY17 including initial spares.

5. E-3 Training, Support, and Infrastructure (TSI) provides continuing system engineering and management support for AWACS modernization and enhancement. These activities include managing the AWACS developmental infrastructure, AWACS Development Integration Test Support (ADITS), support for equipment concurrency, modernization planning/analysis, trainer/simulator integration and concurrency, as well as the Avionics Integration Laboratory (AIL) and Advanced Development Lab #2 (ADL-2). The contractor maintained and operated E-3 Radar Systems Integration Lab/Software Development Facility (SIL/SDF) provides US, Foreign Military Sales (FMS), and international customers with a functioning E-3 radar configuration to support radar development, production, and sustainment programs. TSI efforts allow new support equipment technologies and test strategies to be analyzed to ensure concurrent capability to sustain existing, modified, and upgraded E-3 equipment. TSI supports trainer/simulator concurrency analysis and requirements definition to ensure trainers and simulators are kept current with the AWACS baseline. The overall Development Test and Evaluation (DT&E) test infrastructure supports development, production, and sustainment projects, and maintains facilities to support AWACS aircraft during system and sub-system testing at Boeing Field, WA. Funding is shared between Research, Development, Test, and Evaluation (RDT&E) and production funds. The TSI assets also support multiple international Airborne Early Warning and Control (AEW&C) projects on a maintenance fee basis, including projects for France, Saudi Arabia, United Kingdom, Japan, and North Atlantic Treaty (NATO) AEW&C efforts.

6. E-3 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR): C2ISR system improvements investigate and develop future capabilities of the AWACS weapon system, or next C2ISR platform. These efforts also include investigation, analysis and development to ensure that AWACS successfully integrates with joint and coalition forces in a net-centric environment. C2ISR primarily supports pre-systems acquisition in the areas of material solution analysis and technology development. This is accomplished by prototyping and demonstrating capabilities required by the warfighter but also includes developing an E-3 Modernization & Sustainment Roadmap that projects user capability needs, as well as material solutions for the user needs.

7. E-3 Internet Protocol Enabled Communication (IPEC): IPEC will provide the Block 40/45 E-3 with a wideband communications capability to connect to the Global Information Grid and will support net-centric operations/warfare. The E-3 lacks an IP-enabled communication capability. As a result, the E-3 is not able to support a shortened digitized kill-chain of time sensitive targets. IPEC will provide a roll-on/roll-off IP-enabled communications package supporting warfighter identified requirements for higher bandwidth SIPRNet and multi-domain networks.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*

8. E-3 MIDS JTRS (Multifunctional Information Distribution System Joint Tactical Radio System) will use Link 16 to establish a digital kill chain with in-theater combat forces/shooters. Current 20 year old Class 2 terminal has sustainability/Dimishing Manufacturing Sources (DMS) issues; does not support mandated Crypto Mod (CM) & Freq Remap (FR). MIDS JTRS resolves DMS issues, provides CM & FR, Link 16 enhancements & growth for Next Gen Tactical Data Link (TDL).

9. AWACS current Combat Indentification (CID) capability has become unsustainable and requires update to stay current with current and evolving threats. AWACS will address C2 CID shortfalls by upgrading existing capability to provide a persistent Air Moving Target Indicator (AMTI) Battle Management Command and Control (BMC2) combat ID in support of the kill chain and decision superiority.

This program is in Budget Activity 7, Operational Systems Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	65.200	186.256	161.657	-	161.657
Current President's Budget	47.171	148.369	180.804	-	180.804
Total Adjustments	-18.029	-37.887	19.147	-	19.147
• Congressional General Reductions	-0.065	-			
• Congressional Directed Reductions	-16.300	-37.887			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.526	-			
• Other Adjustments	-0.138	-	19.147	-	19.147

Change Summary Explanation

FY13: Decrease in other adjustements due to sequestration, congressional directed reduction due to underexection.

FY14: Congressional directed reductions due to program decrease and Electronic Protection delays.

FY15: Funding added to acceleration of development activity on IPEC to meet warfighter requirements for secure chat capability.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: E-3 Block 40/45	3.117	12.193	-
Description: E-3 Block 40/45			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: E-3 Block 40/45: Completed development of Mission Crew Training Set (MCTS) and Mission Computing Maintenance Trainer (MCMT). Continued to develop the Airborne Training System (ATS) and Secure Iridium Communication (Legacy chat communications). Continued initial Avionics Integrated Support Facility (AISF) Upgrade. Continued development of Data Link Infrastructure (DLI) improvements for seamless transition from Block 30/35. ***FY 2014 Plans:*** E-3 Block 40/45: Deliver and Install Mission Crew Training Sets (MCTS) and Mission Computing Maintenance Trainers (MCMT) into gov't facility. Complete Initial Avionics Integrated Support Facility (AISF) development and then commence AISF follow-on activities. Complete development of Secure Iridium Communication. Continue to develop the Airborne Training System (ATS) and Data Link Infrastructue (DLI) improvements for seamless transition from Block 30/35. ***FY 2015 Plans:*** n/a			
Title: E-3 Next Generation Identification Friend or Foe (NGIFF) ***Description:*** E-3 Next Generation Identification Friend or Foe (NGIFF) ***FY 2013 Accomplishments:*** E-3 NGIFF: Continued resolving IFF 30/35 CAT 2 software deficiencies. Continued Block 40/45 EMD effort. ***FY 2014 Plans:*** E-3 NGIFF: Complete final system verification review for IFF 40/45. Conduct data analysis for IFF 40/45 flight test. Release IFF 40/45 Build 3.0 software. Complete verification of Technical Requirements Document (TRD) for IFF 40/45. Complete final Time Compliance Technical Orders (TCTO's) and TO's for IFF 40/45 ***FY 2015 Plans:*** E-3 NGIFF: Will complete force development evaluation.	6.226	22.273	1.541
Title: E-3 DMS Replacement of Avionics for Global Operations and Navigation (DRAGON) ***Description:*** E-3 DMS Replacement of Avionics for Global Operations and Navigation (DRAGON) ***FY 2013 Accomplishments:*** E-3 DRAGON: Submitted Preliminary Design Review (PDR) Assessment to the Milestone Decision Authority. Conducted Critical Design Reviews (CDR). Completed detailed drawings. Performed Handover Testing of NATO development test aircraft (N-1), transferred aircraft to Boeing (via DD Form 1149) and began the aircraft modification. Coordinated availability of major	23.975	97.162	129.150

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
subcontractors' hardware (Group B) and installation readiness. Completed development labs Instal and Check-out (I&CO) and began lab testing of software. ***FY 2014 Plans:*** E-3 DRAGON: Coordinate availability of N-1 parts to support modification efforts. Complete lab software testing. Complete N-1 modification and initiate N-1 ground testing. ***FY 2015 Plans:*** E-3 DRAGON: Will Perform Handover Test of US development test aircraft (D-1), transfer aircraft to Boeing (via DD Form 1149) and begin the aircraft modification. Will start and complete the flight testing of the NATO developmental aircraft (N- 1). Will perform the Technical Order (TO) validation for N-1. Will start the Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA) for N-1. Initiates development of Automatic Dependent Surveillance - Broadcast (ADS-B) Out capability to DRAGON in FY15.			
Title: E-3 Electronic Protection (EP) ***Description:*** E-3 Electronic Protection (EP) ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** E-3 EP: Contract award in FY14. Begin development of classified technology solutions to mitigate issues/concerns identified under the risk management plan study. ***FY 2015 Plans:*** E-3 EP: Will continue development of classified technology solutions to mitigate issues/concerns identified under the Radar Modernization Program (RMP) study.	-	4.960	19.056
Title: E-3 Training, Support, and Infrastructure (TSI) ***Description:*** E-3 Training, Support, and Infrastructure (TSI) ***FY 2013 Accomplishments:*** E-3 TSI: Supported AWACS developmental and production programs lab integration efforts. Provided system lab support to Electronic Protection (EP), Block 40/45, Next Generation Identify Friend or Foe (NGIFF), Transitional Networking Capability (TNC), Situation Awareness Data Link (SADL), Command and Control Intelligence, Surveillance, and Reconnaissance (C2ISR), Japan and Royal Saudi Air Force (RSAF) radar improvement integration and test. Supported OSD mandated interoperability	6.402	9.551	10.496

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
testing and supported mandatory E-3 Operational, Safety, Suitability, and Effectiveness program. Supported the E-3 AWACS Developmental Test and Evaluation (DT&E) Avionics Integration Lab (AIL). ***FY 2014 Plans:*** E-3 TSI: Support AWACS developmental and production programs lab integration efforts. Will provide system lab support to Electronic Protection (EP), Block 40/45, Diminishing Manufacturing Sources Replacement of Avionics DRAGON, Next Generation IFF, TNC, SADL, IPEC, Japan and RSAF radar improvement, integration and test. Will support AEW&C and other OSD mandated interoperability testing and support mandatory E-3 Operational, Safety, and Suitability and Effectiveness program. Support the E-3 AWACS Developmental Test and Evaluation Avionics Integration Laboratory (AIL). ***FY 2015 Plans:*** E-3 TSI: Will support AWACS developmental and production programs lab integration efforts. Will provide system lab support to EP, Block 40/45, DRAGON, Next Generation Indentify Friend or Foe (NGIFF), Transformational Networking Capability (TNC), Situational Awareness Data Link (SADL), Internet Protocol Enabled Communication (IPEC), Japan and Royal Saudi Air Force (RSAF) radar improvement, integration and test. Will support Airborne Early Warning and Control (AEW&C) and other Office of the Secretary of Defense (OSD) mandated interoperability testing and support mandatory E-3 Operational, Safety, and Suitability and Effectiveness program. Will support the E-3 AWACS Developmental Test and Evaluation Avionics Integration Laboratory (AIL).			
Title: E-3 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) ***Description:*** E-3 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) ***FY 2013 Accomplishments:*** E-3 C2ISR: Conducted engineering / integration studies to determine required modifications and associated costs to upgrade and support Risk Reduction activities for program planning including but not limited to Cooperative Engagement Capability (CEC), Electronic Protection (EP), and Internet Protocol Enabled Communication (IPEC). Continued to execute International Cooperative Research & Development (ICR&D). ***FY 2014 Plans:*** E-3 C2ISR: Conduct engineering / integration studies to determine required modifications and associated costs to upgrade and support Risk Reduction activities for program planning including but not limited to Cooperative Engagement Capability (CEC), Electronic Protection (EP), and Internet Protocol Enabled Communication (IPEC). Continue to execute International Cooperative Research & Development (ICR&D). ***FY 2015 Plans:***	7.451	2.230	3.598

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
E-3 C2ISR: Will conduct engineering / integration studies to determine required modifications and associated costs to upgrade and support Risk Reduction activities for program planning including but not limited to Cooperative Engagement Capability (CEC), Electronic Protection (EP), and Internet Protocol Enabled Communication (IPEC), Combat ID System Mods, and Multifunctional Information Distribution System Joint Tactical Radio System (MIDS-JTRS). Will continue to execute International Cooperative Research & Development (IR&D).			
Title: E-3 Internet Protocol Enabled Communication (IPEC) ***Description:*** E-3 Internet Protocol Enabled Communication (IPEC) ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** Award Engineering and Manufacturing Development (EMD) contract to start multi-year development to achieve quick, low-cost, medium-bandwidth Internet Protocol (IP) capability to fill the gap between the current Transitional Networking Capability (TNC) / Secure Iridium Chat (SIC) and future Diminishing Manufacturing Sources (DMS) Replacement of Avionics for Global Operations and Navigation (DRAGON) Inmarsat systems.	-	-	16.963
Accomplishments/Planned Programs Subtotals	47.171	148.369	180.804

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # E00300: *E-3*	169.375	142.515	176.167	-	176.167	257.387	322.114	260.598	208.847	Continuing	Continuing
• APAF: BA06: Line Item # 000999: *Initial Spares/Repair Parts*	16.278	11.681	2.957	-	2.957	33.756	22.173	21.621	24.273	Continuing	Continuing

Remarks

E. Acquisition Strategy

Most major programs (E-3 Block 40/45, E-3 DRAGON, and lab support) will be sole source to the Boeing Corporation, Seattle, WA.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*	**Project (Number/Name)** 67411L / *Airborne Warning & Control System (AWACS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(U) E-3 Block 40/45	SS/CPIF	Boeing : Seattle, WA	1,103.029	2.977	Jan 2013	10.293	Jan 2014	-		-		-	-	1,116.299	TBD
(U) E-3 Next Generation Identification Friend or Foe (NGIFF)	SS/CPIF	Boeing : Seattle, WA	85.060	4.493	Jan 2013	21.590	Jan 2014	1.500	Oct 2014	-		1.500	Continuing	Continuing	TBD
(U) E-3 DMS Replacement of Avionics for Global Operations and Navigation (DRAGON)	SS/FPIF	Boeing : Seattle, WA	78.533	19.189	Jan 2013	92.131	Jan 2014	123.016	Jan 2015	-		123.016	Continuing	Continuing	TBD
(U) E-3 FPS	SS/FFP	Boeing : Seattle, WA	0.574	-		-		-		-		-	-	0.574	TBD
(U) E-3 Support the War Fighter (STWF)	Various	Various : Various, NA	14.870	-		-		-		-		-	-	14.870	TBD
(U) E-3 Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR)	SS/ Various	Boeing : Seattle, WA	138.035	1.524	Oct 2012	-		-		-		-	Continuing	Continuing	TBD
(U) E-3 Electronic Protection (EP)	SS/FFP	Boeing : Seattle, WA	0.000	-		2.019	Jul 2014	16.687	Jan 2015	-		16.687	Continuing	Continuing	TBD
(U) E-3 Internet Protocol Enabled Communication (IPEC)	TBD	TBD : TBD,	0.000	-		-		14.301	Apr 2015	-		14.301	Continuing	Continuing	TBD
(U) Prior Platform Modifications	Various	Various : Various, NA	1,566.146	-		-		-		-		-	-	1,566.146	-
		Subtotal	2,986.247	28.183		126.033		155.504		-		155.504	-	-	-

Remarks

Total Program does not include NATO funds.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*	**Project (Number/Name)** 67411L / *Airborne Warning & Control System (AWACS)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(U) Support/ITSP, MITRE, travel, other	Various	AWACS Program Office : Hanscom AFB, MA	76.378	8.717	Oct 2012	8.216	Oct 2013	8.462	Oct 2014	-		8.462	Continuing	Continuing	TBD
		Subtotal	76.378	8.717		8.216		8.462		-		8.462	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(U) E-3 AWACS Development Integration Test Support (ADITS) Contract / Other test activities	SS/ Various	Boeing : Seattle, WA	239.985	-		-		-		-		-	-	239.985	TBD
(U) E-3 Training, Support & Infrastructure (TSI)	SS/ Various	Boeing : Seattle, WA	35.551	4.539	Jan 2013	9.117	Jan 2014	10.122	Jan 2015	-		10.122	Continuing	Continuing	TBD
Joint Test Facility	Various	Multiple : ,	0.000	0.730	Oct 2012	0.933	Oct 2013	1.250	Oct 2014	-		1.250	Continuing	Continuing	TBD
		Subtotal	275.536	5.269		10.050		11.372		-		11.372	-	-	-

Remarks

In FY13, the remaining ADITS effort will be captured under Training, Support & Infrastructure (TSI). This effort includes the Avionics Integration Laboratory (AIL) and will continue through the FYDP.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(U) Program Management Administration (PMA)	Various	AWACS Program Office : Hanscom AFB, MA	368.391	5.002	Oct 2012	4.070	Oct 2013	5.466	Oct 2014	-		5.466	Continuing	Continuing	TBD
		Subtotal	368.391	5.002		4.070		5.466		-		5.466	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207417F / *Airborne Warning and Control System (AWACS)*	Project (Number/Name) 67411L / *Airborne Warning & Control System (AWACS)*	

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,706.552	47.171		148.369		180.804		-		180.804	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*	**Project (Number/Name)** 67411L / *Airborne Warning & Control System (AWACS)*

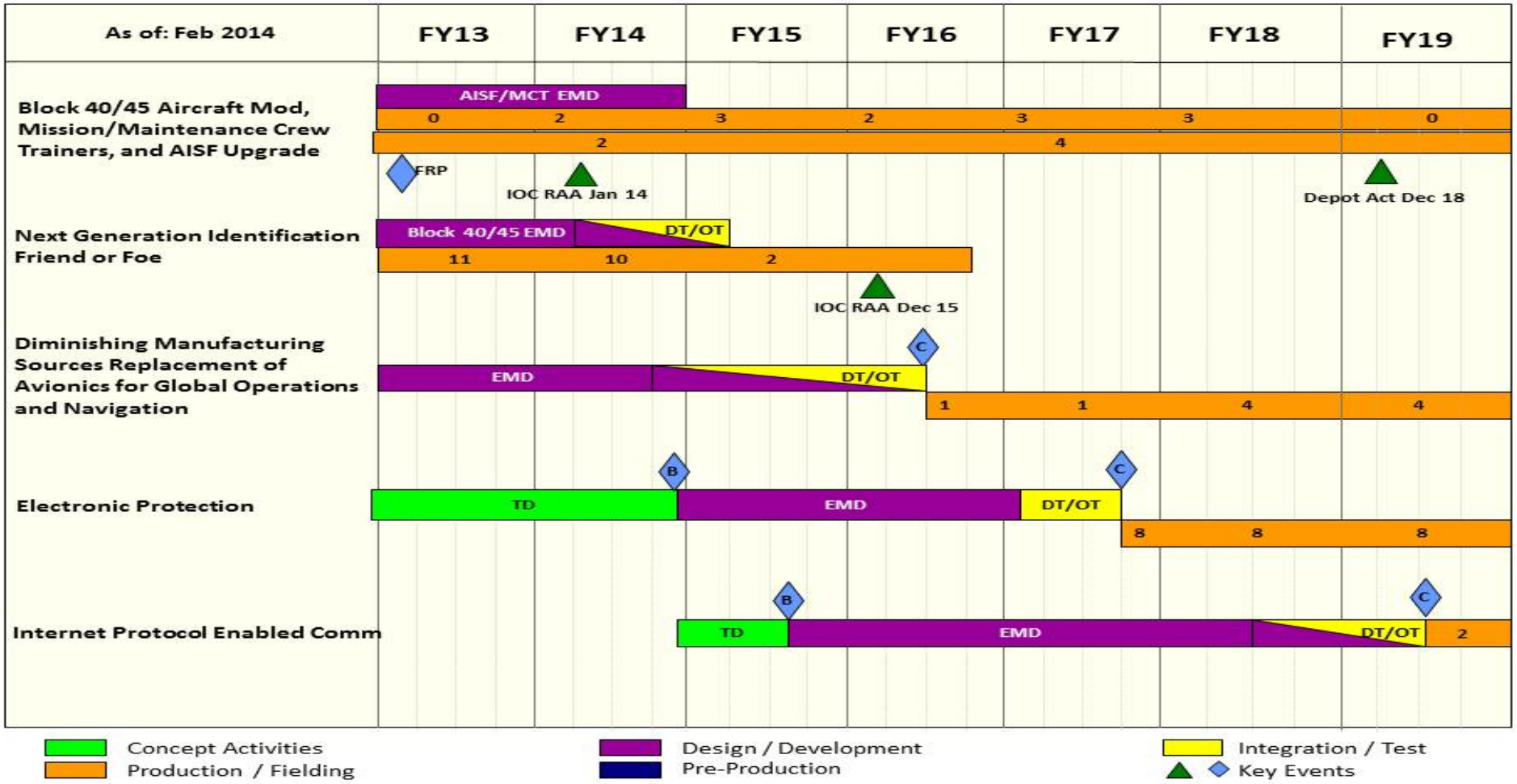


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207417F / *Airborne Warning and Control System (AWACS)*	**Project (Number/Name)** 67411L / *Airborne Warning & Control System (AWACS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
40/45 MCT EMD	1	2013	4	2014
40/45 FRP Decision	1	2013	1	2013
40/45 IOC	3	2014	3	2014
NGIFF EMD (UPX-40 software and firmware development for Block 40/45)	1	2013	2	2015
NGIFF 40/45 DT	2	2014	1	2015
NGIFF 40/45 OT	2	2014	1	2015
NGIFF IOC	1	2016	1	2016
DRAGON EMD	1	2013	2	2016
DRAGON DT/OT	4	2014	2	2016
DRAGON Milestone C	2	2016	2	2016
EP Technology Development	1	2013	4	2014
EP Milestone B	4	2014	4	2014
EP EMD	1	2015	1	2017
EP Milestone C	3	2017	3	2017
EP DT/OT	1	2017	3	2017
IPEC Technology Development	1	2015	3	2015
IPEC Milestone B	3	2015	3	2015
IPEC EMD	3	2015	2	2019
IPEC DT/OT	2	2018	2	2019
IPEC Milestone C	3	2019	3	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207418F / *Tactical Airborne Control Systems*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	5.582	0.743	3.754	-	3.754	6.041	4.335	3.712	3.782	-	27.949
675234: *TACP Support*	-	5.582	0.743	3.754	-	3.754	6.041	4.335	3.712	3.782	-	27.949
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

a. The Joint Terminal Control Training and Rehearsal System (JTC TRS) project, under the Tactical Airborne Control System, funds development necessary to provide a Distributed Mission Operations (DMO) capable, high-fidelity simulator for the Joint Terminal Attack Controller (JTAC), Combat Control Team (CCT) and Air Support Operations Center (ASOC). JTC TRS is essential to future upgrade and continuation training and currency control requirements due to an increase in USAF JTAC numbers while current and future available air assets to accomplish training are decreasing. Future JTAC control requirements will exceed the ability of live air to meet, and JTC TRS is the only future capability currently projected to allow USAF JTACs to achieve and maintain minimum required controls for both qualification and proficiency demands. The JTC TRS Project provides research and development to facilitate interoperability with joint and sister Service air-ground simulation using industry standards. JTC TRS will allow JTAC and CCT to perform Close Air Support (CAS), Call-for-Fire (CFF) and Tactical Air Traffic Control (ATC) missions and allow ASOCs to perform Command and Control (C2) missions in a Live/Virtual/Constructive (LVC) environment. Future JTC TRS development will provide the capability to network aircrew full mission trainers and training centers with other trainers including the Personnel Recovery training and rehearsal capability. This development effort will also integrate ASOCs with the Joint Theater Air to Ground Simulation System (JTAGSS) trainer for Joint Fires. The PR capability is envisioned to be a "plug and play" module for the host JTC TRS. The PR capability will provide Para-rescue (PJ) personnel with an immersive LVC environment to plan, train, and rehearse their employment, rescue/recovery, and combat trauma care skills. JTC TRS will host the network connection to conduct distributed training and rehearsal with other Recovery Forces. The simulator will supplement live field training and live tissue training to provide realistic introductory, proficiency, currency, and upgrade training in a simulated battlefield, disaster, or humanitarian relief environment for Air Force PJs.

b. JTAGSS is a continuation of the ASOC simulation trainer initially funded in 2009 and complements the JTC TRS trainer by providing a total air-ground constructive simulation environment for integrated networked training and mission rehearsal capability that will develop JTAC/CCT and ASOC/SOF (Special Operations Forces) C2 (Command and Control) battle staff skills. JTAGSS will provide the ASOC, SOF, and TACP (Tactical Air Control Party) with the vertical and horizontal C2 communications and coordination training and mission rehearsal required for mission effectiveness. JTAGSS is required to train 400 ASOC personnel with limited to no live training opportunities to align with the AF move to using simulation for stand-alone and distributed training. There are insufficient exercises and live training events available to meet mandated readiness requirements. The system will include a secure network connection, a constructive simulation environment generator with sharable databases, computer work stations that have synthetic reflex agent applications for every ASOC/SOF crew position, and an instructor/operator station.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts for systems, both fielded or approved for full rate production, that have been fully validated through formal Operation Utility Evaluation (OUE) and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207418F / *Tactical Airborne Control Systems*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	5.767	0.743	5.553	-	5.553
Current President's Budget	5.582	0.743	3.754	-	3.754
Total Adjustments	-0.185	-	-1.799	-	-1.799
• Congressional General Reductions	-0.008	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.177	-			
• Other Adjustments	-	-	-1.799	-	-1.799

Change Summary Explanation

FY 13 reduction due to Congressional Markups and Small Business Innovation Research (SBIR)
FY 14 reduction due to higher DoD priorities

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: JTC TRS Trainer Development	5.482	0.643	3.654
Description: Development, test, and evaluation of high-fidelity simulation system for Joint Terminal Attack Controller (JTAC), Combat Control Team (CCT) Assault Zone operations, and Personnel Recovery (PR) training and mission rehearsal. ***FY 2013 Accomplishments:*** (U): Initiate development of Increment 1 of JTC TRS trainer. RFP Release 2nd quarter FY13. Contract award for 4th Quarter FY14. ***FY 2014 Plans:*** Continue development of Increment 1 of the JTC TRS trainer. ***FY 2015 Plans:*** Continue development of Increment 1 of the JTC TRS trainer.			
Title: JTAGSS Trainer Development	0.100	0.100	0.100
Description: Develops high fidelity simulation system for ASOC/SOF Command and Control System that supports JTAC training. Currently an AFRL program funded by Air Combat Command			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207418F / *Tactical Airborne Control Systems*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: Continue development of JTAGSS simulator configuration. ***FY 2014 Plans:*** Continue development of JTAGSS simulator configuration. ***FY 2015 Plans:*** Continue development of JTAGSS simulator configuration.			
Accomplishments/Planned Programs Subtotals	5.582	0.743	3.754

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA 03: Line Item # 837100: *Tactical C-E Equipment*	7.721	6.968	9.099	-	9.099	8.131	3.723	3.788	3.856	Continuing	Continuing

Remarks

E. Acquisition Strategy

a. The acquisition strategy for the development, production, and sustainment of the fixed configuration of the JTC TRS will be executed as a small business set-aside with an evolutionary acquisition approach using incremental development and priced options for production and sustainment. A feasability study for a portable version of the JTAC Trainer is planned to be an option on the JTC TRS contract. The acquisition strategy for the Personnel Recovery (Combat Search and Rescue) capability is to be determined.

b. The acquisition strategy for the JTAGSS trainer will be to field advance technology demonstration units to continue to perform proof of concept and technology validation of mission simulations for all ASOC crew positions including detailed communications planning, asset deconfliction, integration of joint fires, and other critical mission areas required for integrated TACP/ASOC C2 mission success. At the completion of the technology validation, a contract will be competitively awarded to complete JTAGSS development, deployment and integration.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207418F / *Tactical Airborne Control Systems*	**Project (Number/Name)** 675234 / *TACP Support*

U.S. AIR FORCE

JTC TRS

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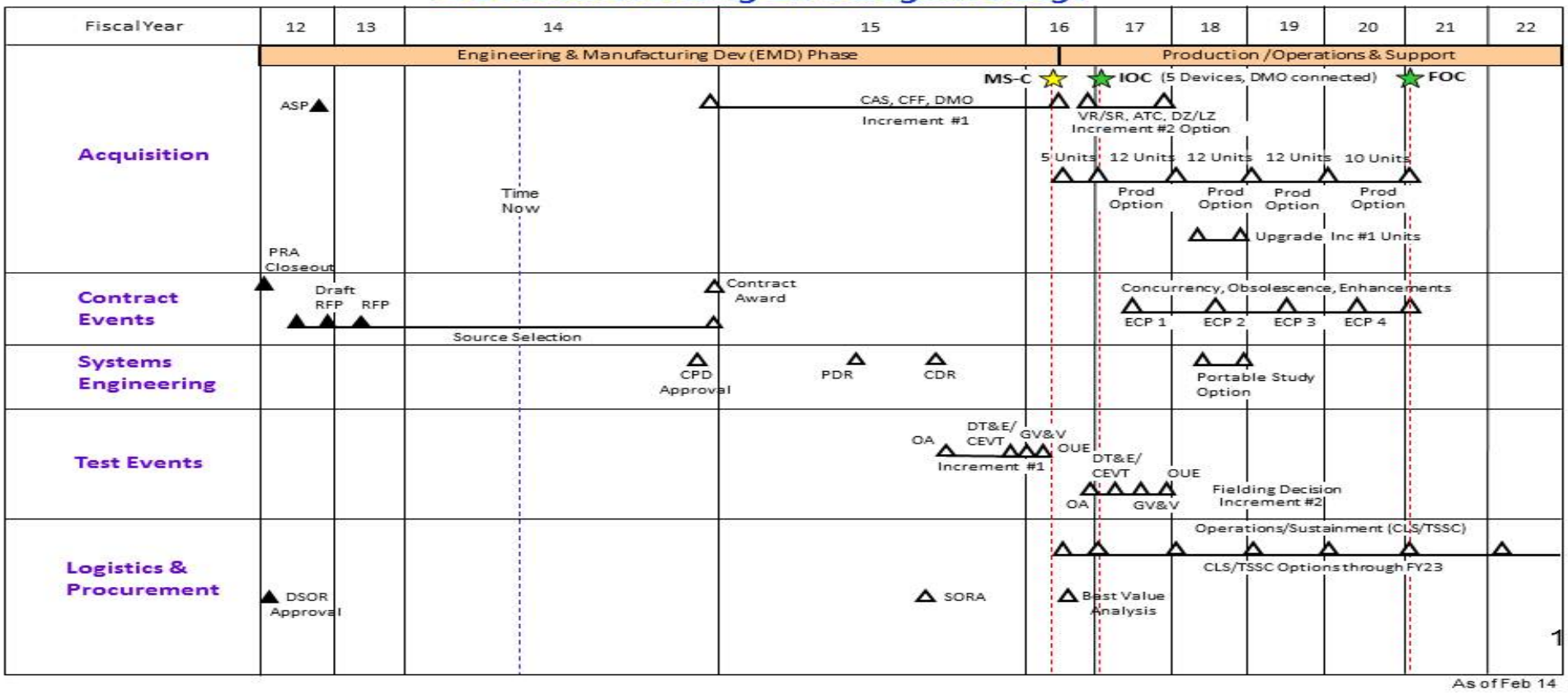
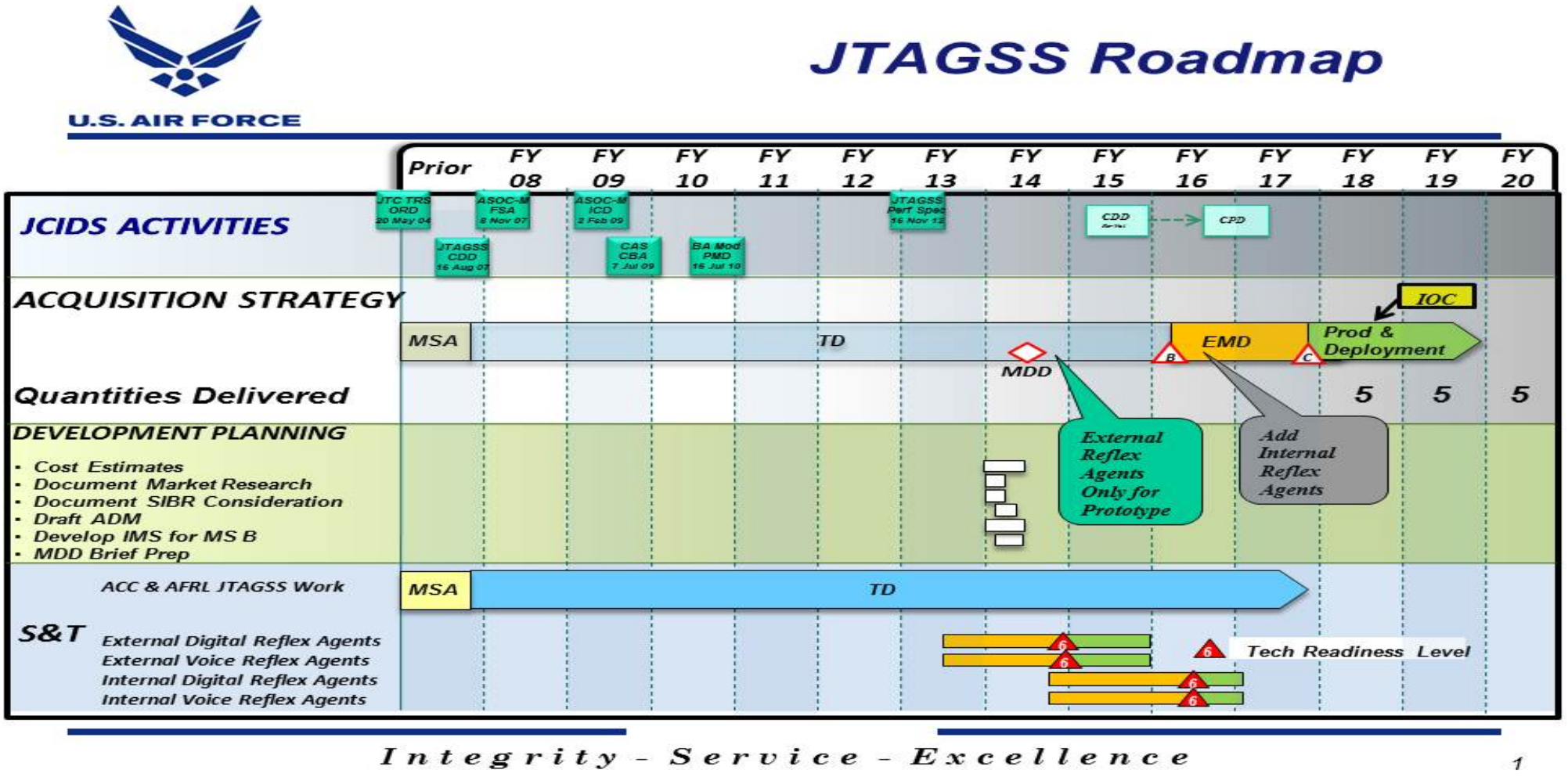


Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207418F / *Tactical Airborne Control Systems*	**Project (Number/Name)** 675234 / *TACP Support*



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207431F / *Combat Air Intelligence System Activities*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	5.275	4.471	7.891	-	7.891	7.845	11.971	9.319	9.684	Continuing	Continuing
675307: *TARGETING ENTERPRISE RESEARCH*	-	3.743	2.778	6.185	-	6.185	6.090	7.679	4.967	5.116	Continuing	Continuing
675309: *GEO Info & Serv Software*	-	1.532	1.693	1.706	-	1.706	1.755	4.292	4.352	4.568	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The mission of Combat Air Intelligence Systems (CAIS) is to process, analyze, and disseminate intelligence for air component and unit operations worldwide by providing key intelligence infrastructure and production capabilities for the supported and supporting forces with true backbone type of intelligence support for air operations and air support to joint operations. CAIS is focused on providing the intelligence infrastructure and funding to Air force Major Commands, Intelligence Squadrons, Field Operating Agencies, and subordinate units.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade and integrate systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	5.756	4.471	6.765	-	6.765
Current President's Budget	5.275	4.471	7.891	-	7.891
Total Adjustments	-0.481	-	1.126	-	1.126
• Congressional General Reductions	-0.008	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.473	-	1.126	-	1.126

Change Summary Explanation

FY13 adjustment due to sequestration.
FY15 additional funds invested in the Targeting Enterprise.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207431F / *Combat Air Intelligence System Activities*	Project (Number/Name) 675307 / *TARGETING ENTERPRISE RESEARCH*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675307: *TARGETING ENTERPRISE RESEARCH*	-	3.743	2.778	6.185	-	6.185	6.090	7.679	4.967	5.116	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Provides support to personnel utilizing Tactical Intelligence Applications; Target Development, Planning, and Execution applications; unit level intelligence; and Geospatial intelligence (GEOINT) system information in direct support to national, combatant command, and air force intelligence missions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Targeting Enterprise Research ***Description:*** Continue to conduct Targeting Enterprise research and support. ***FY 2013 Accomplishments:*** Enhanced current analysis capabilities with new applications and services. ***FY 2014 Plans:*** Enhances current analysis capabilities with enhanced function on current application. ***FY 2015 Plans:*** Supports Air Operations Center developmental and operational testing in support of a full fielding decision.	1.228	1.578	4.985
Title: Joint Targeting Toolbox (JTT) ***Description:*** Develop full-spectrum mission areas for Joint Targeting Toolbox (JTT) data structures. ***FY 2013 Accomplishments:*** Development of Automated No-Strike Generation Service, and enhanced JTT workflow. ***FY 2014 Plans:*** Development of enhanced target lists and folders for kinetic and non-kinetic targeting mission areas. ***FY 2015 Plans:*** Continued development of enhanced target lists and folders for kinetic and non-kinetic targeting mission areas.	1.075	1.200	1.200
Title: Common Geopositioning Services (CGS)	1.440	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207431F / *Combat Air Intelligence System Activities*	**Project (Number/Name)** 675307 / *TARGETING ENTERPRISE RESEARCH*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Upgrade Common Geopositioning Services (CGS) ***FY 2013 Accomplishments:*** Enhanced precise point mensuration capabilities towards new version/develop government off-the-shelf electronic light table with Common Geopositioning Services compatibility.			
Accomplishments/Planned Programs Subtotals	3.743	2.778	6.185

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA03: Line Item #832070: *Intelligence Comm Equipment*	3.955	4.020	5.110	-	5.110	5.919	7.030	5.443	5.465	Continuing	Continuing

Remarks

Combat Air Intelligence System (CAIS) procurement funds.

D. Acquisition Strategy

All contracts are awarded based on full and open competition.

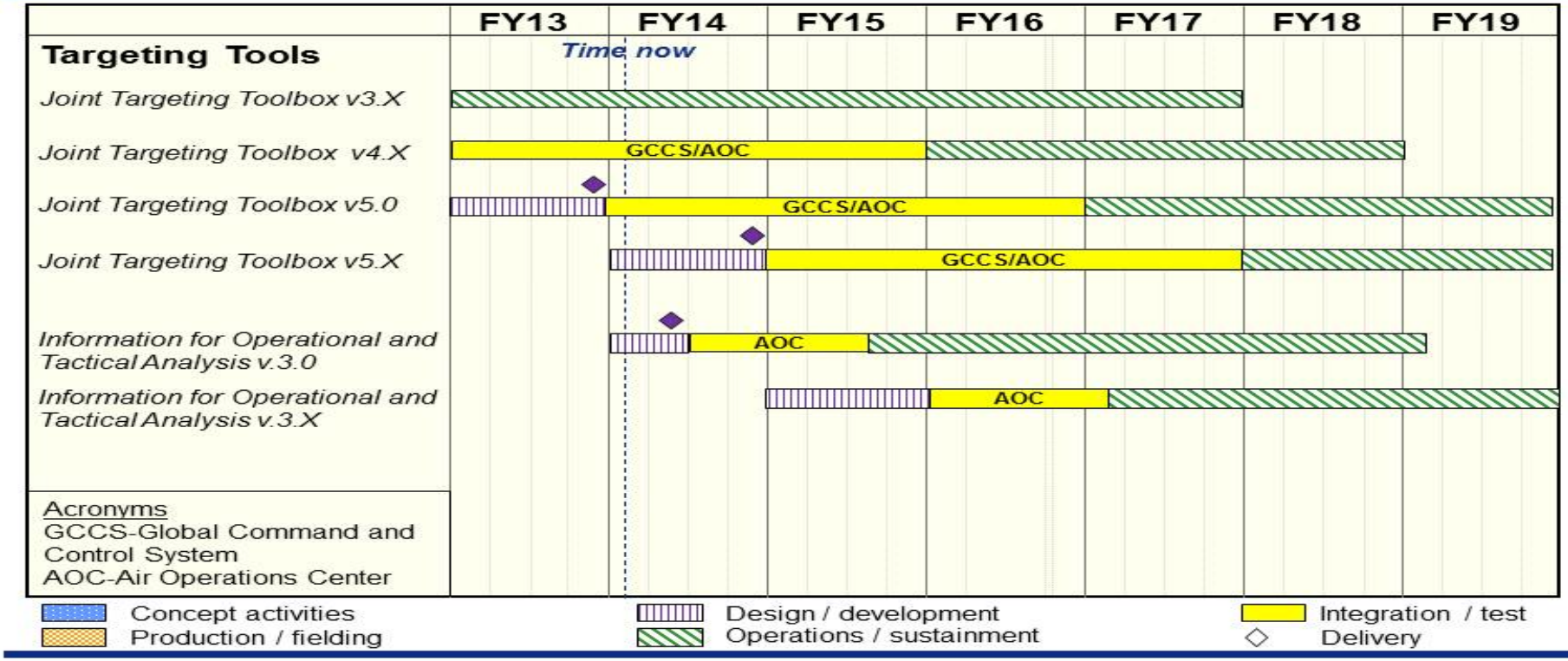
E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207431F / *Combat Air Intelligence System Activities*	**Project (Number/Name)** 675307 / *TARGETING ENTERPRISE RESEARCH*

U.S. AIR FORCE

CAIS Targeting Schedule



2

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207431F / *Combat Air Intelligence System Activities*	Project (Number/Name) 675309 / *GEO Info & Serv Software*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675309: *GEO Info & Serv Software*	-	1.532	1.693	1.706	-	1.706	1.755	4.292	4.352	4.568	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Provides support to personnel using Geospatial resources utilized in Geospatial Intelligence (GEOINT) databasing applications, unit level intelligence, technology exploration and refresh initiatives, management and dissemination architecture, geospatial information and services modernization, and enablers for targeting capabilities. Provides support to the MAJCOMs to ensure requisite and available target intelligence and GEOINT tools for information directly available to warfighters.

The GEOINT information and service software program funds the Air Force geospatial product library (GPL) which is currently fielded to all combatant command air components and subordinate units supporting global air operations. The GPL provides digital GEOINT data to support mission planning, targeting & intelligence in support of mission objectives.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Enhanced Geospatial Product Library (eGPL)	1.532	1.335	-
Description: Provide continuing support for eGPL software and storage to meet future and evolving IT and GEOINT standards and support.			
FY 2013 Accomplishments: Provided database development.			
FY 2014 Plans: Integrating mapping services & capabilities to provide viable a web replacement for currently fielded servers.			
Title: Geospatial Information & Services (GI&S) Software	-	0.358	1.706
Description: Provides Geospatial Information & Services Software.			
FY 2014 Plans: Develop, integrate and field a government off-the-shelf electronic light table compatibility.			
FY 2015 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207431F / *Combat Air Intelligence System Activities*	**Project (Number/Name)** 675309 / *GEO Info & Serv Software*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Enhances precise point mensuration capabilities towards new version.			
Accomplishments/Planned Programs Subtotals	1.532	1.693	1.706

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• None: *N/A*	-	-	-	-	-	-	-	-	-	-	-

Remarks

Other program funding ammounts reflected in R-1 Line item No. 158, page 3.

D. Acquisition Strategy

All major contracts within this project will be awarded after full and open competition.

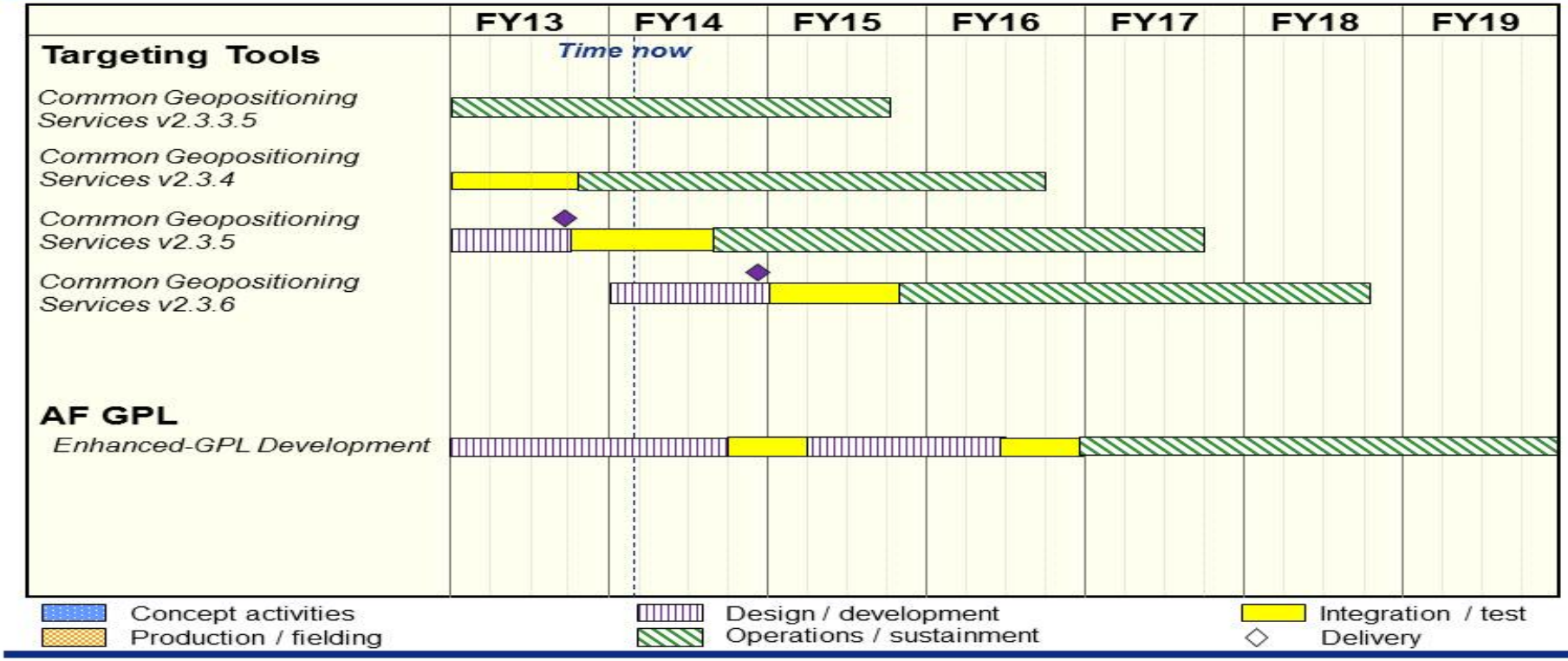
E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207431F / *Combat Air Intelligence System Activities*	**Project (Number/Name)** 675309 / *GEO Info & Serv Software*

U.S. AIR FORCE

CAIS GEOINT Schedule



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207444F / *Tactical Air Control Party-Mod*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	14.444	10.223	5.891	-	5.891	12.547	12.204	10.782	10.987	Continuing	Continuing
676013: *Equipment Modernizaton*	-	14.444	10.223	5.891	-	5.891	12.547	12.204	10.782	10.987	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Tactical Air Control Party-Modernization (TACP-M). TACP members deploy with Army maneuver units and provide a Command and Control (C2) link for Close Air Support (CAS), Joint Fires Support, airlift, and Air Force surveillance/reconnaissance missions. TACPs are equipped with a variety of targeting and communications systems which interface with ground maneuver forces, CAS aircraft, joint fire assets, C2 aircraft/agencies, and Intelligence, Surveillance, and Reconnaissance (ISR) platforms and agencies. TACPs detect targets, coordinate with C2 authorities, and pass precise targeting information to close air support aircraft and fires support units to ensure accurate and timely targeting in the employment of joint fires support. The actions TACPs perform not only shorten the kill chain, but also reduce the potential for fratricide and collateral damage in civilian-occupied areas. TACPs also provide ground communications during federal emergency relief operations and homeland defense initiatives. TACPs support Overseas Contingency Operations (OCO) and have seen significantly increased mission effectiveness during Operation Enduring Freedom and Operation New Dawn.

The purpose of the TACP-M program is to provide net-centric data communications, battlespace awareness, and targeting capabilities to TACPs operating in operations centers, vehicles, and while conducting dismounted operations. Data communications, including streaming video, reduce reliance on voice transmissions and enable machine-to-machine data exchange between TACPs and C2 nodes, CAS aircraft, Army units and other TACP units. Reliable data communications support interoperability, improve battlespace awareness (BA), increase targeting accuracy, reduce kill chain decision time, improve data flow/information exchange, and reduce the potential for fratricide and collateral damage in civilian occupied areas. TACPs use software communication architecture (SCA)-certified,Joint Interoperability Test Command (JITC) approved, software-defined radios and ancillary components that provide reliable voice and data communications on UHF SATCOM, UHF/VHF LOS, SINCGARS, and will soon on evolving networking waveforms such as Soldier Radio Waveform (SRW) and Mobile User Objective System (MUOS)

TACP-M is a buy-to-budget program with requirements based on ACC's evolving combat needs and the capabilities available in the commercial market. As a result, requirements are frequently adjusted to accommodate warfighter needs while working within available funding.

TACP-M is divided into three segments: software, mounted capabilities, and dismounted capabilities. The mounted segment is further divided into stationary and mobile elements.

The software segment provides the Close Air Support System (CASS) software with interfaces to all TACP-M components and joint interoperability with CAS aircraft (A-10, F-16, F/A-18, AV-8B, etc), remotely piloted aircraft (RPA), artillery fire support systems, network-enabled weapons, and C2 nodes. To enable data

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207444F / *Tactical Air Control Party-Mod*

communications with those systems / nodes, CASS incorporates several communications protocols including Variable Message Format (VMF), Link 16, Marine Tactical System (MTS), and U.S. Message Text Format (USMTF). CASS versions 1.4.2 and 1.4.4 are currently fielded. The contract for CASS v1.4.5 was awarded on 24 Oct 13 and will provide advanced communication and targeting capability on mobile computing devices for Dismounted TACPs, as well as provide significant interoperability improvements in software used in vehicles and operations centers. Future upgrades necessary to maintain interoperability with CAS aircraft, joint fire support systems, and emerging data networking waveforms will be guided by the TACP CASS Information System Initial Capabilities Document(IS ICD),which was approved by the Air Force Requirement Oversight Council (AFROC), Functional Capabilities Board (FCB), and Joint Capabilities Board (JCB) in 1st Qtr FY14.

The dismounted segment consists of integrated, non-developmental, commercial-off-the-shelf (COTS) components carried by dismounted TACPs. These include laser range finders, thermal imagers, laser designators, manpack and handheld radios, ruggedized tactical computers, streaming video receivers, and other required equipment.

The Mounted (Fixed) segment integrates computer and communications equipment into re-locatable vehicle, rack, or transit-case mounted systems for use in Tactical Operations Center (TOC) or Air Support Operations Center (ASOC) locations. It includes the ASOC Gateway mounted in a High Mobility, Multi-Wheeled Vehicle (HMMWV) shelter, the Gateway Lite mounted in relocatable racks or transit cases, and the Dismounted Communications Package (DCP) mounted in transit cases.

The Mounted (Mobile) segment integrates radios, computers, and ancillary equipment into mobile tactical vehicles such as new TACP M1145 and M1165 Armored HMMWV variations, the Army Stryker armored vehicle, and future Army vehicles. Following the termination of the Vehicular Communications System (VCS) in FY11, existing capability gaps in TACP vehicle-mounted communications systems have grown.

The TACP-Modernization ICD, approved by the JROC in Sep 2012, identified significant on-the-move tactical voice, data, and video capability gaps in TACP tactical vehicles. A subsequent DOTMLPF Study verified that Mounted (Mobile) data communications requirements can be provided by modular, non-developmental, COTS components integrated into TACP vehicles. Current TACP-M team efforts are focused on incrementally providing new mounted capabilities as funding and technology allow.

In Mar 2011-Feb 2012, the TACP-M program fielded a Dismounted Communications Package which provided a robust and re-locatable, transit-case mounted communications system for TACPs operating in TOC locations. In Mar 2011-Jun 2013, the TACP-M program integrated and fielded the GRC-259 mission equipment package, which provided improved on-the-move tactical communications and blue force tracking capabilities for the Army Stryker Light Armored Vehicles. In August 2013, the TACP-M program fielded the Voice Communications Package (VCP), which provided TACPs / JTACs with limited, 2-channel, on-the-move, voice-only communications capabilities for M1165 HMMWVs. The next increment, Mobile Communications System Increment 0, is planned to add data communications and video receiver capabilities to VCP-equipped M1165 HMMWVs. This will be followed by a more robust capability that provide essential communications links to C2 and fire support systems on 4 or 5 channels using emerging / new Army and Joint Aerial Layer Networking waveforms to M1145 HMMWVs (MCS Inc 1). Additional MCS increments will provide essential communications, datalinks and targeting capabilities for mounted systems to include current and future TACP vehicles.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207444F / *Tactical Air Control Party-Mod*

In FY15, the TACP-M program is implementing a multi-award, Indefinite Delivery, Indefinite Quantity contract to aid in the competitive contracting of Mobile Communication System and other platform integration efforts. The contract will also support studies and analysis, risk reduction, training and sustainment activities to support planning and execution of current and future program activities.

This program is in Budget Activity 07, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	16.226	10.250	10.077	-	10.077
Current President's Budget	14.444	10.223	5.891	-	5.891
Total Adjustments	-1.782	-0.027	-4.186	-	-4.186
• Congressional General Reductions	-0.021	-0.027			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.428	-			
• Other Adjustments	-1.333	-	-4.186	-	-4.186

Change Summary Explanation

In FY13 program was reduced by $1.333M sequestration.
In FY15 program was reduced by $4.186M due to higher AF priorities

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Close Air Support System (CASS)	14.444	10.223	5.891

Description: The CASS Software program will modernize software for communications and C2 processing systems for multiple TACP mission areas, i.e., the Air Support Operations Centers (ASOC), Tactical Operation Centers (TOC), Mounted operations, and Dismounted operations. The software, hosted on a variety of computers that are integrated with TACP radios, computers, and antennas, a.k.a. Communications and Support (C&S) equipment and employed across multiple echelons, provides a complete and standard communication and processing system across the TACP environment.

FY 2013 Accomplishments:
Continued to develop and integrate Machine-to-Machine (MTM) data transfer, Joint Air Ground Integration Cell, C2 nodes, indirect fires support, and integration and update aircraft across the USAF, joint (e.g. F-35) and coalition environment, as well as

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207444F / *Tactical Air Control Party-Mod*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
conduct risk reduction activities with weapons (e.g. Small Diameter Bomb II) in order to satisfy validated warfighter requirements. This effort also continued to support the Joint DACAS Block 1 initiative which provides a common CASS terminal execution phase capability across service and coalition forces. CASS software focused on developing a simplified user interface which is user tailorable to specific TACP missions. This effort includes risk reduction activities focused on developing advanced user interfaces for software to be used in Dismounted TACP operations. ***FY 2014 Plans:*** Continuing to develop MTM interfaces with weapons (e.g. Small Diameter Bomb II), improve interfaces with Joint Air Ground Integration Cell, C2 Nodes, indirect fires integration, and aircraft across the USAF, joint (e.g. F-35) and coalition environment, and satisfy validated warfighter requirements. This effort also continues to support the Joint DACAS Block 1 initiative which will provide a common CASS terminal execution phase capability across service and coalition forces. CASS software will also be focused on developing a simplified user interface which is tailorable to different TACP mission echelons(e.g ASOC Gateway, Vehicle mounted & Dismounted Joint Terminal Attack Controller (JTAC)) while maintaining a consistent s/w operating engine across multiple platforms. The new effort will require an adaptable, flexible CASS architecture to enable modular upgrades and capability enhancements which are needed to develop terminal control interfaces of weapons in-flight and will reduce sustainment costs. ***FY 2015 Plans:*** TACP will continue to develop and test MTM interfaces with weapons (e.g. Small Diameter Bomb II), enhance interfaces with Joint Air Ground Integration Cell, C2 Nodes, indirect fires integration, and aircraft across the USAF, joint (e.g. F-35) and coalition environment, and satisfy validated warfighter requirements. This effort will continue to support the Joint DACAS Block 1 initiative which will provide a common CASS terminal capability to connect with United States and coalition forces. CASS software will also be focused on developing a simplified user interface which is TACP mission tailorable e.g ASOC			
Accomplishments/Planned Programs Subtotals	14.444	10.223	5.891

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA03: 837100: *Tactical C-E Equipment*	33.687	22.854	20.598	-	20.598	31.089	31.550	32.994	33.459	Continuing	Continuing

Remarks

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207444F / *Tactical Air Control Party-Mod*

E. Acquisition Strategy

TACP-M is executing an incremental development for the TACP CASS software. TACP CASS software systems engineering, design, integration, and fielding support is being provided under a cost plus fixed fee contract. JETS is an Army-managed joint interest development program the Air Force will continue to support.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207444F / *Tactical Air Control Party-Mod*	**Project (Number/Name)** 676013 / *Equipment Modernizaton*

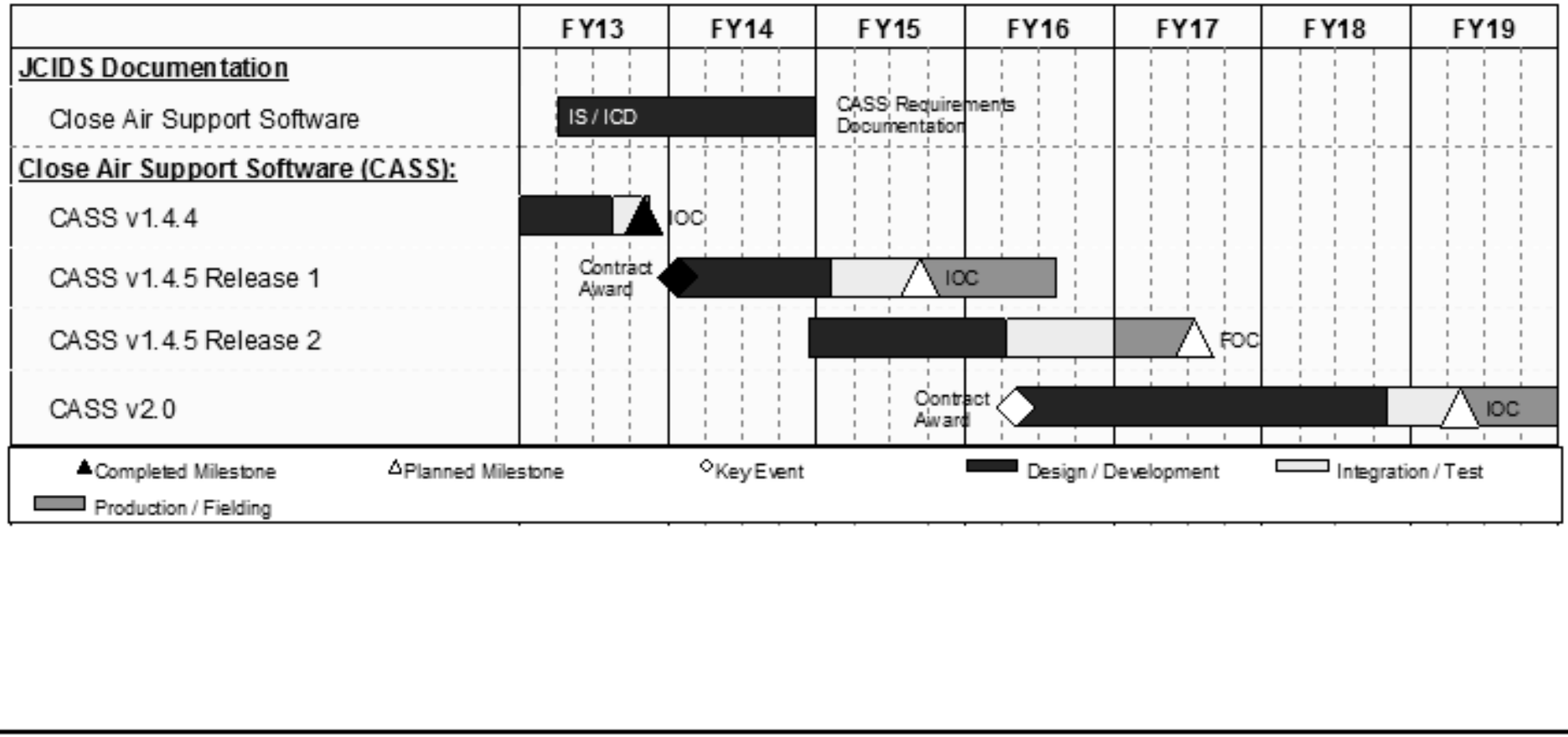


Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207448F / *C2ISR Tactical Data Link*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	1.447	1.406	1.782	-	1.782	1.770	1.715	1.748	1.782	Continuing	Continuing
675045: *C2ISR Tactical Data Link*	-	1.447	1.406	1.782	-	1.782	1.770	1.715	1.748	1.782	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Tactical Data Links (TDL), as a subset of the broader airborne network, are used in a combat environment to exchange information such as messages, data, radar tracks, target information, platform status, imagery, and command assignments. TDLs provide interoperability, local and global connectivity, and situational awareness to the user when operating under rapidly changing operational conditions. TDLs provide a jam-resistant; secure digital data transfer network capability with new and standardized waveforms and data formats allowing line-of-sight (LOS) and beyond-line- of-sight (BLOS) intra- and inter-flight communications. TDLs increase mission effectiveness, provide positive identification of aircraft in the network, correlate on- and off-board sensor data sharing, target, and threat information, and provide the datalink to accomplish time critical targeting and other mission update functions. TDLs are used by all service theater command and control (C2) elements, weapons platforms, and sensors.

TDLs include, but are not limited to: Link 16, Link 11, Situational Awareness Data Link (SADL), Multifunction Advanced Data Link (MADL) Variable Message Format (VMF), Integrated Broadcast Service (IBS), Intra-Flight Data Link (IFDL), and Tactical Targeting Network Technology (TTNT). TDL efforts include incorporating changes and additions to the Link-16 message standard (MIL-STD-6016E) and applicable Interface Change Proposals (ICPs), assisting with Air Force and joint interoperability certification testing with the Air Combat Command (ACC) and Joint Interoperability Test Center (JITC); future development, integration, and verification of Operational Flight Program (OFP) upgrades due to TDL integration; support of data gathering processes; studying and incorporating data link technologies to ensure effectiveness and efficiency of the Global Strike and Global Persistent Attack CONOPS.

This effort provides critical capability and enhancements to the airborne network by creating common development, integration and interoperability among ground and C2 platforms and responds to quick reaction capability integration and demonstration including, but not limited to Airborne Warning and Control System (AWACS), Joint Surveillance Target Attack Radar System (JSTARS), the Air and Space Operations Center (AOC), Global Hawk, Predator, Reaper, Rivet Joint, Combat Sent, and Cobra Ball. TDLs keep all C2ISR platforms and data linked weapons current/interoperable in the airborne network to enable Global Strike, Global Persistent Attack, Offensive and Defensive Counterair (OCA and DCA) and Suppression of Enemy Air Defenses (SEAD) missions.

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

This program is in Budget Activity 7, Operational System Development. These budget activities include development efforts to upgrade systems currently fielded or has approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207448F / *C2ISR Tactical Data Link*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	1.633	1.431	1.805	-	1.805
Current President's Budget	1.447	1.406	1.782	-	1.782
Total Adjustments	-0.186	-0.025	-0.023	-	-0.023
• Congressional General Reductions	-0.003	-0.025			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.041	-			
• Other Adjustments	-0.142	-	-0.023	-	-0.023

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: E-3 AWACS Block 40/45 Mode 5 and MIL-STD- 6016E Link 16 Enhancements	0.842	0.774	-
Description: Improve E-3 AWACS Block 40/45 Link 16 interoperability and compatibility by incorporating key changes to communications software baseline. ***FY 2013 Accomplishments:*** Continued to develop, test and integrate the E-3 AWACS Block 40/45 effort. ***FY 2014 Plans:*** Completed developing, testing and integrating the E-3 AWACS Block 40/45 effort. ***FY 2015 Plans:*** N/A			
Title: Aerial Network Engineering Lab	0.605	0.293	0.700
Description: Funded Command and Control (C2) focused airborne networking studies supporting data link enhancements to include, but not limited to Link-16 Pathfinder and strength track reporting and fusion/correlation. ***FY 2013 Accomplishments:*** Funded Command and Control (C2) focused airborne networking studies supporting data link enhancements to include, but not limited to, Advanced Link-16 Network planning concepts, L-16 Pathfinder and strength track reporting and correlation with			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207448F / *C2ISR Tactical Data Link*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
translation and correlation of Sensor data, Multi-function Advanced Data Link (MADL), and Intra- Flight Data Link (IFDL) into enhanced command and control situational awareness to command and control platforms and infrastructure. ***FY 2014 Plans:*** Funding Command and Control (C2) focused airborne networking studies supporting data link enhancement to include, but not limited to integration and implementation impacts of mandatory upgrades for crypto modernization and frequency remapping, Advanced Link-16 Network planning concepts, L-16 Pathfinder and strength track reporting and fusion/correlation with translation and correlation of Sensor data, Multi-function Advanced Data Link (MADL), and Intra-Flight Data Link (IFDL) into enhanced command and control situational awareness to command and control platforms and infrastructure. ***FY 2015 Plans:*** Will continue to fund Command and Control (C2) focused airborne networking studies supporting data link enhancements to include, but not limited to, Advanced Link-16 Network planning concepts, L-16 Pathfinder and strength track reporting and fusion/ correlation with translation and correlation of Sensor data, Multi-function Advanced Data Link (MADL), and Intra-Flight Data Link (IFDL) into enhanced command and control situational awareness to command and control platforms and infrastructure. Supports C2 platform terminal upgrade under lab impacts to system integration.			
Title: E-3 AWACS Block 40/45 User Identified Critical Interface Change Proposals (ICPs) ***Description:*** E-3 AWACS Block 40/45 User Identified Critical ICPs will be implemented such as time slot reallocation, strength track reporting and correlation, global area reference system, and MIL-STD updates. ***FY 2013 Accomplishments:*** N/A. ***FY 2014 Plans:*** Improving E-3 AWACS Block 40/45 Link 16 interoperability and compatibility by incorporating key MIL-STD 6016E improvements to the software baseline including additional mission assignment and fighter control capabilities. ***FY 2015 Plans:*** Activity will implement E-3 AWACS Block 40/45 User Identified Interface Change Proposals (ICPs) that include time slot reallocation, strength track reporting and correlation, Global Area Reference System (GARS), and MIL-STD updates.	-	0.339	1.082
Accomplishments/Planned Programs Subtotals	1.447	1.406	1.782

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207448F / *C2ISR Tactical Data Link*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDTE:BA05:PE 0604281F: *TDN Enterprise*	21.355	42.745	39.110	-	39.110	50.373	36.250	36.943	24.608	Continuing	Continuing
• APAF:BA05:Line Item #F01500: *F-15*	-	-	0.002	-	0.002	18.789	44.245	45.071	58.835	Continuing	Continuing
• APAF:BA05:Line Item #F01600: *F-16*	-	-	-	-	-	7.928	8.073	8.226	8.380	Continuing	Continuing
• APAF:BA05:Line Item #B00200: *B-2A*	-	0.257	0.049	-	0.049	0.474	0.400	0.497	0.199	Continuing	Continuing
• APAF:BA05:Line Item #B01B00: *B-1B*	-	0.696	1.261	-	1.261	1.133	1.319	1.490	-	Continuing	Continuing
• APAF:BA05: Line Item #OTHACF: *Other Aircraft*	-	0.192	0.037	-	0.037	2.541	1.595	1.506	1.518	Continuing	Continuing
• OPAF:BA03:Line Item #834010: *General Information Technology*	-	0.153	0.168	-	0.168	1.959	1.664	0.175	0.178	Continuing	Continuing

Remarks

E. Acquisition Strategy

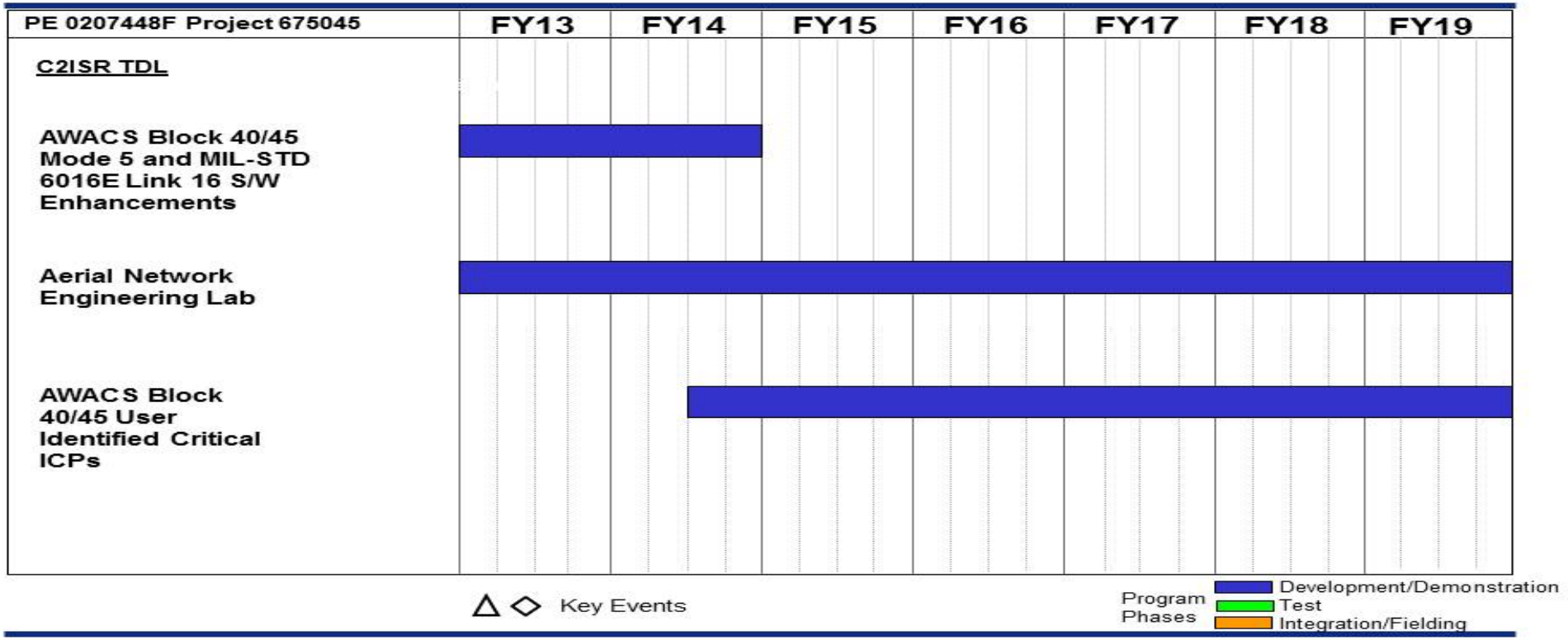
The Airborne Networking Division provides for common development, integration and interoperability across the entire airborne network and ensures that TDLs are procured and maintained as a joint, end-to-end, command and control system. Platform acquisition strategies vary by program, but the majority of development and integration is normally accomplished by the weapon system prime contractor.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207448F / *C2ISR Tactical Data Link*	**Project (Number/Name)** 675045 / *C2ISR Tactical Data Link*

PE 0207448F C2ISR TDL Program Schedule



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207449F / *Command and Control (C2) Constellation*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	13.938	7.160	-	-	-	-	-	-	-	-	21.098
675078: *Horizontal Integration*	-	5.452	7.160	-	-	-	-	-	-	-	-	12.612
675140: *Joint Expeditionary Force Experiments*	-	8.486	-	-	-	-	-	-	-	-	-	8.486

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 675078, Horizontal Integration (HI), was terminated.

In FY 2014, Project 675140, Joint Expeditionary Force Experiments (JEFX), was terminated.

A. Mission Description and Budget Item Justification

The Command and Control Constellation (C2C) is the sole Air Force program for defining, developing, and assessing integrated effects of global, theater and tactical level Air Force air, space, and cyber command and control (C2) capabilities in support of the joint warfighter. The Air Force faces a complex future where conflict will range across a broad spectrum of operations and lethality. The Air Force requires capabilities with the maximum possible flexibility to deal with the widest possible range of conflict. The C2C is the enabling program element for C2 Integration/Modernization. The Air Force is working to establish a C2 framework and architecture to be used as a unifying vision of command and control for each of the services core functions. C2C will support the defense strategy through: integration of air, space cyber and intelligence, surveillance, and reconnaissance (ISR) C2, through architectural analysis, prototyping, experimentation and innovation to develop cross-cutting solutions, and enable an improved "sense-to-kill" cycle time. C2C innovations and experimentation provide strategic, operational, and tactical direction for Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) solutions to facilitate an integrated mission environment that supports C2 planning and execution for air, space, and cyberspace. In-depth development and analyses of C2 operational, systems, and technical architectures are geared towards identifying capability gaps, identifying required "to be" information services, and evaluating C2 program planned improvements. Through prototyping and experimentation, C2C integrates rapidly developing technologies to promote common standards, data sharing, and information services across Air Force and joint warfighting applications to support joint enterprise solutions.

Project 675078, Horizontal Integration (HI) conducts DOTMLPF analyses and assessments to guide cross-cutting, C2 sub-enterprise and cyberspace investment decisions that integrate USAF capabilities into joint and coalition operations. HI identifies, prioritizes, and develops requirements and horizontally integrated solution recommendations to ensure the latest technologies and information services are integrated into a cross cutting C2 system that enables integrated effects in all warfighter domains. The HI strategy will be validated by Headquarters, Air Force (HAF) to ensure that initiatives are harmonized with the most urgent warfighter needs described by the C2 Capability Assessment Team (CAT) and C2 Core Function Master Plan (CFMP) and supporting the 2012 Air Force, Joint and Defense Strategies and Operational Concepts. Once validated, HI funds are applied toward identifying the most critical warfighter capabilities and ensuring they are horizontally integrated into both Air Force and joint C2 programs of record.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207449F / *Command and Control (C2) Constellation*

Project 675140, Joint Expeditionary Force Experiments (JEFX) are agile and frequent innovation-focused experiments which lead to pre-fielded operational and technical assessments. Constructive, live and virtual, operationally representative warfighter environments are created to support integration challenges which focus on critical C2 areas of interest that support the joint warfighter; including, C2 of ISR innovation that supports the air, space, and cyberspace domains. JEFX provides the infrastructure and integration initiatives for experimentation with emerging operational concepts and attendant new technologies that fill operational gaps in Air Force capabilities to meet emerging and rapidly changing real world threats. The JEFX strategy is validated and supported by the Commander, Air Combat Command (COMACC) and coordinated with Headquarters, Air Force (HAF) ensuring initiatives are harmonized with the most urgent warfighter needs and validated requirements described in the AF Core Function Master Plans (CFMP) and supported through MAJCOM Core function Lead Integrator (CFLI). JEFX initiatives are based on emerging CONOPS and warfighter challenges, important enablers of innovation and transformation, which are designed to support the themes and demonstrate emerging Air Force capabilities to deploy and employ decisive air, space and cyberspace power in support of the Joint Force.

This program is in Budget Activity 7, Operational System Development, these budget activities include development efforts to upgrade systems currently fielded or have approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	18.086	7.329	-	-	-
Current President's Budget	13.938	7.160	-	-	-
Total Adjustments	-4.148	-0.169	-	-	-
• Congressional General Reductions	-0.021	-0.169			
• Congressional Directed Reductions	-2.300	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.437	-			
• Other Adjustments	-1.390	-	-	-	-

Change Summary Explanation

In FY 2013: Congressional Directed Reductions row (-$2.3M).
In FY 2013: Other Adjustments row (-$1.390M) due to sequestration.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207449F / *Command and Control (C2) Constellation*	Project (Number/Name) 675078 / *Horizontal Integration*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675078: *Horizontal Integration*	-	5.452	7.160	-	-	-	-	-	-	-	-	12.612
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 675078, Horizontal Integration (HI), was terminated.

A. Mission Description and Budget Item Justification

Horizontal Integration (HI) develops an integrated mission environment that supports cross-cutting solutions across the air, space, and cyberspace command and control (C2) warfighter domain. HI activities include: requirements, architecture, systems engineering, technology development, risk reduction, prototyping, and transition. These activities are required to: identify, design, develop, experiment, and implement C2 solutions supporting operational requirements for warfighting integration and interoperability needs which are not the sole responsibility of a specific program of record.

The nature of integrated and interoperable C2 warfighting capabilities spans multiple platforms and domains. These capabilities are routinely being adjusted to meet the changing requirements from the warfighting communities. The HI project is uniquely designed to look across platforms and domains enabling the Air Force to respond to operator needs across the seams of individual systems. These horizontal integration initiatives will be prototyped, assessed, appropriately captured in requirements documents and then transitioned to programs of record for production, fielding and sustainment.

Systems Engineering and analysis is the 'glue' that holds command and control constellation (C2C) elements together and closes the seams in the C2 architectures. Capability analysis identifies areas where interoperability can be improved within the Air Force, as well as among joint services, and coalition partners. Once capability issues are identified, they are prioritized and pilot initiatives are developed to provide solutions to the warfighter challenges to resolve the capability gaps. The HI project also helps to competitively prototype integrated solutions against validated program requirements.

The benefits of these activities are two-fold: the operational community is able to weigh the cost, risk, and performance trade-offs between enterprise solutions versus program centric solutions, and it supports competitive prototyping of all acquisition programs. The synchronization of HI prototyping and program milestone requirements offers an effective environment for increasing interoperability while reducing the impact of this policy on multiple programs. An infrastructure environment manages a continuous distributed operational environment that supports air, space, and cyberspace C2 and rapid acquisition, prototyping, development, integration, and fielding. C2 initiatives may use this infrastructure to mature their development status prior to entry into operational and technical suitability assessment.

The HI prototype performances are assessed for operational utility, and the most promising initiatives/technologies will be matured and transitioned into weapon system configuration control baselines. Requirement documents will be published and revised, and a requirements database and implementation plan identifying the most significant C2C net-centric integration issues will be updated to catalog the activities necessary to accomplish this integration.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207449F / *Command and Control (C2) Constellation*	**Project (Number/Name)** 675078 / *Horizontal Integration*

In addition, this project supports concept exploration, program definition/risk reduction efforts, and studies that support continuous improvements in C2. Guided by the MAJCOM-validated C2 capability gaps developed by the HI Capability Assessment Team annual process and the defense strategy to meet the evolving Anti-Access/Area Denial (A2/AD) threats to air, space and cyber C2 operations, these improvements include but are not limited to: integration of airspace and cross-domain synchronized operations, C2 of integrated air and missile defense, C2 of Air Force Forces and agile combat support, dynamic aerial network capabilities, and Non-Traditional ISR (NTISR), from 4th and 5th generation aircraft through processing and assessment, and interoperability with joint service, allied and coalition systems, C2 of personnel recovery, and air-sea battle. Activities also include studies and analysis to support current program planning and execution, as well as future program planning.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Reqmts/ CBP/ Integrated Ops/ C2 Framework	1.241	1.922	-
Description: Requirements/Capabilities Based Planning (CBP) ***FY 2013 Accomplishments:*** Analyzed, developed, and documented emerging Air Force (AF) integrated Command and Control (C2) requirements. Continued future C2 integration/ modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Continued refining IAMD C2 requirements. Developed concepts and capabilities in support of air sea battle concepts of operation. ***FY 2014 Plans:*** Analyze, develop, and document emerging Air Force (AF) integrated command and control (C2) requirements. Complete future C2 integration/modernization strategy in a series of concept and/or capability development and technology exploration activities designed to integrate C2 operations across air, space, and cyberspace domains. Complete to refine IAMD C2 requirements. ***FY 2015 Plans:*** N/A			
Title: Arch and SE	1.722	1.605	-
Description: Architecture Development and Systems Engineering ***FY 2013 Accomplishments:*** Conducted functional and systems engineering analysis within the C2 community to flesh out technical architectures and their relationships to operational architectures within the warfighting environment. Specific focus areas and efforts depended on real world needs, C2 enterprise and C2 of cyber requirements with emphasis on airspace and C2 integration, NTISR, C2 of AFFOR, IAMD, 5th - 4th Generation Fighter Interoperability, Dynamic Aerial Networks, C2 of personnel recovery, and air sea battle. ***FY 2014 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207449F / *Command and Control (C2) Constellation*	**Project (Number/Name)** 675078 / *Horizontal Integration*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Functional and systems engineering analysis within the C2 community to flesh out technical architectures and their relationships to operational architectures within the warfighting environment. Specific focus areas and efforts depend on real world needs, C2 enterprise and C2 of cyber requirements, with emphasis on: airspace and C2 integration, kinetic/non-kinetic integration, NTISR, C2 of IAMD, 5th - 4th generation fighter interoperability, dynamic aerial networks, C2 of personnel recovery, air sea battle, electromagnetic spectrum, forward base defense, tactical edge/electronic warfare situation awareness, PACAF distributed control concept/mission planning at unit level, and dynamic execution at distance/net-enabled weapons. ***FY 2015 Plans:*** N/A			
Title: HI Solutions Assessments ***Description:*** Horizontal Integration Solutions Assessment ***FY 2013 Accomplishments:*** Continued annual selections and execution of HI initiatives that fostered enterprise integration across Command and Control (C2), supported the DoDI 5000.02 requirements for competitive prototyping, and aided in refining requirements. Key criteria were near-term warfighter impact and likelihood of transition. The selected initiatives focused on: C2 Integration, C2 of IAMD, ACS/AFFOR C2, 5th - 4th/5th Generation Fighter Interoperability, Airspace Management, Dynamic Aerial Networks, C2 of personnel recovery, and Nontraditional Intelligence, Surveillance and Reconnaissance (NTISR). ***FY 2014 Plans:*** The annual selections and execution of HI initiatives that foster enterprise integration across Command and Control (C2), support the DoDI 5000.02 requirements for competitive prototyping, and aid in refining requirements. Key criteria are near-term warfighter impact and likelihood of transition. The initiatives focus on: C2 Integration, C2 of IAMD, ACS/AFFOR C2, 5th - 4th/5th Generation Fighter Interoperability, Airspace Management, Dynamic Aerial Networks, C2 of personnel recovery, and Nontraditional Intelligence, Surveillance and Reconnaissance (NTISR). ***FY 2015 Plans:*** N/A	2.489	3.633	-
Accomplishments/Planned Programs Subtotals	5.452	7.160	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207449F / *Command and Control (C2) Constellation*	**Project (Number/Name)** 675078 / *Horizontal Integration*

D. Acquisition Strategy

This project uses full and open competition for operational requirements document creation, systems engineering & architecture development, modeling & simulation and experimentation, joint interoperability/integration, and horizontal integration approaches.

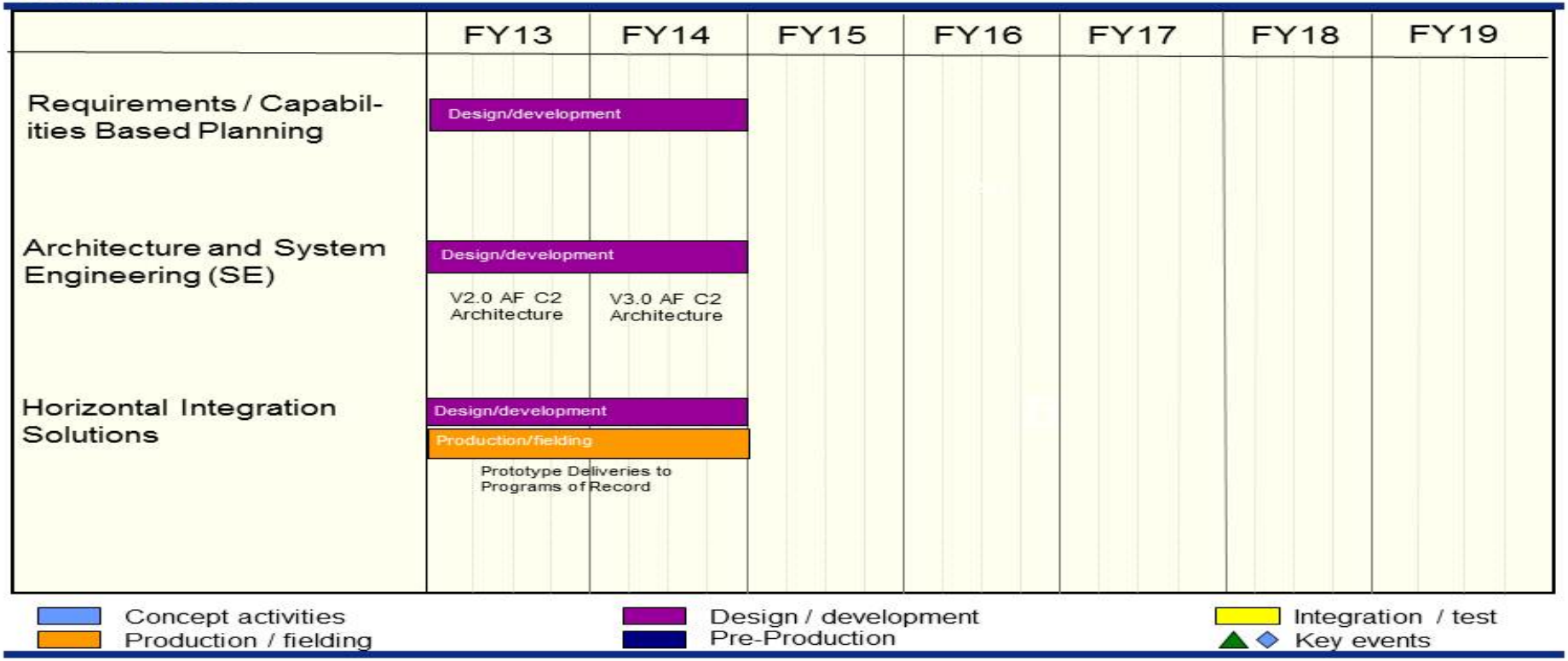
E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207449F / *Command and Control (C2) Constellation*	**Project (Number/Name)** 675078 / *Horizontal Integration*

C2C - Horizontal Integration (HI) Schedule

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207449F / *Command and Control (C2) Constellation*	Project (Number/Name) 675140 / *Joint Expeditionary Force Experiments*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675140: *Joint Expeditionary Force Experiments*	-	8.486	-	-	-	-	-	-	-	-	-	8.486
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2014: Project 675140, Joint Expeditionary Force Experiments (JEFX), was terminated.

A. Mission Description and Budget Item Justification

The Joint Expeditionary Force Experiments (JEFX) and supporting Limited Objective Experiments (LOEs) are warfighter integration and validation experiments that address operational challenges and are part of the Air Force (AF) command and control (C2) integration and experimentation enterprise. Activities include: evaluation of innovative solutions for C2 aspects of the AF Integrated Air and Missile Defense (IAMD) mission, Anti-Access/Area Denial (A2/AD) threats, dynamic aerial layer networking, 5th to 4th generation aircraft and 5th to 5th generation aircraft disparate tactical datalink (TDL) data translation capabilities, Non-Traditional ISR (NTISR}, Airspace Integration, Unit Level Agile Combat Support communication processes, as well as C2 Integration and Modernization for existing AF programs of record. JEFX provides continued integration and experimentation efforts across the AF C2 seams and programs in air, space and cyber domains as defined by CORONA, HQ AF, and the AF Command and Control Integration Center (AFC2IC).

JEFX/LOE activities explore significant capability gaps across the range of Air Force command and control (C2) by means of assessing Concept of Operations (CONOPS), tactics, techniques and procedures (TTPs) and materiel solutions. The activities address critical lessons learned from recent operations and the validated requirements described in the 2012 Air Force, Joint and Defense Strategies and Operational Concepts, the AF Core Function Master Plans (CFMP) and supported through MAJCOM Core Function Lead Integrator (CFLI). JEFX creates or leverages operationally representative-experiment enterprise warfighter environments to address joint and coalition warfighter gaps and shortfalls that demonstrate existing and emerging Air Force capabilities to deploy and employ decisive air, space and cyberspace power for the joint force commander and enable innovation and transformation. These unique missions are the major reason JEFX is an experiment and not simply a demonstration or exercise. Activities also include studies and analyses to support current program planning and execution, as well as future program planning.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Requirements Identification and SE	2.026	-	-
Description: Spiral develop systems architecture, systems engineering, and integration of initiatives into a cohesive system of systems process			
FY 2013 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207449F / *Command and Control (C2) Constellation*	**Project (Number/Name)** 675140 / *Joint Expeditionary Force Experiments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continued integration and experimentation across Air Force (AF) C2 seams and programs in air, space and cyber domains as defined by CORONA, HAF, and AFC2IC. JEFX 2013 (JEFX 13) provided some support for dynamic aerial layer networking, Nontraditional Intelligence, Surveillance, and Reconnaissance (NTISR) and other C2 integration/modernization activities; to include requirements identification, systems engineering of initiatives and LOEs which focused on the integration of C2 services. Requirements validation was established in MAJCOM-directed CFMP processes to connect warfighter needs to initiative identification. In addition to validating materiel solutions, experimentation added value and recommended changes to standing or new concepts of employment, concepts of operations (CONOPs), tactics, techniques and procedures (TTPs), in conjunction with the programs of record and centers of excellence for Tactics, Doctrine, Operations, and Education. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Title: Plan and Design ***Description:*** Plan, design, coordinate, assess and report the JEFX experiments, provide expertise to support initiative selection, acquisition, program management, communications and systems planning. ***FY 2013 Accomplishments:*** Leveraged AF and joint sponsored experimentation events (i.e. AGILE Fire, Trident Warrior, etc.). Developed internally generated, stand-alone events which employed simulation facilities. Limited engineering capability was available to support attendance at external venues as well as hosting/building internal events to support, ie., air sea battle. Activities included: evaluation of innovative solutions for C2 aspects of the AF Integrated Air and Missile Defense (IAMD) mission, Anti-Access/Area Denial (A2/AD) threats, dynamic aerial layer networking, 5th to 4th generation aircraft and 5th to 5th generation aircraft disparate tactical datalink (TDL) data translation capabilities NTISR, airspace integration, unit level agile combat support communication processes, as well as C2 integration and modernization for existing AF programs of record. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A	2.232	-	-
Title: Develop Initiatives	2.127	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207449F / *Command and Control (C2) Constellation*	**Project (Number/Name)** 675140 / *Joint Expeditionary Force Experiments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Develop initiatives to introduce new technologies and operational capabilities into the Aerospace Expeditionary Force (AEF) Concept of Operations (CONOPS) ***FY 2013 Accomplishments:*** Sponsored initiatives were primarily industry based which focused on leveraging existing government and commercial technologies that addressed specific integration shortfalls. Initiatives were developed by the HI portion of this program with specific interest in operational and/or technical utility. The requirement drove the experiment which supported the program of record and examined the integration of the program improvement, the candidate, and rapidly fielded the integration and transition of the effort. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Title: Define and Build Events ***Description:*** Implement architectural configuration, conduct M&S, install and test the communications infrastructure and execute the experiment. ***FY 2013 Accomplishments:*** Supported the migration of the JEFX program from a major venue to a series of LOE venues that focused on the initiative's integration and systems engineering to combine with either a AF or joint sponsored events or a stand-alone event. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A	1.989	-	-
Title: Assessment and Transition ***Description:*** Transition successful JEFX-assessed, and Air Force approved, warfighting capabilities for fielding into an integrated C2 baseline. ***FY 2013 Accomplishments:*** Transitioned under the JEFX Limited Objective Experiments (LOEs) paradigm which changed significantly from a longlead plan to a near-term transition with the Programs of Record or initiative sponsor. This paradigm focused upon the initiative's transition with	0.112	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207449F / *Command and Control (C2) Constellation*	**Project (Number/Name)** 675140 / *Joint Expeditionary Force Experiments*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
validation through operational and technical assessments. It placed a much higher priority under the new JEFX scheme to ensure that technical and operation transition was possible upon completion of JEFX. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	8.486	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

JEFX supports evolutionary acquisition of multiple programs by providing venues and initiatives to experiment new and emerging technologies to be integrated into other systems-of-record. All contracts awarded through full and open competition.

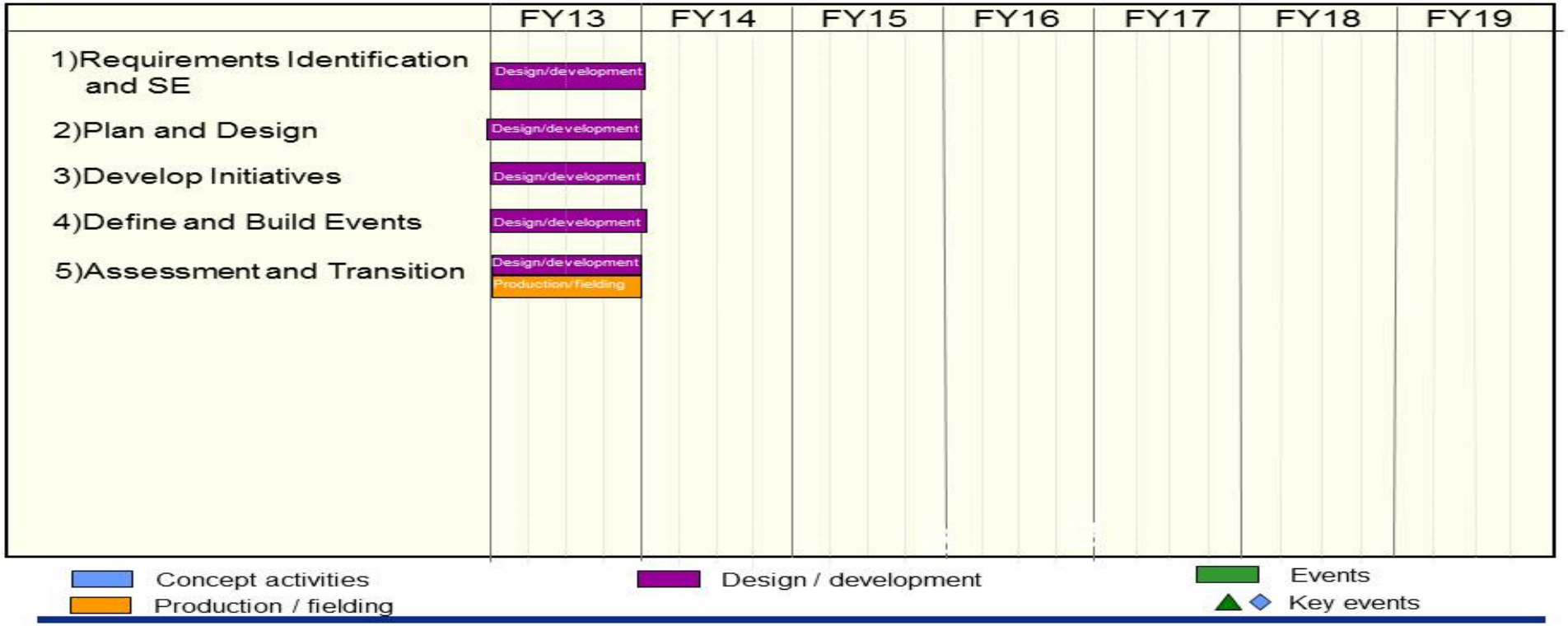
E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207449F / *Command and Control (C2) Constellation*	**Project (Number/Name)** 675140 / *Joint Expeditionary Force Experiments*

U.S. AIR FORCE

C2 Constellation Joint Expeditionary Force Experiment (JEFX) Schedule



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force												Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207452F / *DCAPES*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	13.925	10.111	0.821	-	0.821	16.907	16.351	14.578	14.855	76.900	164.448
674802: *DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)*	0.000	13.925	10.111	0.821	-	0.821	16.907	16.351	14.578	14.855	76.900	164.448
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

This program has been designated an ACAT IAC program. OSD had not yet assigned a PNO number prior to submission of the 15PB documentation. Future budget documents submissions will separate DCAPES from other program efforts within PE.

A. Mission Description and Budget Item Justification

Deliberate and Crisis Action Planning and Execution Segments (DCAPES) is a system being developed as the next-generation Air Force interface to the Joint Operational Planning and Execution System (JOPES). DCAPES is the Air Force's single system to present, plan, source, mobilize, deploy, account for, sustain, redeploy, and reconstitute forces for contingency and crisis operations. This system provides a real time, two way interchange of personnel, manpower, logistics, and operational data between the Air Force and the warfighting Combatant Commanders. It matches people, cargo, and airframes/weapon systems to the Combatant Commander's warfighting requirements. Acquisition of this system supports the Air Force's expeditionary force concept.

LOGFAC is a Web-enabled application that resides on Global Combat Support System (GCSS-AF) infrastructure and supports logistics / operational planning staffs at the HQ Air Staff, MAJCOM and Unit levels by determining wartime consumables and pre-positioning of AF assets for deliberate planning based on the War Mobilization Plan, Volume 4 (WMP-4).

Development activities include Logistics Module/Manpower and Personnel Module-Base (LOGMOD/MANPER B), War and Mobilization Planning (WMP), Enhanced Contingency Rotational AEF SchedulingTool (ECAST), Web Enablement, and JOPES Modernization Migration. Activities also include studies and analysis to support both current program planning and execution and future program planning to modify systems to consume authoritative force structure from Global Force Management-Data Initiative (GFM-DI) organizational servers, linking the identifiers to or replacing current identifiers and, as applicable, exposing the data in a net-centric fashion. Requirements validated with the Capability Development Document for DCAPES dated 2 June 2006.

This effort is an evolutionary follow-on to the Contingency Operations Mobility Planning and Execution System (COMPES). DCAPES replaced the operational tasking and priorities functionality of COMPES with modern relational databases, integrated-distributed database, and common and shared data consistent with the joint vision for integrated command and control. DCAPES is intended to provide a command and control capability by exchanging data with a range of planning support systems

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207452F / *DCAPES*

to provide a more effective force projection capability for a wider range of operational scenarios and will fully support the force provider function of the AF Forces (AFFOR) commander. DCAPES along with numerous other war planning support legacy systems are transitioning into a net-centric Service Oriented Architecture (SOA) environment via a War Planning and Execution System (WPES) management construct.

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

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	15.690	15.081	14.015	-	14.015
Current President's Budget	13.925	10.111	0.821	-	0.821
Total Adjustments	-1.765	-4.970	-13.194	-	-13.194
• Congressional General Reductions	-0.021	-0.024			
• Congressional Directed Reductions	-	-4.946			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.455	-			
• Other Adjustments	-1.289	-	-13.194	-	-13.194

Change Summary Explanation

Reduction in FY13 Other Adjustments was due to Sequestration.
Reduction in FY14 due to Congressionally directed program decrease.
Reduction in FY15 due to higher Air Force priorities.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Increment 2a, Loosely Couple DCAPES/JOPES Interfaces	11.785	8.806	0.771
Description: Increment 2a includes Loose Coupling between Deliberate and Crisis Action Planning and Execution Segment (DCAPES) and Joint Operational Planning and Execution System (JOPES), Infrastructure Support, and Business Intelligence. Increment 2a also includes requirements definition, prototyping, development, testing, interoperability, sustainment, and service oriented architecture transition.			
FY 2013 Accomplishments:			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207452F / *DCAPES*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Fielded v4222, part 1 of 2 loose coupling releases. Delivered loose coupling release 2 of 2, patch v5002 to Global Command and Control System (GCCS), the application host, for development and operational testing. Addressed critical warfighter requirements and maintained interoperability with JOPES. ***FY 2014 Plans:*** Conduct part 2 of 2 for loose coupling (v5002) from JOPES, developmental test, and regression test. Correct any defects from loose coupling testing. Continue increment 2a which includes, in addition to loose coupling, Infrastructure Support and Business Intelligence. ***FY 2015 Plans:*** Complete the Business Intelligence technical refresh. Complete and maintain builds for infrastructure.			
Title: Logistic Feasibility Analysis Capability (LOGFAC) v 3.1 release ***Description:*** Release of LOGFAC 3.1 establishes new capabilities including streamlined web-services with partnered programs, including DCAPES, to pull real-time MEFPAK data. LOGFAC v3.1 also adds the capability to perform Unit Type Code (UTC) analysis for feasibility of deployment. The new UTC compare function analyzes equipment and consumables available against a specific UTC to determine shortfalls that may prevent deployment. ***FY 2013 Accomplishments:*** LOGFAC v3.0 and v3.1 continued development with v3.0 and regression testing. ***FY 2014 Plans:*** LOGFAC v3.0 Development and Operational Testing with fielding set to occur near the end of FY14. LOGFAC v3.1 Development continuing as well as internal regression testing. ***FY 2015 Plans:*** Final development and testing to continue. Final fielding of LOGFAC v3.1 to be completed in FY16.	2.140	1.305	0.050
Accomplishments/Planned Programs Subtotals	13.925	10.111	0.821

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• NA: *NA*	-	-	-	-	-	-	-	-	-	-	-

Remarks

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207452F / *DCAPES*

E. Acquisition Strategy

The program uses an evolutionary acquisition strategy with incremental development with multiple software releases to accommodate refinement and prioritization of user requirements and improve adaptability with commercial technology.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207452F / *DCAPES*	**Project (Number/Name)** 674802 / *DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DCAPES Increment 2a	SS/FFP	Computer Science Corp. : Falls Church, VA	0.000	6.152	Jun 2013	3.624	Jun 2014	-		-		-	-	9.776	TBD
DCAPES Infrastructure / Integration	C/CPFF	DATUM Software Inc. : John Creek, GA	0.000	0.923	Feb 2014	0.937	Feb 2015	-		-		-	-	1.860	-
DCAPES BI Tools / Tech Refresh	C/CPFF	Array IT : Greenbelt, MD	0.000	0.994	Feb 2014	-		-		-		-	-	0.994	-
DCAPES Architecture Documentation Development	C/FFP	Copper River IT : Anchorage, AK	0.000	0.288	Jun 2013	0.380	Jun 2014	-		-		-	-	0.668	TBD
LOGFAC S/W Development	C/FFP	Harris IT services Corp. : Dulles, VA	0.000	1.559	Jan 2013	0.757	Aug 2014	-		-		-	-	2.316	-
LOGFAC Architecture Documentation Development	C/FFP	Cooper River IT : Anchorage, AK	0.000	0.072	Jan 2013	0.095	Jun 2014	-		-		-	-	0.167	-
		Subtotal	0.000	9.988		5.793		-		-		-	-	15.781	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DCAPES Contract Acquisition/Logistic Functional Support	C/CPFF	OASIS Systems Inc : Lexington, MA	0.000	0.530	Apr 2013	0.795	Apr 2014	0.100	Oct 2015	-		0.100	-	1.425	TBD
DCAPES Contract Cost Analysis Support	C/CPFF	Tecolote Research, Inc. : Goleta, CA	0.000	0.278	Oct 2012	0.278	Apr 2014	0.022	Oct 2015	-		0.022	-	0.578	TBD
DCAPES Contract Engineering Support	C/CPFF	Jacobs Technology, Inc : Lincoln, MA	0.000	0.266	May 2013	0.383	May 2014	0.100	Oct 2015	-		0.100	-	0.749	TBD
DCAPES FFRDC (Engineering)	SS/CPFF	Mitre : Bedford, MA	0.000	0.535	Oct 2012	0.412	May 2014	0.100	Oct 2015	-		0.100	-	1.047	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207452F / *DCAPES*	**Project (Number/Name)** 674802 / *DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DCAPES Contract Requirement Management Support	C/FFP	Certified Tech. Expert : Montgomery, Al	0.000	0.198	Jul 2013	0.248	Jul 2014	0.075	Oct 2015	-		0.075	-	0.521	-
DCAPES Contract System Security-Information Assurance	C/CPFF	Centech Group : Falls Church, VA	0.000	0.201	Feb 2013	-		-		-		-	-	0.201	TBD
DCAPES Contract Sys Integration/Tech Support	Various	Various : Various,	0.000	0.514	Sep 2013	0.694	Sep 2014	0.068	Oct 2015	-		0.068	-	1.276	-
DCAPES Licenses Software/Hardware	C/Various	Various : Various,	0.000	-		0.078	Nov 2014	0.078	Nov 2015	-		0.078	-	0.156	-
DCAPES SIPRNET Comm. Line-Information Assurance	MIPR	Various : Various,	0.000	0.079	Oct 2012	0.078	Oct 2013	0.078	Oct 2014	-		0.078	-	0.235	-
LOGFAC Contract Acquisition / Logistics Support	C/CPFF	Oasis Systems Inc. : Lexington, KY	0.000	0.028	Apr 2013	0.042	Apr 2014	-		-		-	-	0.070	-
LOGFAC Contract Cost Analysis Support	C/CPFF	Tecolote Research Inc : Goleta, CA	0.000	0.031	Nov 2012	0.031	May 2014	-		-		-	-	0.062	-
LOGFAC Contract Engineering Support	C/CPFF	Jacobs Technology Inc : Lincoln, MA	0.000	0.030	May 2013	0.043	May 2014	-		-		-	-	0.073	-
LOGFAC Contract Requirement Mgmt Support	C/FFP	Certified Technical Experts : Montgomery, AL	0.000	0.022	Sep 2013	0.028	Sep 2014	-		-		-	-	0.050	-
LOGFAC Contract Systems Security / IA Support	C/CPFF	Centech Group Inc : Falls Church, VA	0.000	0.050	Feb 2013	-		-		-		-	-	0.050	-
LOGFAC FFRDC	SS/CPFF	MITRE : Bedford, MA	0.000	0.058	Oct 2012	0.046	May 2014	-		-		-	-	0.104	-
		Subtotal	0.000	2.820		3.156		0.621		-		0.621	-	6.597	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207452F / *DCAPES*	**Project (Number/Name)** 674802 / *DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DCAPES Development Test and Evaluation	MIPR	46 Test Sqdn : Eglin AFB, FL	0.000	0.641	Jan 2012	0.292	Jan 2014	0.070	Jan 2015	-		0.070	-	1.003	TBD
DCAPES Operational Test and Evaluation	Various	605 Test Sqdn : Hurlburt Field, FL	0.000	0.092	Jan 2012	0.092	Jan 2014	-		-		-	-	0.184	TBD
DCAPES Interoperability Testing and Evaluation	MIPR	DISA JITC : Ft Hauchuca, AZ	0.000	0.039	Aug 2013	0.494	Dec 2013	-		-		-	-	0.533	TBD
DCAPES User Test Support	Various	Various : Various,	0.000	0.096	Oct 2012	0.020	Dec 2013	0.080	Oct 2014	-		0.080	-	0.196	TBD
LOGFAC Development Test and Evaluation	MIPR	46 Test Sqdn : Eglin AFB, FL	0.000	0.194	Oct 2012	0.125	Oct 2014	0.030	Oct 2015	-		0.030	-	0.349	-
LOGFAC Operational Test and Evaluation	Various	605 Test Sqdn : Hurlburt Field, FL	0.000	0.031	Oct 2012	0.031	Oct 2014	-		-		-	-	0.062	-
LOGFAC Interoperability Testing and Evaluation	MIPR	DISA JICT : Ft Hauchuca, AZ	0.000	-		0.108	Dec 2013	-		-		-	-	0.108	-
LOGFAC User Test Support	Various	Various : Various,	0.000	0.024	Oct 2012	-		0.020	Oct 2014	-		0.020	-	0.044	-
		Subtotal	0.000	1.117		1.162		0.200		-		0.200	-	2.479	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	13.925		10.111		0.821		-		0.821	-	24.857	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207452F / *DCAPES*	**Project (Number/Name)** 674802 / *DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)*

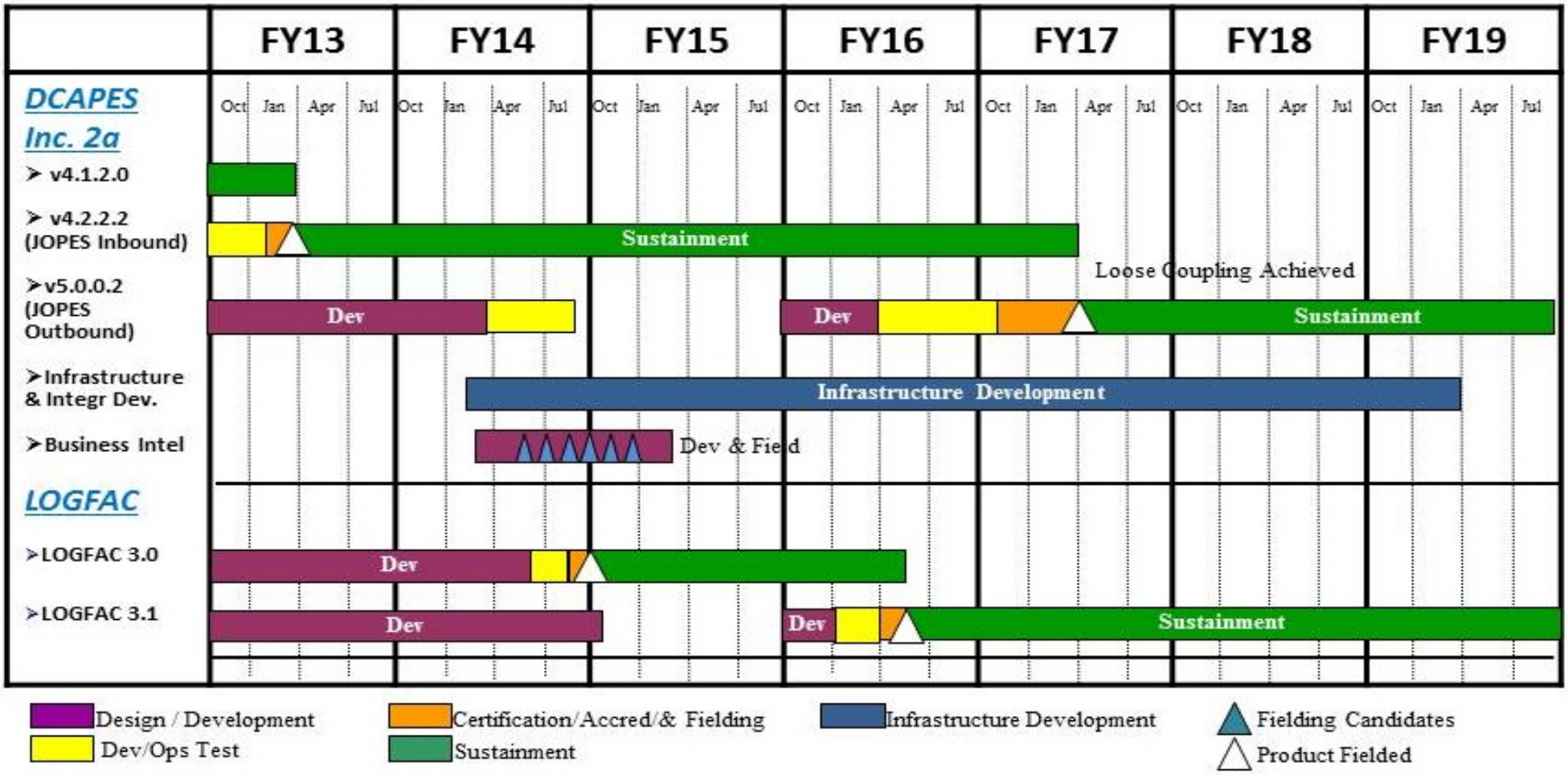


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207452F / *DCAPES*	**Project (Number/Name)** 674802 / *DELIBERATE AND CRISIS ACTION PLANNING AND EXECUTION SEGMENT (DCAPES)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DCAPES Increment 2A	1	2013	4	2019
--- v4.1.2.0 Sustainment	1	2013	3	2013
--- v4.2.2.2 (JOPES Inbound) Dev/Ops Test	1	2013	2	2013
--- v4.2.2.2 (JOPES Inbound) Certification/Accreditation/Fielding	2	2013	2	2013
--- v4.2.2.2 (JOPES Inbound) Sustainment	2	2013	2	2015
--- v5.0.0.2 (JOPES Outbound) Design/Development	1	2013	3	2016
--- v5.0.0.2 (JOPES Outbound) Dev/Ops Test	2	2014	1	2017
--- v5.0.0.2 (JOPES Outbound) Certification/Accreditation/Feilding	3	2016	3	2017
-- v5.0.0.2 (JOPES Outbound) Loose Coupling Achieved	3	2015	3	2017
--- v5.0.0.2 (JOPES Outbound) Sustainment	3	2017	4	2019
Infrastructure and Integration Development	2	2014	2	2019
Business Intelligence	2	2014	3	2015
LOGFAC 3.0 Design/Development	1	2013	3	2014
LOGFAC 3.0 Dev/Ops Test	3	2014	4	2014
LOGFAC 3.0 Certification/Accreditation/Fielding	4	2014	1	2015
LOGFAC 3.0 Sustainment	1	2015	3	2016
LOGFAC 3.1 Design/Development	1	2013	2	2016
LOGFAC 3.1 Dev/Ops Test	2	2016	3	2016
LOGFAC 3.1 Certification/Accreditation/Fielding	3	2016	3	2016
LOGFAC 3.1 Sustainment	1	2016	1	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207581F / *Joint Surveillance/Target Attack Radar System (JSTARS)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	23.566	23.148	-	-	-	0.001	-	-	-	Continuing	Continuing
670003: *JSTARS*	-	23.566	23.148	-	-	-	0.001	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY 2015, Project 670003, JSTARS efforts were transferred to PE 0307581F, NextGen JSTARS, Project 650003, JSTARS Recapitalization , in order to consolidate efforts and continue development of the JSTARs Recap.

A. Mission Description and Budget Item Justification

With the AF decision to begin the Joint Surveillance Target Attack Radar System (JSTARS) Recapitalization Program in FY15, and inclusion of funding for the program included in the FY15 President's Budget, no Modernization funds were requested for the legacy E-8C JSTARS program in FY 2015 and beyond.

The JSTARS is the world's premier airborne ground surveillance platform, meeting joint combat capability requirements. The 707-based E-8C JSTARS aircraft provides all-weather radar-derived Command and Control, Intelligence, Surveillance, and Reconnaissance (C2ISR) and targeting information on moving and stationary ground/surface targets to include dismounts, slow moving rotary and fixed wing aircraft, and rotating antennas. JSTARS provides target information for matching direct attack aircraft, standoff weapons, and ground-based attack assets against selected targets. It can be cued by other intelligence, surveillance, and reconnaissance (ISR) and target acquisition systems. This capability enables air and ground regional/geographic commanders to effectively make and execute battlefield decisions at the component commander's level to battlefield forces. It contributes to predictive battle space awareness.

This program element enhances the warfighter's ability to achieve the joint vision of combat operations. It develops advanced battle management aids and information fusion technologies to enable rapid decisions in tracking and killing time-critical targets. Concept exploration, program definition/risk reduction efforts, and studies support continuous improvements in C2ISR, network centric operational capabilities, and interoperability with joint service, allied, and coalition systems.

This program element currently comprises one development program, JSTARS Modernization, and the supporting Test and Infrastructure. Development efforts for the Prime Mission Equipment-Diminishing Manufacturing Sources (PME-DMS) and Communications and Networking Upgrades (CNU) developmental programs were completed in FY 2013.

Activities also include studies and analyses to support both current program planning and execution as well as support to Urgent Operational Needs (UONs).

I. JSTARS Modernization:

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207581F / *Joint Surveillance/Target Attack Radar System (JSTARS)*

The JSTARS modernization program consists of multiple efforts to develop and integrate platform wide system improvements.

Additional Modernization efforts could include interoperability with manned and unmanned platforms; space data links; advanced Battle-Management Command and Control (BMC2) concepts; 8.33/25 kHz VHF Radio with Single Channel Ground and Airborne Radio System (SINCGARS) voice and data communication; ISR Constellation; Air Moving Target Indicator (AMTI); Advanced Radar Modes (ARM); Aided Target Recognition (ATR); Synthetic Aperture Radar (SAR)/Enhanced Synthetic Aperture Radar (ESAR); Network Centric Collaborative Targeting (NCCT); Multi-Agency Communication Capability (MACC); CENTRIX; Public Key Infrastructure (PKI); and Beyond-Line-of-Sight (BLOS) Network Architecture Upgrades (BNAU).

Training and support systems upgrade efforts include, but are not limited to: Weapon Systems Trainer (WST); Navigator Training System (NTS); and Mission Crew Trainers to include a Mission Maintenance Trainer (MMT), Prime Mission Equipment-Maintenance Training Device (PME-MTD) and the Mission System Trainer (MST).

II. Test and Infrastructure:

The test infrastructure includes the JSTARS Extended Test Support (JETS), JSTARS Test Force (JTF), and C2 Enterprise Integration Facility (CEIF). All JSTARS efforts rely on the components of this test infrastructure to carry out RDT&E activities. The infrastructure includes a T-3 test aircraft, laboratories, support facilities, protection level (PL-2) security, Information Assurance (IA), and range support. All of the developmental programs have been completed. The Joint STARS test infrastructure continues to provide retrofit support to production programs and Urgent Operational Needs (UONs) as required. In FY 2014, the program began the transfer of test infrastructure assets to Robins AFB.

This program is in Budget Activity 7, Operational System Development. This budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	24.241	13.248	26.966	-	26.966
Current President's Budget	23.566	23.148	-	-	-
Total Adjustments	-0.675	9.900	-26.966	-	-26.966
• Congressional General Reductions	-0.032	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	9.900			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.643	-			
• Other Adjustments	-	-	-26.966	-	-26.966

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207581F / *Joint Surveillance/Target Attack Radar System (JSTARS)*

Change Summary Explanation

FY 2014: Congressional Appropriation Conference increase to retain T-3.

FY 2015: E-8C investment not funded in FY15 and beyond with decision to fund JSTARS Recapitalization

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: JSTARS Modernization ***Description:*** Multiple efforts to develop and integrate system improvements, platform wide. ***FY 2013 Accomplishments:*** Completed JSRM radar receiver flight demo,completed Avionics DMS (Av-DMS) studies and issued a report, completed BNAU integration and test, and continued Flight Viability Board (FVB) mitigation and Spiral Development. ***FY 2014 Plans:*** Issue a final report on JSRM. Complete CENTRIX activities on Phase I Tech Refresh. Support JSTARS Recap risk reduction activities. ***FY 2015 Plans:*** N/A	0.720	9.148	-
Title: Test and Infrastructure ***Description:*** Support test and infrastructure efforts including but not limited to Joint Test Force, JETS contract, CEIF, weight reduction studies, information assurance, range support, PL-2 security, T-3 aircraft, test labs, and facilities. ***FY 2013 Accomplishments:*** The Joint Test Force supported completion of the JSRM and PME DMS flight test programs. The Joint Test Force also assisted in the Enterprise Challenge exercises and participated in the BNAU and Multi-Agency Communications Capability (MACC) flight tests. The test labs supported the CNU retrofit program. Supported activities which were required for the fielding and installation of new and developing capabilities. ***FY 2014 Plans:*** The Joint Test Force and test labs support the CNU, PME DMS retrofit, and UONs as required. The test labs assist in the evaluation of the IR7 software release. The Congressional Appropriation Conference Committee appropriated $9.900M to retain the T-3 test aircraft. ***FY 2015 Plans:*** N/A	22.846	14.000	-
Accomplishments/Planned Programs Subtotals	23.566	23.148	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207581F / *Joint Surveillance/Target Attack Radar System (JSTARS)*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• APAF: BA05: Line Item # E00800: *E-8*	48.811	48.078	-	-	-	-	-	-	-	Continuing	Continuing

Remarks

E. Acquisition Strategy

Most major programs will be sole source to Northrop Grumman Corp. in Melbourne, Florida and Norwalk, Connecticut. Trainer programs are sole source to Rockwell Collins in Sterling, Virginia.

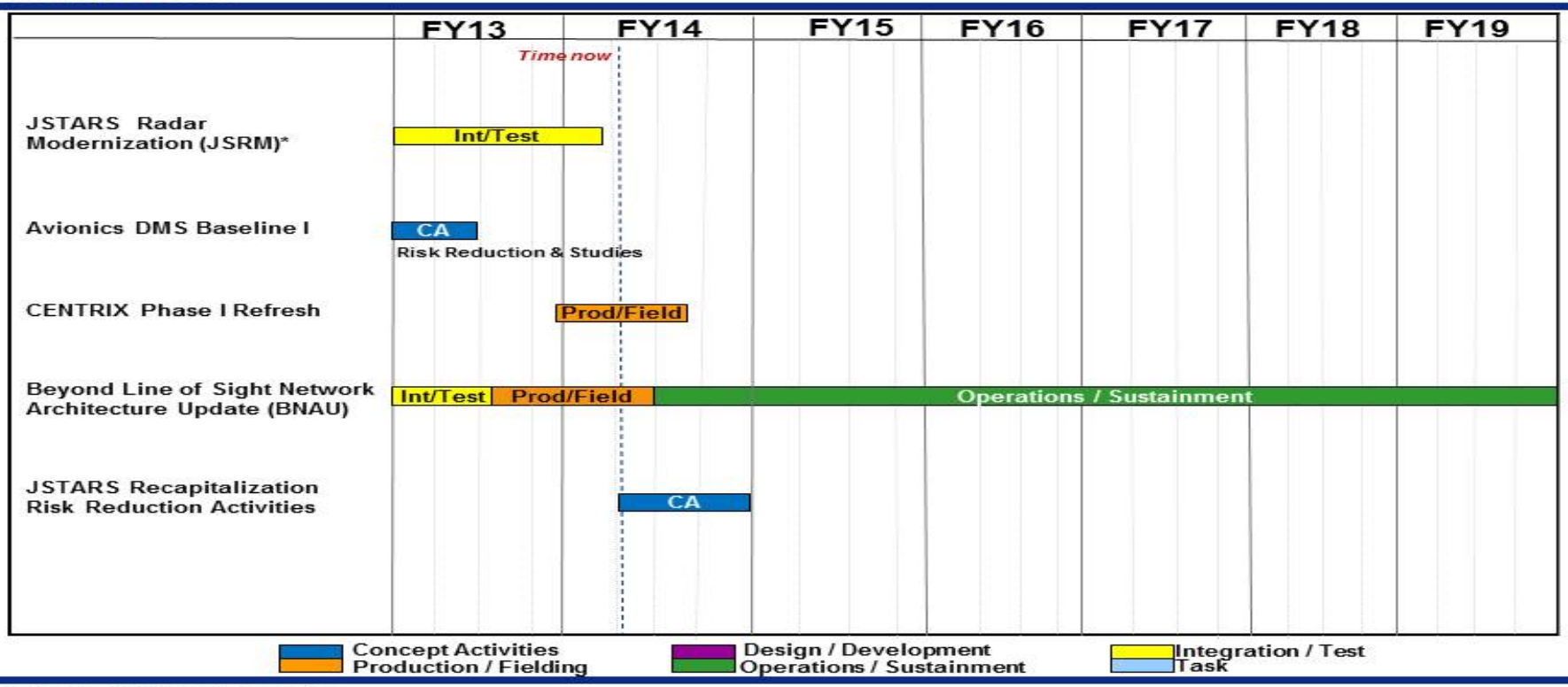
F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207581F / *Joint Surveillance/Target Attack Radar System (JSTARS)*	**Project (Number/Name)** 670003 / *JSTARS*

U.S. AIR FORCE

JSTARS Modernization Program Schedule



*Demonstrations – no follow-on production

As of: 11 Feb 14

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207590F / *Seek Eagle*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	20.451	22.386	23.844	-	23.844	24.014	24.379	24.860	25.327	Continuing	Continuing
674037: *SEEK EAGLE Certifications*	-	20.451	22.386	23.844	-	23.844	24.014	24.379	24.860	25.327	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Air Force operates a variety of combat aircraft that carry numerous and varied stores (munitions, missiles, fuel tanks, targeting pods, range pods, electronic countermeasures pods, etc.). Stores are carried in countless different loading combinations determined by operational and training scenarios, missions, tactics, and weapon development programs. Aircraft stores combinations change as operational plans and tactics change and as new stores are developed and fielded. Before operational, training, or test use, the Air Force must certify these configurations for safe loading, carriage, and separation (jettison and normal release), as well as verify ballistics accuracy under the user-certified carriage and employment parameters. The Air Force SEEK EAGLE program completes certification recommendations and recommended flight clearances through any combination of engineering analysis, wind tunnel testing, modeling and simulation, and ground/flight test and evaluation. The SEEK EAGLE effort encompasses eight disciplines: Fit and Function, Flutter, Loads, Stability and Control, Electromagnetic Compatibility/Interference (EMC/EMI), Separations, Ballistics, and Safe Escape.

In support of certification, the program recommends about 1000 aircraft/store combinations for flight each year with analysis and testing, requiring from weeks to years depending on the complexity. Integrated solutions for combat aircrew weapon delivery planning problems are developed and provided to combat forces via Combat Weapons Delivery Software (CWDS) and Joint Safe Escape Analysis Solution (JSEAS). SEEK EAGLE works in coordination with the Air Force Safety Center to provide Hazards of Electromagnetic Radiation to Ordnance (HERO) analysis and certification recommendations of ordnance systems containing electro-explosive devices. The program is also responsible for inserting new and emerging technologies into the SEEK EAGLE process as well as providing resources for the sustainment of a viable Air Force aircraft/store certification capability.

SEEK EAGLE funds are currently budgeted to support certification testing and analysis for new and inventory stores including, but not limited to: Small Diameter Bomb I & II (SDB), Laser Joint Direct Attack Munitions (LJDAM), Joint Air-to-Surface Standoff Missile (JASSM), Air Intercept Missile (AIM-9X), Advanced Medium Range Air-to-Air Missile (AIM-120D), Miniature Air-Launched Decoy (MALD), BRU-57 (Smart Bomb Rack), BRU-61 (SDB Bomb Rack), Wind Corrected Munitions Dispenser (WCMD), Sniper Targeting Pod with video data link, LITENING Targeting Pod with video data link, laser guided bombs, F-22 supersonic tank, B61 (Mod 12), penetrator warhead upgrades (BLU-111/BLU-117), practice bomb and aircraft instrumentation pod modifications. SEEK EAGLE funds are also used to support certification of other inventory stores on Combat Air Forces (CAF) and Special Operations Command (SOCOM) aircraft, assist the F-35 JPO with subject matter expertise in the System Development and Demonstration phase (e.g., development of organic store certifications capability to support F-35 in the Production, Sustainment, and Follow-on Development phases), sustain organic F-22 store certifications capability, and to obtain non-inventory stores and store data for post-integration certification requirements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207590F / *Seek Eagle*

This program is in Budget Activity 7, Operational System Development. These budget activities include development efforts to upgrade systems currently fielded or which have approval for full rate production and anticipate production funding in the current or subsequent year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	22.654	24.342	24.422	-	24.422
Current President's Budget	20.451	22.386	23.844	-	23.844
Total Adjustments	-2.203	-1.956	-0.578	-	-0.578
• Congressional General Reductions	-0.030	-			
• Congressional Directed Reductions	-	-1.956			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.296	-			
• Other Adjustments	-1.877	-	-0.578	-	-0.578

Change Summary Explanation

FY 2013, Other Adjustments: -$1.877M, Sequestration

FY 2014, Congressional Directed Reduction: -$1.956M, Program decrease

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: F-22A	2.000	0.500	-
Description: F-22A Capability Development and Weapons Certification.			
FY 2013 Accomplishments: Continued developing organic F-22 engineering capability in remaining four disciplines by receiving additional contractor deliverables and developing organic computational Modeling and Simulation (M&S) capabilities. Performed engineering analysis and began wind tunnel and flight test planning to support certification of supersonic tank and performed wind tunnel testing of AIM-9X on the F-22 for increment 3.2. Enlisted support from the contractor for engineering analysis for increment 3.2 aircraft-stores certification. Continued to provide capability flight recommendations.			
FY 2014 Plans: Finish certification of external fuel tanks at supersonic speeds and full AIM-120D integration.			
FY 2015 Plans:			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207590F / *Seek Eagle*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Support F-22 weapon certification requirements now part of Aircraft/Store Compatibility Analysis			
Title: F-35 ***Description:*** F-35 Capability Development for SEEK EAGLE began in FY13, to support Combat Air Force's (CAF's) anticipated requirements after Initial Operational Capability (IOC). ***FY 2013 Accomplishments:*** Began development of organic F-35 engineering capability in all eight engineering disciplines by receiving contractor data, tools, and technical support. ***FY 2014 Plans:*** Continue development of organic F-35 engineering capability in all eight engineering disciplines by receiving contractor data, tools, and technical support. ***FY 2015 Plans:*** Continue development of organic F-35 engineering capability in all eight engineering disciplines by receiving contractor data, tools, and technical support.	2.500	4.900	4.700
Title: M&S Capability ***Description:*** Modeling and Simulation (M&S) capability development in support of store certification ***FY 2013 Accomplishments:*** Continued development and improvement of M&S capability to support store certification disciplines. Example work included alpha and beta testing of new Create-AV/Kestrel code base for Stability and Control Discipline progressing from static aircraft to aircraft with moving control surfaces. Other key work included tools necessary to characterize F-22 and F-35 weapons bay environments including aero-acoustic prediction. ***FY 2014 Plans:*** Continue development and improvement of M&S capability to support store certification disciplines. Other key work includes tools necessary to characterize F-22 and F-35 weapons bay environments including aero-acoustic prediction. ***FY 2015 Plans:*** Continue development and improvement of M&S capability to support store certification disciplines. Other key work includes tools necessary to characterize F-22 and F-35 weapons bay environments including aero-acoustic prediction.	3.000	2.222	3.000
Title: Aircraft/Store Compatibility Analysis	11.247	13.742	14.442

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207590F / *Seek Eagle*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Evaluate aircraft/store compatibility through analysis, M&S and flight and ground test. Provide flight recommendations to airworthiness authorities. ***FY 2013 Accomplishments:*** Continually provided compatibility flight recommendations as requested by ACC/A8, LCMC, AFSOC and other agencies. Extensive F-16/SDB and F-16/AIM-9X flight testing was performed. ***FY 2014 Plans:*** Continually provide compatibility flight recommendations as requested by ACC/A8, LCMC, AFSOC and other agencies. Extensive F-16/SDB and F-16/AIM-9X flight testing will be performed. ***FY 2015 Plans:*** Continually provide compatibility flight recommendations as requested by ACC/A8, LCMC, AFSOC and other agencies. Extensive SDB II and B-61 (MOD 12) flight testing will be performed.			
Title: Combat Weapon Delivery Software (CWDS ***Description:*** Developed Mission Planning Software including Combat Weapon Delivery Software (CWDS). ***FY 2013 Accomplishments:*** Continued support of efforts aimed at improving aircrew interface. Continued support of CWDS requirements for multiple Mission Planning Environments (MPEs) on two different frameworks: Portable Flight Planning Software (PFPS) and Joint Mission Planning Software (JMPS). Continued transition to the redeveloped CWDS software for alignment with the JMPS roadmap architecture. Continued support of legacy CWDS development while full transition of MPEs to new JMPS framework was occuring. ***FY 2014 Plans:*** Continue support of efforts aimed at improving aircrew interface. Continue support of CWDS requirements for multiple MPEs on the JMPS framework. Continue transition to the redeveloped CWDS software for alignment with the JMPS roadmap architecture. Continue support of legacy CWDS development until full transition of all MPEs to new JMPS framework has occurred. ***FY 2015 Plans:*** Continue support of efforts aimed at improving aircrew interface. Continue support of CWDS requirements for multiple MPEs on the JMPS framework. Continue transition to the redeveloped CWDS software for alignment with the JMPS roadmap architecture. Continue support of legacy CWDS development until full transition of all MPEs to new JMPS framework has occurred.	1.704	1.022	1.702
Accomplishments/Planned Programs Subtotals	20.451	22.386	23.844

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207590F / *Seek Eagle*

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• None: *N/A*	-	-	-	-	-	-	-	-	-	-	-

Remarks

E. Acquisition Strategy

The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. For initial aircraft-weapons integration, the aircraft or weapon program office is responsible for budgeting and providing the test assets to AFSEO for the store certification requirements. For post integration certification reiquirements, AFSEO funds are used to obtain the non-inventory test assets.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207590F / *Seek Eagle*	**Project (Number/Name)** 674037 / *SEEK EAGLE Certifications*

The SEEK EAGLE program does not execute in accordance with established acquisition program milestones. Each aircraft/store configuration requested by the user goes through the SEEK EAGLE process by the designated user priority.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207601F / *USAF Modeling and Simulation*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	14.147	8.734	16.723	-	16.723	25.161	22.993	22.365	22.790	Continuing	Continuing
674567: *M&S Foundations*	-	5.249	1.202	9.692	-	9.692	13.753	11.805	12.036	12.265	Continuing	Continuing
675135: *Warfighter Readiness*	-	8.898	7.532	7.031	-	7.031	11.408	11.188	10.329	10.525	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

United States Air Force (USAF) Modeling & Simulation (M&S) Program Element (PE) is broken into two thrust areas: Modeling and Simulation Foundations, and Warfighter Readiness. It directly supports Air Force, Joint, Coalition composite training and rehearsal, concept development, and acquisition and testing through model and simulation development as well as the integration of these across and within Live, Virtual, and Constructive (LVC) environments. This program focuses on support of Department of Defense (DoD) Training Transformation (T2), acquisition excellence initiatives, and foundational capabilities needed for interoperability, accessibility, reuse, and scalability. It allows the authoritative portrayal of new and emerging Air Force capabilities within DoD and coalition LVC environments; as well as reciprocating their capabilities within our Air Force LVC environments.

LVC environments today are used as the most cost effective and practical means to meet mission needs. In support of the DoD T2 initiative, USAF M&S program thrust areas develop and modernize models and simulations that are the constructive backbone of Air Force and joint training and rehearsal. Once these models and simulations are developed, they are integrated across training LVC environments for use by Major and Combatant Commands. This development and integration is imperative to ensure that air, space, and cyberspace training and mission rehearsal activities are supported with realistic, interoperable, and readily available tools, data, and services. These, in turn, enable joint, coalition, and interagency training required to prepare forces for combat by generating the air and space picture for the Air and Space Operations Center (AOC), Joint Force Air Component Commander (JFACC), and Joint Force Commander in combat exercises; training over 50,000 personnel per year in exercises (e.g., Ulchi Freedom Guardian, Red & Blue Flags, Unified Endeavor, etc). These programs also provide the current foundational environment that enables warfighters to interact with high-fidelity tactical cockpit simulators, which replicate high demand/low density platforms that are often unavailable for training due to real-world operations; while simultaneously linking it to warfighters using their current command and control systems 1,000 miles away and the constructive simulations being run from key operational wargaming and simulation centers worldwide.

USAF M&S is integral to inter-agency Homeland Defense (HLD) exercises chartered to train combat units tasked to protect the Homeland, including the National Capital Region (exercise Amalgam Arrow); this generates equipment and manpower efficiencies by using simulations which reduce fuel consumption, aircraft wear and tear, and manpower costs. In support of the DoD drive to improve the effectiveness and efficiency of its enterprise-wide acquisition business processes, the USAF M&S Program Element develops and supports enhancements to models, simulations, tools, and the LVC infrastructure to provide for system-of-systems M&S capabilities across the lifecycle, reduce developmental costs, and minimize risks. These capabilities support the acquisition process from concept development through test and evaluation. Activities also include studies and analysis to support both current program planning and execution and future program planning.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*

This program is in Budget Activity 7, Operational System Development, this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	15.501	10.448	19.601	-	19.601
Current President's Budget	14.147	8.734	16.723	-	16.723
Total Adjustments	-1.354	-1.714	-2.878	-	-2.878
• Congressional General Reductions	-0.021	-0.031			
• Congressional Directed Reductions	-	-1.683			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-1.333	-	-2.878	-	-2.878

Change Summary Explanation

In FY 2013: Other Adjustment row (-$1.333M) due to sequestration.
In FY 2014: Congressional Directed Reduction row (-$1.683) due to program decrease.
In FY 2015: Other Adjustment row (-$2.878M) due to higher AF priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207601F / *USAF Modeling and Simulation*	Project (Number/Name) 674567 / *M&S Foundations*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
674567: *M&S Foundations*	-	5.249	1.202	9.692	-	9.692	13.753	11.805	12.036	12.265	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Modeling and Simulation Foundations (MSF) focuses on integrating foundational capabilities needed to improve the usefulness, productivity, scalability and efficiency of Modeling and Simulation (M&S) capabilities derived from the Warfighter Readiness (WR) thrust. MSF is the: standards, policies, procedures, architectures, and tools that enable the rapid and efficient composition of distributed environments to support both the warfighter needs and the US Air Force's (USAF) functional communities of: acquisition, training, planning, analysis, testing, education, and experimentation requirements. The efforts supporting the MSF thrust include both concept exploration and development.

MSF provides the capability to rapidly and efficiently create realistic and accurate synthetic operational battlespaces to support the full spectrum of activities associated with concept development to acquisition and testing through composite training and mission rehearsal. This is done by providing appropriate authoritative data and component representations. With the capability generated via MSF, users will readily access available repositories of reusable, validated, and integrated synthetic components. Synthetic components include representations of operational battlespace entities (such as friendly and enemy assets) and representations of the natural environment that include the terrain, atmospheric and space weather effects given the proper data sets, and energy and signal propagation effects. The rapid composition is based on a durable common architecture framework, policies, and common standards. MSF capability also supports: efficient, cost-effective verification, validation, and accreditation activity across all of the M&S functional and organizational communities.

The Air Constructive Environment-Information Operations Suite (ACE-IOS) provides the authoritative representation of Air Force information operations. ACE-IOS is comprised of models that support training and mission rehearsal for the Air Force, Joint Task Force commanders, and COCOM battle staffs during Joint and Service exercises and experimentations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Air Constructive Environment - Information Operations Suite (ACE-IOS)	4.849	1.202	9.692
Description: ACE-IOS provides the authoritative representation of Air Force information operations. IOS is comprised of models that support training and mission rehearsal for the Air Force, Joint Task Force commanders, and COCOM battle staffs during Joint and Service exercises and experimentations.			
FY 2013 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*	**Project (Number/Name)** 674567 / *M&S Foundations*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Provided the authoritative representation of Air Force information operations. ACE-IOS is comprised of models that support training and mission rehearsal for the Air Force, Joint Task Force commanders, and Combatant Command (COCOM) battle staffs during Joint and Service exercises and experimentations. ***FY 2014 Plans:*** Version 5.0.15.0 provides the authoritative representation of Air Force information operations. IOS is comprised of models that support training and mission rehearsal for the Air Force, Joint Task Force commanders, and COCOM battle staffs during Joint and Service exercises and experimentations. Specific accomplishments are the development of these capabilities: ACE-IOS Terrain Modeling, Process Abstract Intent and produce communication traffic/intelligence, Identification Friend or Foe/Selective Identification Feature (IFF/SIF) Mode 5 and S, New Joint Intelligence Messaging Management System (JIMMS) database application, model for Air Warfare Simulation (AWSIM) Airbase Communication Facility, and develop/replace the National Wargaming Simulation (NWARS) interface for the Joint Live Virtual Constructive (JLVC) Federation. ***FY 2015 Plans:*** Version 6.0.16.0 will continue to provide the authoritative representation of Air Force information operations at a reduced level of effort. ACE-IOS is comprised of models that support training and mission rehearsal for the Air Force, Joint Task Force commanders, and COCOM battle staffs during joint and service exercises and experimentations. Will continue to support the development of: ACE-IOS Terrain Modeling, Process Abstract Intent and produce communication traffic/intelligence, IFF/SIF Mode 5 and S, Joint Intelligence Messaging Management System (JIMMS) database application, model for Air Warfare Simulation (AWSIM) Airbase Communication Facility, and the National Wargaming Simulation (NWARS) interface for the Joint Live Virtual Constructive (JLVC) Federation.			
Title: Air & Space Natural Environment (ASNE) ***Description:*** Provide DoD M&S community with tools to search the ASNE scenarios; measure effects on weapon systems and subsystems and distribute tailored reusable databases and products. ***FY 2013 Accomplishments:*** Continued to develop and implement ASNE capabilities that enabled a standardized integrated architecture for the Live, Virtual, and Constructive (LVC) enterprise. FY 2013 is the last year funds are being provided for ASNE. ***FY 2014 Plans:*** N/A ***FY 2015 Plans:*** N/A	0.400	-	-
Accomplishments/Planned Programs Subtotals	5.249	1.202	9.692

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*	**Project (Number/Name)** 674567 / *M&S Foundations*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Air Force Life Cycle Management Center (AFLCMC) at Hanscom AFB, MA manages the acquisition and incremental development process for all M&S activities. All major contracts will be awarded after full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*	**Project (Number/Name)** 674567 / *M&S Foundations*

PE 0207601F – USAF Modeling & Simulation
M&S Foundations (674567) Schedule

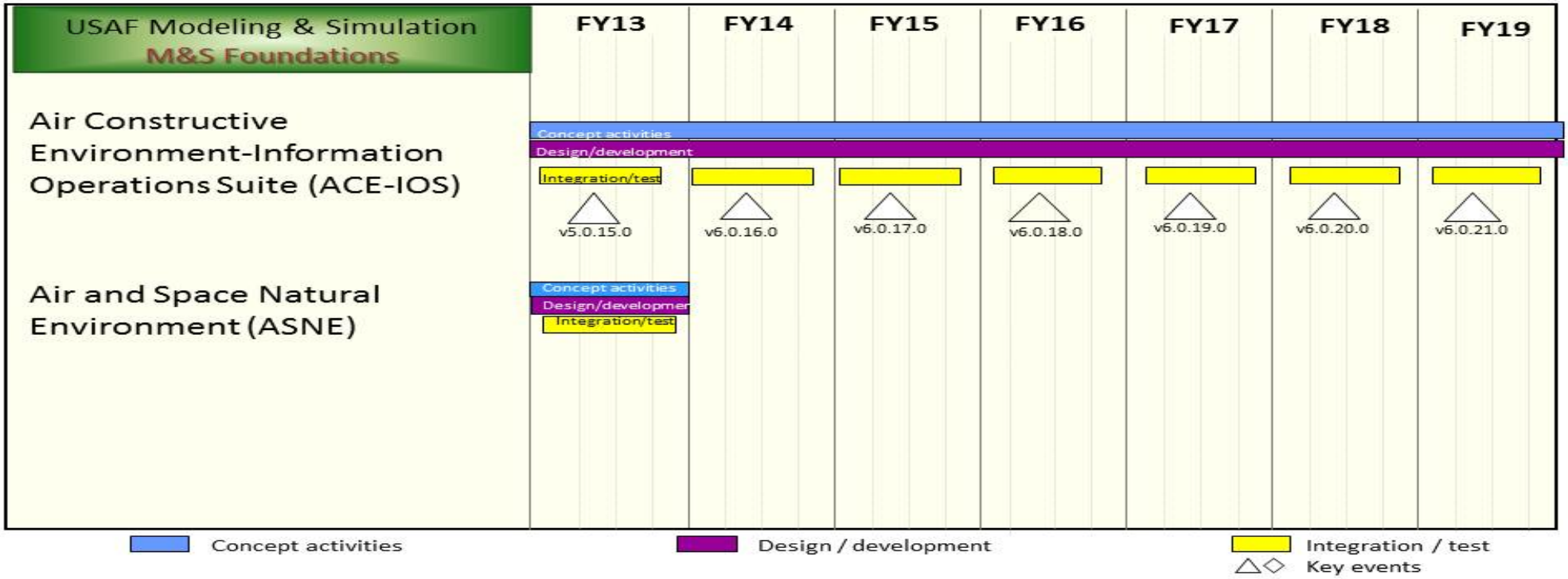


Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207601F / *USAF Modeling and Simulation*	Project (Number/Name) 675135 / *Warfighter Readiness*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675135: *Warfighter Readiness*	-	8.898	7.532	7.031	-	7.031	11.408	11.188	10.329	10.525	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Modeling and Simulation support to our Warfighter's Readiness is a United States Air Force (USAF) corporate imperative to ensure air, space, cyberspace training, and mission rehearsal activities are supported with realistic, interoperable, and readily available, tools, data, services and environments. Warfighter readiness supports Department of Defense (DoD) Training Transformation (T2) and Joint National Training Capability (JNTC) along with the USAF priorities and core functions. Activities also include studies and analysis to support both current program planning, execution, and future program planning.

It includes several complimentary programs, initiatives and areas for investment: Warfighter and Joint Training Integration supports the Chief of Staff of the Air Force (CSAF) directed Live, Virtual, and Constructive (LVC) integration efforts and is a critical piece to the USAF's implementation of the Strategic Plan for Transforming DoD Training. The goal of LVC training and mission rehearsal is to prepare our warfighters for the full range of military operations and maintain the combat readiness levels required by the Combatant Commands (COCOMs). This can only be accomplished by training and rehearsing in realistic operational environments. These environments include live training ranges and virtual simulators enhanced with constructive entities. Specific training and mission rehearsal events can include some or all of these simultaneously; making the ability to integrate LVC capabilities a necessity.

The Air, Space, and Cyberspace Constructive Environment (ASCCE) is the USAF's authoritative federation of constructive training models and tools realistically representing the tactical and operational capabilities the USAF brings to the joint fight. It includes the Air Force Modeling and Simulation Training Toolkit (AFMSTT), which provides the authoritative representation of AF and joint theater-level air and space power and is used to train Air and Space Operations Center (AOC) personnel and Combat Commanders (COCOM) battle staffs. The primary model in the AFMSTT is the Air Warfare Simulation (AWSIM).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Air, Space, and Cyberspace Constructive Environment (ASCCE)	8.898	7.532	7.031
Description: Air Force Modeling & Simulation Training Toolkit (AFMSTT)/Air Warfare Simulation (AWSIM)			
FY 2013 Accomplishments: Version 5.4 continued to develop the Air, Space, and Cyberspace Constructive Environment (ASCCE) via the Air Force Modeling & Simulation Training Toolkit (AFMSTT)/ Air Constructive Environment-Information Operations Suite (ACE-IOS) modernization effort.			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*	**Project (Number/Name)** 675135 / *Warfighter Readiness*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Version 6.0 continues the development of the Air, Space, and Cyberspace Constructive Environment (ASCCE) via the Air Force Modeling & Simulation Training Toolkit (AFMSTT)/ Air Constructive Environment-Information Operations Suite (ACE-IOS) modernization effort. ***FY 2015 Plans:*** Version 6.2 will continue the development of the Air, Space, and Cyberspace Constructive Environment (ASCCE) via the Air Force Modeling & Simulation Training Toolkit (AFMSTT)/Air constructive Environment-Information Operations Suite (ACE-IOS) modernization effort.			
Accomplishments/Planned Programs Subtotals	8.898	7.532	7.031

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

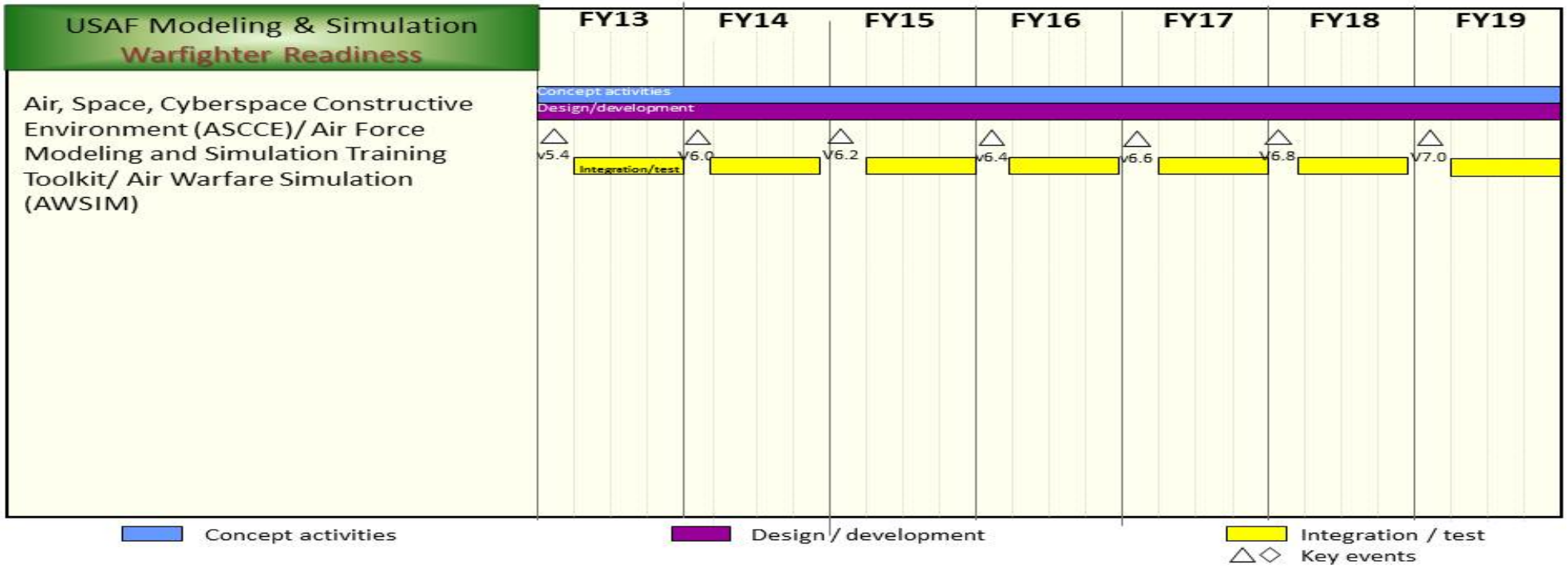
Air Force Life Cycle Management Center (AFLCMC) at Hanscom AFB, MA manages the acquisition and incremental development process for all M&S activities. All major contracts will be awarded after full and open competition.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*	**Project (Number/Name)** 675135 / *Warfighter Readiness*

PE 0207601F – USAF Modeling & Simulation Warfighter Readiness (675135) Schedule



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207605F / *Wargaming and Simulation Centers*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	5.071	5.512	5.956	-	5.956	6.075	6.063	6.181	6.298	Continuing	Continuing
672888: *Distributed Mission Operations Center (DMOC)*	-	5.071	5.512	5.956	-	5.956	6.075	6.063	6.181	6.298	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Distributed Mission Operations Center (DMOC) provides comprehensive Live, Virtual, and Constructive (LVC) simulation capabilities which prepares warfighters to conduct dominant operations in: air, space, cyber, ground, and surface domains an environment for theater-level, full spectrum combat training for Air Force/joint/ coalition partners. This reaches 22 geographically separated LVC locations across 17 time zones representing such assets as: real-world weapon systems, operator-in-the-loop, and constructive or computer-driven simulations. It is responsible for development and integration of scenarios, models, and databases and the integration of participating sites into Virtual Flag (VF) training events via numerous network connections, DMOC-developed interoperability tools, and controlled interfaces in support of Air Force, joint, and coalition warfighter readiness. In addition, activities include DMO technology and capability studies/analyses which support both current and future program planning and execution.

The DMOC utilizes RDT&E funding for the following to enhance DMO training:

1. Distributed Mission Operations Capability/Battlespace Systems Development: The DMOC upgrades and enhances the capabilities of various environment generators (i.e. DMOC is in partnership with the US Naval Air Systems Command (NAVAIR) to enhance the capabilities of the Next Generation Threat System (NGTS) from version 2.4.14 to version 3.5 over the next two-three years that will provide blue air and other capabilities), DMO tools (i.e. the DMOC Replay Tool is regularly upgraded to allow for a more complete mission review and debrief capability of the exercises as more sites and systems are added to events (future development will include the Multi-Level Security (MLS) capability), Tactical Air Information Datalink-J (TADIL-J) Doctor-J tool allows tactical datalinks to be communicated and translated between differing simulator communication formats), and other capabilities that enhance DMO training (i.e. the Intelligence, Surveillance, and Reconnaissance (ISR)/Battle Damage Assessment (BDA) project continues the improvement of damage state models used by intelligence analysts in exercises, and DMOC develops solutions for introducing Contested Degraded Operations (geographical and communications jamming) into DMO events.

2. Certification & Accreditation (C&A) and Networthiness: The DMOC supports requirements definition, integration test support, scenario development, analysis, systems engineering support, and C&A and Networthiness of core systems, and it implements requirements of Information Assurance (IA) Risk Management Framework and Continuous Monitoring. Efforts include C&A of the Distributed Training Network Guard, a DMOC/NAVAIR partnership and accreditation work for the DMOC Replay Tool, Multinational Information Sharing (MNIS) rule set, and the Distributed Interactive Simulation (DIS) filter tool.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207605F / *Wargaming and Simulation Centers*

3. Distributed Training Sites & Systems Integration: DMOC integrates distributed training sites and systems for DMO training events such as Virtual Flag (VF) and Coalition VF (four-eyes event) by resolving interoperability issues between disparate systems and networks so that all exercise participants can interact in the DMO environment. New sites and systems are incorporated into DMO events each year based on emerging higher headquarters and Combatant Commanders (COCOM) requirements.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	5.699	5.512	6.031	-	6.031
Current President's Budget	5.071	5.512	5.956	-	5.956
Total Adjustments	-0.628	-	-0.075	-	-0.075
• Congressional General Reductions	-0.008	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.150	-			
• Other Adjustments	-0.470	-	-0.075	-	-0.075

Change Summary Explanation

FY13 decrease in Other Adjustments row due to sequestration.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Distributed Mission Operations (DMO) Capability / Battlespace Systems Development	3.258	3.541	3.826
Description: Simulation software/hardware development in support of users conducting RDT&E, mission rehearsal, and concepts of operation development.			
FY 2013 Accomplishments: Enhanced Red and Blue Air/Ground/Sea simulators (NGTS, version 2.4.14 to 3.1); modified Radio Ranging Tool to improve simulation of communications degradation based on geographical environment which provided more fidelity to Contested Degraded Operations (CDO) in DMO events. Initiated a CDO study to determine what other CDO aspects should be incorporated; enhanced the Doctor J tool to allow tactical datalinks to be communicated and translated between differing simulator communication formats; upgraded Intelligence, Surveillance, and Reconnaissance (ISR)/Battle Damage Assessments (BDA)			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207605F / *Wargaming and Simulation Centers*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
which added infrared damage states to models. In addition, continued the development of Distributed Training Network Guard (DTNG) Controlled Interface to support future Coalition VF and RED KITE training events. ***FY 2014 Plans:*** Enhance Red and Blue Air/Ground/Sea simulators (NGTS version 3.1 to 3.3); begin work on developing/integrating the findings from the FY13 CDO study; continue development of DMO tools such as Doctor J, DMOC Replay Tool, and the DIS Filter tool as modifications/improvements are identified after completion of DMO events. Continue controlled interface ruleset development for coalition events. ***FY 2015 Plans:*** Will continue improvements to Red and Blue Air/Ground/Sea simulation (NGTS - ver 3.3 to 3.5); continue development of DMO tools such as Doctor J, DMOC Replay Tool, and the DIS Filter tool as modifications/improvements are identified after completion of DMO events; other efforts will be started based on changing M&S technology and emerging AF and COCOM requirements. In addition, will continue coalition ruleset development for coalition events.			
Title: Certification & Accreditation (C&A) and Networthiness ***Description:*** Support requirements definition, integration test support, scenario development, analysis, systems engineering support, and C&A and Networthiness of core systems. Implement requirements of IA Risk Management Framework and Continuous Monitoring. ***FY 2013 Accomplishments:*** Continued the C&A of DTNG, a DMOC/NAVAIR partnership program. Accomplished accreditation work for the DMOC Replay Tool, Multinational Information Sharing (MNIS) rule set, and DIS Filter tool. Acquired battlespace accreditation. ***FY 2014 Plans:*** Continue C&A efforts for DTNG and MNIS rulesets and other emerging requirements based on technology changes. Implement requirements of IA Risk Management Framework and Continuous Monitoring. ***FY 2015 Plans:*** Will continue C&A efforts for emerging requirements based on technology changes. Will implement requirements of IA Risk Management Framework and Continuous Monitoring; will continue to maintain Battlespace accreditation.	0.942	1.024	1.107
Title: Distributed Training Sites & Systems Integration ***Description:*** Establish site/system integration/interoperability between DMOC, operational units, and modeling & simulation facilities. ***FY 2013 Accomplishments:***	0.871	0.947	1.023

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207605F / *Wargaming and Simulation Centers*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continued site/system integration for three VIRTUAL FLAG (VF) and one Coalition VF (CVF) exercises conducted. Completed the first-ever inclusion of F-16CM Mission Training centers and Australian E-7A (Wedgetail); completed the first ever Live Hot Panel Raid mission integrated into CVF scenario; completed the first ever Australian Distributed Common Ground System (DCGS) crew in CVF; completed the first ever United Kingdom Sentinel crew on DMOC Virtual Surveillance and Target Attack Radar System (VSTARS) during CVF; completed the first ever Navy Warfare Development Command (NWDC) integration that provided a robust maritime scenario; completed the first ever DMO formation flights; evaluated VF as possible Joint Interface Control Officer (JICO) certification venue. ***FY 2014 Plans:*** Continue the site/system integration for three VIRTUAL FLAG (VF) and one Coalition VF exercises. Add new sites and systems based on higher headquarters and COCOM requirements. Integrate the EC-130H into DMO events. Continue to study the feasibility of supporting CYBER FLAG. Continue the exploration of a combined Red Flag and VF. Continue to evaluate VF as a possible JICO certification venue. ***FY 2015 Plans:*** Will continue the site/system integration of three VIRTUAL FLAG (VF) and one Coalition VF exercises. Will continue to add new sites and systems based on higher headquarter and COCOM requirements.			
Accomplishments/Planned Programs Subtotals	5.071	5.512	5.956

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

The Distributed Mission Operations Center (DMOC) supports AF/Joint/Coalition DMO and the Joint National Training Capability (JNTC) through the development and integration of DMO training and test events, networks, scenarios, and databases. Due to evolving modeling & simulation technology, the DMOC is an on-going, evolutionary effort to keep pace with those changes by continuously developing/upgrading DMO environment generators, systems, and tools and ensuring integration/ interoperability of new systems into DMO to provide the best warfighter training possible.

DMOC awards full and open contracts that manage the acquisition, development, testing, and integration of DMO standards, training, modeling and simulation, cross-domain information sharing testbed, and exercises on AF/Joint/Coalition DMO networks.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207605F / *Wargaming and Simulation Centers*

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207605F / *Wargaming and Simulation Centers*	**Project (Number/Name)** 672888 / *Distributed Mission Operations Center (DMOC)*

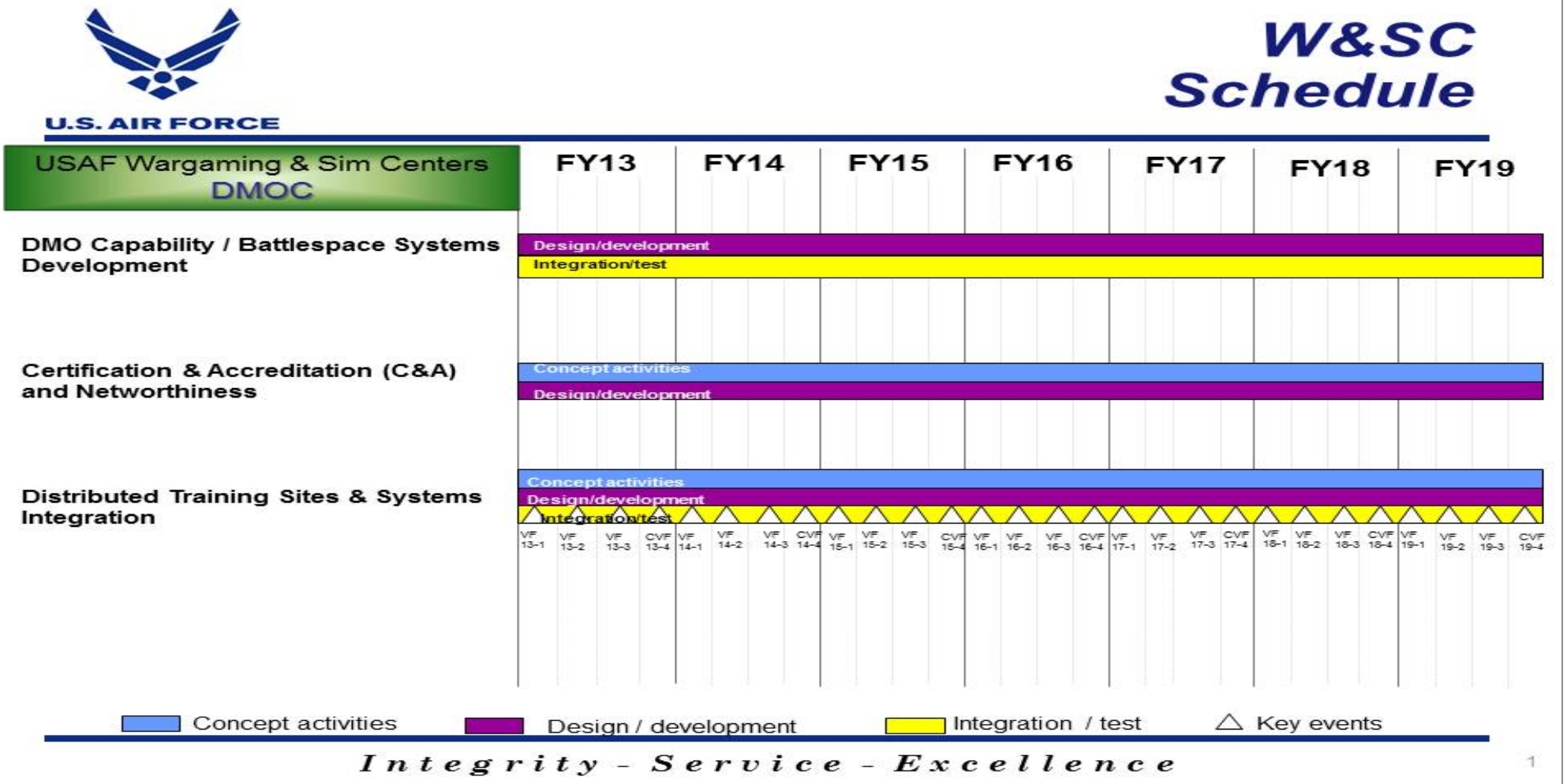


Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207697F / *Distributed Training and Exercises*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	2.833	3.301	4.457	-	4.457	4.387	4.171	4.253	4.333	Continuing	Continuing
675190: *JFCOM Wargaming*	-	2.833	3.301	4.457	-	4.457	4.387	4.171	4.253	4.333	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

In September 03, the AF/CV directed the establishment of funding to increase participation in joint transformation activities including joint concept development and experimentation and joint Doctrine, Organization, Training, Material, Leadership & Education, Personnel & Facilities (DOTMLPF) recommendations. Air Force A5XS ensures accurate representation of air, space and cyber space capabilities in joint activities, through modeling and simulation and wargaming activities. The primary activity through which this is accomplished is the Chief of Staff of the United States Air Force?s Unified Engagement (UE) wargame series. UE is a two-year cycle of planning, execution, analysis and reporting of activities that include workshops, seminars, capstone event, senior leader seminar, and Building Partnership Capacity events. The capstone event includes over 400 Joint, other Agency, and coalition partners supported by cutting edge technology creating the Wargame Information Environment (WIE). The WIE includes a fully deployable suite of information technology as well as Modeling & Simulation tools supported by multiple servers and workstations. The WIE evolves with each UE game cycle to reflect technological advancement and game objective requirements. The WIE employs numerous models to provide rigor to analysis of collected data to directly assist planners and adjudicators prior to, during and after game execution. The WIE offers a state of the art system for document management, office collaboration and chat that is fully integrated into the suite of tools. The newest addition to the WIE is a web-based tool to show force locations and processing force movement requests. The WIE provides collaboration tools and information throughout the wargame and associated events. The WIE provides users with integration of the latest modeling, simulation and analysis tools and also the infrastructure to support the WIE. Additionally, it captures insights and observations in support of post-game analysis and reporting. This program is categorized in Budget Activity (BA) 07 because it supports the development efforts of operational systems.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207697F / *Distributed Training and Exercises*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	4.425	3.301	4.513	-	4.513
Current President's Budget	2.833	3.301	4.457	-	4.457
Total Adjustments	-1.592	-	-0.056	-	-0.056
• Congressional General Reductions	-0.004	-			
• Congressional Directed Reductions	-1.200	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.084	-			
• Other Adjustments	-0.304	-	-0.056	-	-0.056

Change Summary Explanation

FY13 was reduced by SAC for unjustified growth.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Develop/ Upgrade M&S Tools for WIE	1.275	1.665	2.591

Description: Develop air, space and cyber space wargaming specific functionality in existing modeling and simulation and analysis tools and integrate into the latest version of the WIE.

FY 2013 Accomplishments:

Developed air and space wargaming specific functionality among existing simulation and analysis tools (e.g., BMD I-Sim/STORM/ JFAST), and extended that collaboration to include internally developed tools (e.g. ForceTracker (common operating picture & force management tool)/ Request for Forces Tool / Objectives & Observation Tool) to meet wargame requirements as well.

FY 2014 Plans:

Further development of air and space wargaming specific functionality among existing simulation and analysis tools (e.g., BMD I-Sim/STORM/JFAST), and extended that collaboration to include internally developed tools (e.g. ForceTracker (common operating picture & force management tool)/ Request for Forces Tool / Objectives & Observation Tool) to meet wargame requirements as well.

FY 2015 Plans:

Further development of air and space wargaming specific functionality among existing simulation and analysis tools (e.g., BMD I-Sim/STORM/JFAST), and extended that collaboration to include internally developed tools (e.g. ForceTracker (common operating

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207697F / *Distributed Training and Exercises*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
picture & force management tool)/ Request for Forces Tool / Objectives & Observation Tool) to meet wargame requirements as well.			
Title: CRRA Development ***Description:*** Provides for capabilities, Requirements, and Risk Assessment (CRRA) ***FY 2013 Accomplishments:*** Provides for Capabilities, Requirements, and Risk Assessment (CRRA) ***FY 2014 Plans:*** Provides for Capabilities, Requirements, and Risk Assessment (CRRA) ***FY 2015 Plans:*** Provides for Capabilities, Requirements, and Risk Assessment (CRRA)	0.775	0.800	0.864
Title: JCD&E Tools ***Description:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2013 Accomplishments:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2014 Plans:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2015 Plans:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation	0.480	0.541	0.632
Title: Software License & Replacement Costs ***Description:*** Supplies platforms for software in operational environments and for programmed replacement costs ***FY 2013 Accomplishments:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2014 Plans:*** Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation ***FY 2015 Plans:***	0.303	0.295	0.370

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207697F / *Distributed Training and Exercises*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Enables entity-level simulation tools and effects-based modeling for Joint Concept Development and Experimentation			
Accomplishments/Planned Programs Subtotals	2.833	3.301	4.457

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

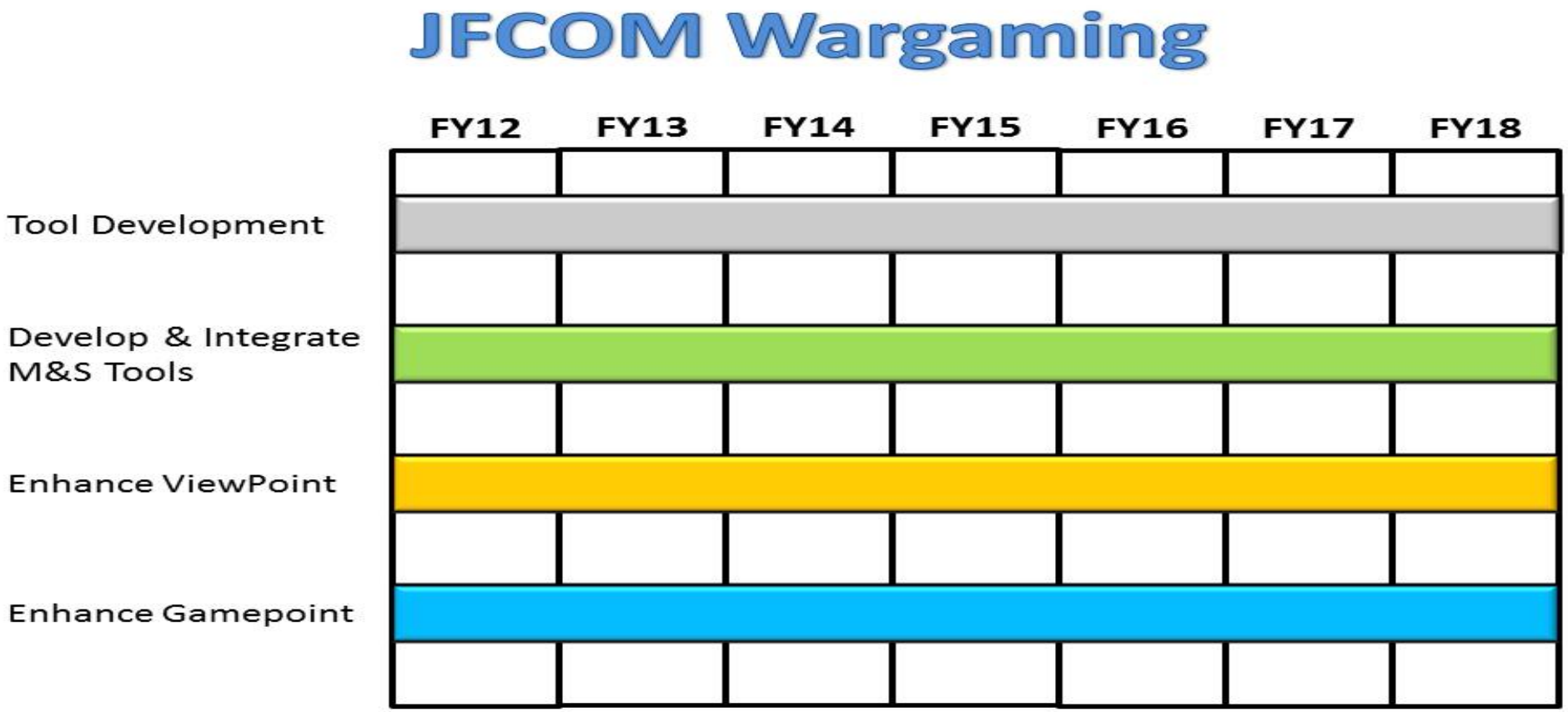
E. Acquisition Strategy

Unified Engagement (UE) Wargame Information Environment (WIE) support: The WIE is a continually evolving system that is a deployable standalone Local Area Network (LAN) with servers and laptops that host applications to support virtual battlespace collaboration, decision making, and three dimensional visualizations. Behind these applications are cutting edge technologies and database architectures from both commercial off the shelf and government developed software that assures relevance to the UE Wargame. The modeling, simulation, and analysis applications allow UE participants, adjudicators, and control team members to effectively and efficiently create UE Reports informing concept development and supporting the CSAF?s Title 10 responsibilities to organize, train and equipment. The current version of the WIE is 3.0 and 3.5 is to be released in early 2015 in support of UE 16. Risks are low in the research, development, and test of the WIE because of the iterative nature in the design and development of the system.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207697F / *Distributed Training and Exercises*	**Project (Number/Name)** 675190 / *JFCOM Wargaming*



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0208006F / *Mission Planning Systems*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	64.035	62.432	60.679	-	60.679	65.701	83.246	82.894	84.798	Continuing	Continuing
673858: *Mission Planning Systems (MPS) Development*	0.000	1.161	0.660	-	-	-	-	-	-	-	-	1.821
675302: *Precision Aerial Delivery Systems (PADS)*	0.000	5.546	3.299	6.972	-	6.972	11.987	12.777	14.115	14.384	Continuing	Continuing
675380: *Mission Planning Systems (MPS) Modernization*	0.000	57.328	58.473	53.707	-	53.707	53.714	70.469	68.779	70.414	Continuing	Continuing
MDAP/MAIS Code: N35												

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability, and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapons, cargo, passenger, and/or fuel delivery, calculate fuel requirements, and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print, and brief the mission plan; and download pertinent flight information to on-board aircraft avionics.

The Mission Planning Systems (MPS) program is a collaborative program with the Army and Navy to leverage technical solutions and business practices for all Department of Defense (DoD) platforms. It provides automated mission planning tools and support for fixed and rotary wing aircraft and guided munitions. It replaced two closed architecture legacy mission planning systems (UNIX-based MPS (UNIX-MPS) and the PC-based Portable Flight Planning Software (PFPS)), with a single multi-service open architecture system more commonly referred to as the Joint Mission Planning System (JMPS). MPS will compress the mission planning cycle by providing an improved integrated planning environment, reducing the time required to respond to changing situations and urgent needs such as striking time sensitive/ critical targets and conducting combat search and rescue. MPS products have the potential to support all DoD fixed-wing and rotary-wing aircraft and will be shared with other AF programs as well as the Army and Navy. MPS will deliver significant benefits to command and control performance by enhancing information superiority for the warfighter and by providing unique capabilities in support of both precision engagement and dominant maneuver.

To meet the unique needs of Air Mobility Command (AMC), the Mobility Air Force Automated Flight Planning Service (MAFPS) component of MPS will provide a centralized, net-centric global mobility mission flight planning capability. This capability will provide significant fuel savings through automated flight route optimization utilizing aircraft performance, air traffic management, weather, and other data.

In addition to the above, elements of Mission Planning Systems will be utilized to continue development of a Joint Precision Airdrop System (JPADS) in conjunction with the Army. The JPADS System of Systems (SoS) capability provides a planning and execution capability for DoD airdrop requirements. It is the primary airdrop

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*

mission planning and execution system for all ballistic airdrop mission as well as precision guided airdrops that are required when the mission profile or surface-to-air threat assessment warrants a high-altitude and/or standoff precision delivery. JPADS enables high-altitude, precise airdrop delivery to forward ground forces, mitigating surface-to-air threats, reducing risk of Improvised Explosive Device (IED) & insurgent attack on ground convoys. JPADS allows the warfighter to consider weather, terrain, aircraft capabilities, threat, etc. to accurately deliver payloads to keep the warfighter supplied and in the fight.

FY15 funding will continue the MPS software development program. It will develop pre and in-flight mission planning capabilities for a variety of Air Force aircraft and weapons from legacy mission planning systems to the new MPS. These weapon systems include, but are not limited to the: A-10, B-1B, C-5, C-17, C-130, E-3, E-8, F-15, F-16, F-22A, RC-135, HH-60, and their associated weapons (e.g. Small Diameter Bomb (SDB), Joint Direct Attack Munitions (JDAM), Joint Air-to-Surface Standoff Munitions (JASSM), etc.). FY15 funding will also continue the development of MAFPS to realize fuel savings and other efficiencies. Additionally, it will continue the development of JPADS airdrop software (and other system components) to provide a precision airdrop capability for the C-17, C-130, and other selected platforms as necessary.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	69.377	62.605	86.628	-	86.628
Current President's Budget	64.035	62.432	60.679	-	60.679
Total Adjustments	-5.342	-0.173	-25.949	-	-25.949
• Congressional General Reductions	-0.091	-0.173			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.941	-			
• Other Adjustments	-3.310	-	-25.949	-	-25.949

Change Summary Explanation

FY2013 Other Adjustments decreased $3.310M due to Sequestration.

FY2015 Other Adjustments decreased $25.949M for higher Air Force priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / *Mission Planning Systems*	Project (Number/Name) 673858 / *Mission Planning Systems (MPS) Development*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
673858: *Mission Planning Systems (MPS) Development*	-	1.161	0.660	-	-	-	-	-	-	-	-	1.821
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on threats, targets, terrain, weather, aircraft performance capability and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirement and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; and download pertinent flight information to on-board aircraft avionics.

This project provides for the continuous improvement of mission planning software capabilities that cut across all platforms and systems. It allows for the investigation of new technologies and products that have the potential for improving mission planning systems. This includes the continuous upgrading of the MPS framework. The framework is the underlying baseline capability for all mission planning systems. It will require regular upgrades to: 1) reduce timelines for route planning; 2) transmit near real-time intelligence data to the platforms; 3) increase the accuracy of the mapping products; 4) provide a Windows-based, commercial off the shelf-based, user friendly product; and 5) retain compatibility with platform changes to avionics and operational flight programs. Funding will support development and modernization activities for the following efforts within this project area:

a. MPS Increment IV: Continues development activities to complete the initial migration of designated Increment IV platforms (from the Combat Air Forces (CAF) and Mobility Air Forces (MAF) to the new MPS planning capability. This includes the F-22 Mission Planning Environment (MPE) which will support new capabilities for weapons integration, sensor updates, and avionics changes integrated on board the aircraft. Planned updates include transitioning selected platform to the Windows 7 operating system. Additionally, the development effort will also address new and emerging Operational Flight Program (OFP)-generated requirements as identified by the operational users. Updates to common component (e.g. airdrop and weather) will also be completed as required.

b. Test, Training and Certification: Continues all MPS-related integration, test, and certification activities for CAF and MAF platforms. Funding for these support efforts will be programmed with their associated project/program in FY14 and the outyears.

c. Operational and Technical Support: Continues all program office management operations and support activities to ensure the timely delivery of mission planning systems to the warfighter.

No Budget Year (FY15) funding is requested for this activity.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 673858 / *Mission Planning Systems (MPS) Development*

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: MPS Increment IV	1.161	0.660	-
Description: Continues contractor-executed software development and test activities required to migrate selected CAF and MAF platforms to the new MPS Increment IV mission planning capability. ***FY 2013 Accomplishments:*** Completed development and contractor testing of unique planning components of the Mission Planning Environments (MPEs) for F-22 and A-10. ***FY 2014 Plans:*** Complete operational testing of OFP-driven updates (e.g. Global Pilot Vehicle Interface, Windows 7 operating environment, Link 16, Combat ID) for the F-22 MPE.			
Accomplishments/Planned Programs Subtotals	1.161	0.660	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

MPS development utilizes an evolutionary acquisition approach to develop and deliver an interoperable, network-centric, mission planning system tailored for numerous Air Force platforms using competition and multiple contract vehicles.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 673858 / *Mission Planning Systems (MPS) Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MPS Incr IV Software Development (MPEC II)	C/Various	Various : Various,	0.000	0.203	Nov 2012	0.563	Nov 2013	-		-		-	Continuing	Continuing	TBD
Systems Engineering and Integration (SEIC)	C/CPAF	SAIC : McLean, VA	0.000	0.100	Nov 2012	0.031	Nov 2013	-		-		-	Continuing	Continuing	TBD
A-10 Development	PO	Organic : Hill AFB, UT	0.000	-		-		-		-		-	Continuing	Continuing	TBD
		Subtotal	0.000	0.303		0.594		-		-		-	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	-	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Responsible Test Organization (RTO)	PO	46TW : Eglin AFB, FL	0.000	0.195	Nov 2012	0.022	Nov 2013	-		-		-	Continuing	Continuing	TBD
Certification and Accreditation	MIPR	JITC : Indian Head, MD	0.000	0.007	Jan 2013	-		-		-		-	Continuing	Continuing	TBD
Type I Training	C/FP	Ogden Air Logistics Center : Hill AFB, UT	0.000	0.103	Nov 2012	0.024	Nov 2013	-		-		-	Continuing	Continuing	TBD
Field Representative Hardware	C/Various	Various : Various,	0.000	0.062	Nov 2012	0.004	Nov 2013	-		-		-	Continuing	Continuing	TBD
		Subtotal	0.000	0.367		0.050		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 673858 / *Mission Planning Systems (MPS) Development*

Management Services ($ in Millions)

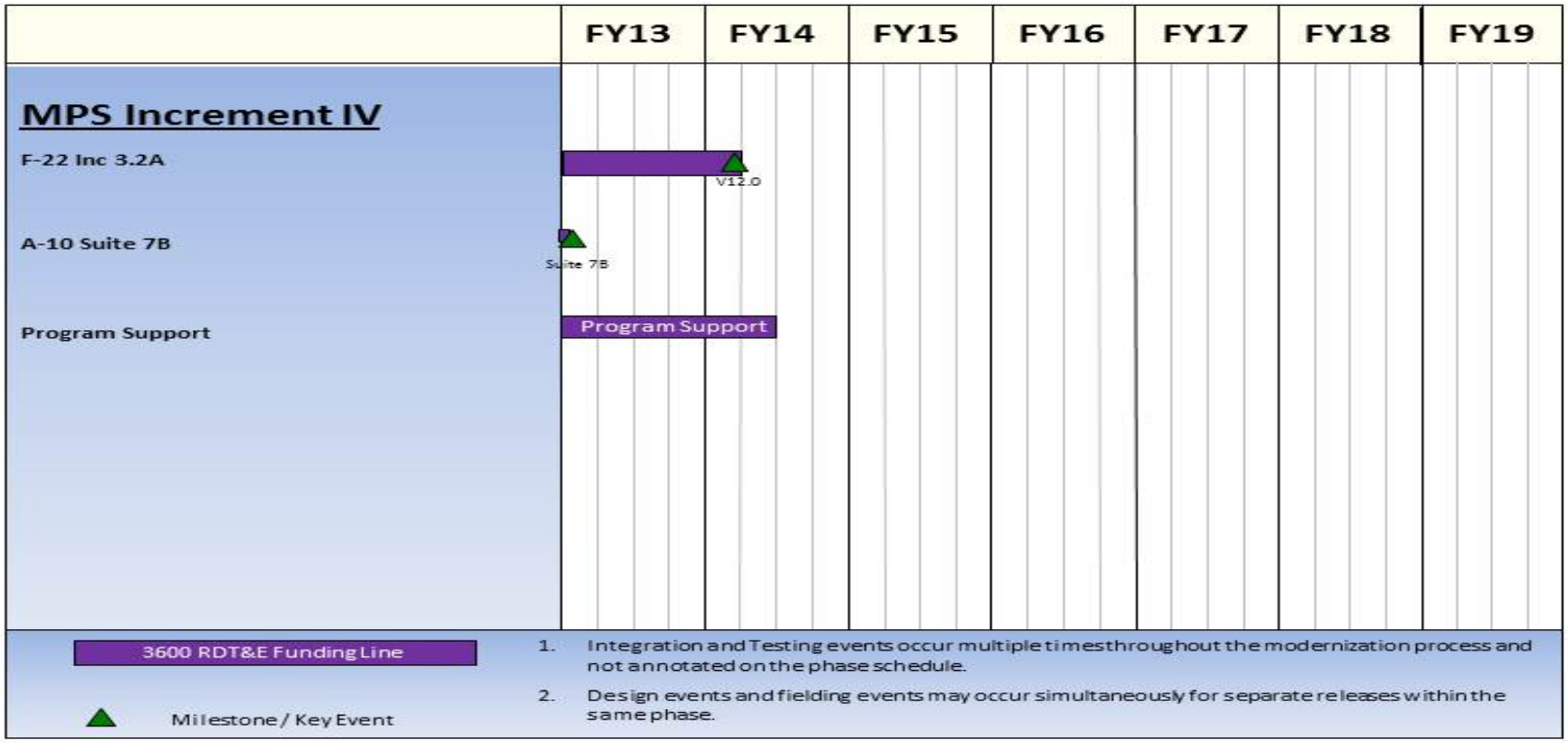
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical and Engineering Support	RO	Mitre Corp : Bedford, MA	0.000	0.222	Oct 2012	0.007	Oct 2013	-		-		-	Continuing	Continuing	TBD
Program Management Administration	Various	Various : Various,	0.000	0.269	Nov 2012	0.009	Nov 2013	-		-		-	Continuing	Continuing	TBD
		Subtotal	0.000	0.491		0.016		-		-		-	-	-	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	1.161		0.660		-		-		-	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 673858 / *Mission Planning Systems (MPS) Development*

Mission Planning Systems (MPS) Development
Project 673858



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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 673858 / *Mission Planning Systems (MPS) Development*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-22 Inc 3.2A v12.0 Fielding	1	2014	1	2014
A-10 Suite 7B Fielding	1	2013	1	2013
Program Support	1	2013	2	2014

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / *Mission Planning Systems*	Project (Number/Name) 675302 / *Precision Aerial Delivery Systems (PADS)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675302: *Precision Aerial Delivery Systems (PADS)*	-	5.546	3.299	6.972	-	6.972	11.987	12.777	14.115	14.384	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on multiple inputs including threats, targets, terrain, weather, aircraft performance capability, and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirement and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; download pertinent flight information to on-board aircraft avionics; and, conduct dynamic/in-flight replanning as applicable.

This project continues the development of a Joint Precision Airdrop System-Mission Planner (JPADS-MP) Phase I capability in conjunction with the Army contract vehicle. JPADS provides a planning and execution capability for DoD airdrop requirements. It is the primary airdrop mission planning and execution system for all ballistic airdrop missions as well as precision guided airdrops that are required when the mission profile or surface-to-air threat assessment warrants a high-altitude and/or standoff precision delivery. It enables high-altitude, precise airdrop delivery to forward ground forces, mitigating surface-to-air threats, reducing risk of Improvised Explosive Devices (IEDs) and insurgent attack on ground convoys. JPADS allows the warfighter to consider weather, terrain, aircraft capabilities, threat, etc., to accurately deliver payloads to combat and other friendly forces.

The Consolidated Airdrop Tool (CAT) is the key JPADS-MP software deliverable. It will increase the accuracy of airdrop mission planning by improving aircraft, payload, and chute specific calculations along with weather analysis visualization tools specifically adapted for airdrop. In addition, the AFRL-led Precision Airdrop (PAD) Flagship Capability Concept (FCC) effort will transition technology capabilities (including but not limited to Bundle Tracking, Forced Exit, Autonomous Weather Sensing, Humanitarian Airdrop, and Airdrop Performance) to the JPADS-MP PoR and into various CAT software release/deliverables. The PAD FCC is also charged with updating airdrop platforms and airdrop related systems to improve accuracy across all airdrop mission types. The following capabilities are currently planned for development within the JPADS-MP program:

a. CAT 2.x includes, but is not limited to, the development and incorporation of Digital Terrain Data (DTED), Wireless Gate Release (WGRS), and aircraft specific Monte Carlo solutions into JPADS-MP.

b. CAT v3.x includes, but is not limited to, updates to the operating systems and standard desktop configuration (SDC), refactor of the weather component known as WinPADS, replaces the Local Area Prediction System (LAPS), and Airdrop Damage Estimate (ADE) capabilities. It also transitions and supports the AFRL PADS FCC capability of bundle tracking.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675302 / *Precision Aerial Delivery Systems (PADS)*

c. CAT 4.x includes, but is not limited to, Operating System/Standard Desktop Configuration (OS/SDC) updates, migration to the new Mission Planning Systems (MPS) capability, combination airdrop, and new map projections including polar stereographic.

d. CAT v5.x includes, but is not limited to, approach headings for guided systems, secondary cargo airdrop release, and transitions AFRL PADS FCC forced exit and humanitarian airdrop capabilities.

e. CAT v6.x includes, but is not limited to, new chute configurations and aerial guidance units, updates ballistics data and dispersion models and transitions AFRL PADS FCC Light Detection and Ranging (LIDAR) and RADAR sensing capabilities for real-time weather.

f. CAT v7.x includes, but is not limited to, OS/SDC updates, force deployment, and transitions AFRL PADS FCC human effectiveness capabilities.

FY15 funding continues development, testing, and fielding of CAT ver 3.2 software to provide a precision and conventional airdrop capability for AF and other services (e.g. the Army) aircraft platforms.

This program is in Budget Activity 7, Operational System Development, which includes development efforts to upgrade systems that have been fielded or have received approval for full rate production, and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: JPADS-MP Phase I	5.546	3.299	6.972
Description: Continues development of a JPADS capability for precise, high altitude delivery of material to forward ground forces.			
FY 2013 Accomplishments: Fielded Cat 2.1. Continued CAT v3.x devlopment activities. These activities included: 1) Modified antiquated airdrop software for the integration of new weather solutions; 2) brought code-base up to modern standards and practices for modularity and ease of re-use; 3) developed aircraft/chute system specific calculations for increased accuracy; 4) developed capability for airdrop software to ingest updates to payload ballistic data; 5) developed capability to display location of dropped bundles; and 6) made necessary updates in the software to accommodate new mission computers.			
FY 2014 Plans: Phase I: Complete fielding of CAT v2.2 and will field CAT v3.0 and v3.1. Continue CAT v3.x development. Also continue development and integration of weather forecast and analysis tools (customized for precision airdrop) and integrate an Airdrop Damage Estimate (ADE) tool for improved planning. Efforts also include revising the work-flow of the software and maximizing automation in order to simplify mission execution for the aircrew. Continues development of CAT v4.x activities to expand precision airdrop capabilities for accurate calculation of leaflet dispersion and developing calculations and capabilities for			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675302 / *Precision Aerial Delivery Systems (PADS)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
combination airdrop for personnel and heavy equipment in a single pass. Efforts also include the migration of airdrop software to a JMPS framework. ***FY 2015 Plans:*** Phase I: Field CAT v3.2. Will continue CAT 4.x development activities to expand precision airdrop capabilities for accurate calculating of leaflet dispersion and development of calculations/capabilities for combination airdrop for personnel and heavy equipment in a single pass. Will also migrate airdrop software to a JMPS framework. Will also initiate CAT 5.x development to continue evolution of CAT S/W into an automated suite of airdrop mission tools to include key Flagship Capabilities Concept (FCC) directives (e.g. humantitatrian airdrop, improved accuracy through updated algorithms, data transfer to Navaids, dropsonde optimization, and ability to transfer wind information along the flight path to Autonomous Guidance Units (AGUs)).			
Accomplishments/Planned Programs Subtotals	5.546	3.299	6.972

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA07: Line Item # 833170: *Mission Planning Systems*	8.487	6.725	8.400	-	8.400	9.715	9.281	9.161	9.815	Continuing	Continuing

Remarks

D. Acquisition Strategy

PADS utilizes an evolutionary acquisition approach to develop and deliver an interoperable, network-centric, mission planning system tailored for numerous Air Force platforms using competition and multiple contract vehicles.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / *Mission Planning Systems*	Project (Number/Name) 675302 / *Precision Aerial Delivery Systems (PADS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	MIPR	TYBRIN : Ft Walton Beach, FL	0.000	3.889	Nov 2012	1.561	Nov 2013	6.277	Nov 2014	-		6.277	Continuing	Continuing	TBD
Systems Engineering and Integration	C/CPAF	SAIC : McLean, VA	0.000	0.471	Nov 2012	0.954	Nov 2013	0.316	Nov 2014	-		0.316	Continuing	Continuing	TBD
		Subtotal	0.000	4.360		2.515		6.593		-		6.593	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Engineering	C/T&M	SEI : Pittsburgh, PA	0.000	0.014	Nov 2012	0.012	Nov 2013	0.011	Nov 2014	-		0.011	Continuing	Continuing	TBD
Cost Estimating	C/T&M	Tecolote Inc : Bedford, MA	0.000	0.036	Nov 2012	0.024	Nov 2013	0.027	Nov 2014	-		0.027	Continuing	Continuing	TBD
		Subtotal	0.000	0.050		0.036		0.038		-		0.038	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Responsible Test Organization (RTO)	PO	46TW : Eglin AFB, FL	0.000	0.287	Nov 2012	0.250	Nov 2013	0.075	Nov 2014	-		0.075	Continuing	Continuing	TBD
Certification and Accreditation	MIPR	JITC : Indian Head, MD	0.000	0.011	Jan 2013	0.010	Jan 2014	-		-		-	Continuing	Continuing	TBD
Type I Training	C/FP	Ogden Air Logistics Center : Hill AFB, UT	0.000	0.151	Nov 2012	0.133	Nov 2013	-		-		-	Continuing	Continuing	TBD
Field Representative Hardware	C/Various	Various : Various,	0.000	0.092	Nov 2012	0.081	Nov 2013	-		-		-	Continuing	Continuing	TBD
		Subtotal	0.000	0.541		0.474		0.075		-		0.075	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675302 / *Precision Aerial Delivery Systems (PADS)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Technical Support	RO	MITRE Corp : Bedford, MA	0.000	0.285	Oct 2012	-		-		-		-	Continuing	Continuing	TBD
Program Management Administration	Various	Various : Various,	0.000	0.310	Nov 2012	0.274	Nov 2013	0.266	Nov 2014	-		0.266	Continuing	Continuing	TBD
		Subtotal	0.000	0.595		0.274		0.266		-		0.266	-	-	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	5.546		3.299		6.972		-		6.972	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675302 / *Precision Aerial Delivery Systems (PADS)*

Precision Aerial Delivery Systems (PADS)
Project 675302

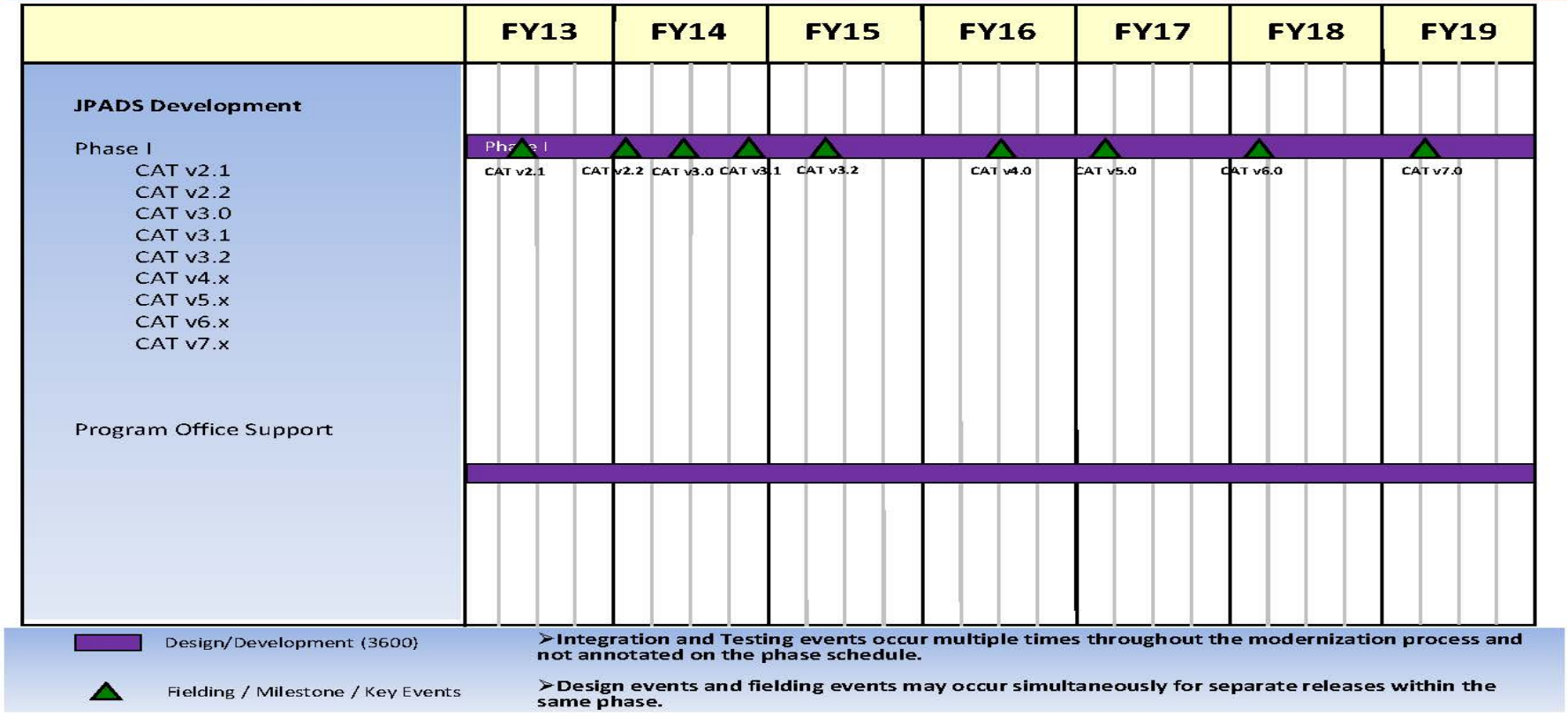


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675302 / *Precision Aerial Delivery Systems (PADS)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JPADS-MP CAT v2.1 Fielding	2	2013	2	2013
JPADS-MP CAT v2.2 Fielding	1	2014	1	2014
JPADS-MP CAT v3.0 Fielding	2	2014	2	2014
JPADS-MP CAT v3.1 Fielding	4	2014	4	2014
JPADS-MP CAT v3.2 Fielding	2	2015	2	2015
JPADS-MP CAT v4.0 Fielding	3	2016	3	2016
JPADS-MP CAT v5.0 Fielding	1	2017	1	2017
JPADS-MP CAT v6.0 Fielding	1	2018	1	2018
JPADS-MP CAT v7.0 Fielding	2	2019	2	2019
Program Office Support	4	2013	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / *Mission Planning Systems*	Project (Number/Name) 675380 / *Mission Planning Systems (MPS) Modernization*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
675380: *Mission Planning Systems (MPS) Modernization*	-	57.328	58.473	53.707	-	53.707	53.714	70.469	68.779	70.414	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan(s) based on threats, targets, terrain, weather, aircraft performance capability and configuration. It is an essential task that must be completed prior to any fixed or rotary wing aircraft sortie. The planner must have the ability to plan weapons, cargo, passenger, and/or fuel delivery, calculate fuel requirement, and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft, review, print and brief the plan; and download pertinent flight information to on-board aircraft avionics.

This project focuses on modernizing MPS to support Combat Air Forces (CAF) and Mobility Air Forces (MAF), including the development, test and sustainment of Mission Planning Environments (MPEs) to support the A-10, B-1B, C-5, C-17, C- 27, C-130, E-3, E-8, F-15, F-16, F-22A, KC-10, KC-46, KC-135, RC-135, other platforms, and all common component (CCs)software tools currently approved as necessary for mission requirements. Activities also include studies and analysis to support both current program planning and execution and future program planning. MPS Modernization efforts are as follows:

a. CAF MPE Modernization: These development efforts modernize CAF MPEs that were previously developed and delivered under MPS Increments II and IV. The modernization effort will provide new and improved mission planning capability for individual Operational Flight Program (OFP) requirements, such as new weapons, avionics upgrades, communications systems, etc. The OFPs requiring MPE updates under the CAF modernization effort in Fiscal Years 2011 through 2017 include but are not limited to those for A-10 (Suites 8, 9, 10, 11, and 12), B-1B (Sustainment Blocks 15, 16, 16a, 17 and 18), F-15 (Suites 7, 8, 9, and 10), F-16 Block 30 (System Capability Upgrade [SCU] 8, 9, and 10), F-16 Block 40/50 (M6.1, M6.5, M7.1, and M8.0) and F-22 (Increments 3.2B, 3.2C, and 4.0). CAF modernization also includes updates to mission planning capabilities supporting associated weapons, including small diameter bomb (SDB-II), joint direct attack munitions (JDAM) and the Joint air-to-surface standoff missile (JASSM). Finally, CAF modernization will address required improvements to CAF related MPE CCs, including Precision-Guided Munitions Planning System (PGMPS), Electronic Warfare CC (EWCC), etc. CAF MPE Modernization includes the following platform efforts:

1) F-15 Modernization Phase II: This modernization program consists of multiple software development efforts driven by OFP updates for F-15 Suites 7, 8, and 9. Suite 7 MPE capabilities include, but are not limited to, Digital Transfer Device (DTD) improvements, updates for new features in weapons such as Joint Direct Attack Munition (JDAM), Small Diameter Bomb (SDB), AIM-9X, AIM-120D, and Network Enable Weapon support elements (e.g. key handling, weapon data link, and Link 16). It will also include enhancements to the synthetic aperture radar planning tool (SAR-PT) and the global area reference tool as well as radar modernization updates (e.g. combat identification, radar planning tool enhancements). Development efforts for F-15 Suite 8 include, but are not limited to, integration of B61 Life Extension Program (LEP), feature updates for several weapons, and the expansion of Link-16 messages sets. F-15 Suite 9 MPE will include a variety of updates and enhancements for weapons and aircraft systems to include a new Advanced Dual Core Process II (ADCP-II) computer as well as Digital Transfer Device/Modules (DTD/DTM) modernization.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

2) F-16 Block 30 Modernization Phase I: The F-16 Block 30 modernization effort will support new aircraft capabilities established in OFPs for the SCU8 and SCU9. The effort will also migrate the F-16 Block 30 Mission Planning Environment (MPE) to the Windows 7 operating system and the current version of the MPS Framework. SCU8 system capabilities include the addition of Helmet Mounted Integrated Targeting (HMIT), Small Diameter Bomb (SDB), the AIM-120D missile variant and Center Display Unit (CDU) Integration. SCU9 capabilities include finishing HMIT and CDU integrations, support of Threat Symbology/Correlation (TS/C) file import (commonality with F-16 Block 40/50) and the addition of the Laser JDAM.

3) F-16 Block 40/50 Modernization Phases I&II: The F-16 Block 40/50 modernization efforts will provide the capability within the MPE to plan/utilize a number or OFP-driven capabilities in the platform. These capabilities include, but are not limited to, integrating the universal armament interface (UAI) with the most recent version of precision guided munitions planning software (PGMPS) to give the platform the ability to plan missions for any type of network enabled weapon (NEW). It will also provide for UAI compliance with the small diameter bomb (SDB; GBU-39) and the laser joint direct attack munition (LJDAM; GBU-54). The modernization effort will also provide for the use of the advanced identification friend or foe (AIFF) Mode 5 capability in the F-16 Blk 40/50. AIFF will allow use of enhanced authentication and verification of friendly signals, through the incorporation of cryptographically secured signals. It will also introduce Automatic Dependent Surveillance-Broadcast (ADS-B) technology and facilitate compliance with standards for the Next Generation Air Transportation System (NextGen). The development effort will also migrate the F-16 Block 40/50 MPE to the Windows 7 operating environment

4) F-22 Modernization Phase I: F-22 OFP-driven enhancements include, but are not limited to the addition of improved capabilities for the AIM-9X and AIM-120D, the incorporation of additional electronic protection tasks, the small diameter bomb target list manager, combat identification improvements, installation of the auto ground collision avoidance system, and incorporation of the synthetic aperture radar planning tool. Additionally, other new and emerging OFP-generated requirements will be addressed as identified by the operational user(s). Other common component updates will also be completed as required.

5) B-1 Modernization Phase I: The B-1 Modernization program includes OFP-driven software updates for Releases 7.0, 8.0, and 9.0. It will incrementally update the platform MPE and provide for integration with the Reliability and Maintainability Improvement Program (RMIP)/Inertial Navigation System Replacement (INSR), Laptop Computer Targeting Pod Phase 2 (LCTP), Integrated Battle Station elements (including Fully Integrated Data Link/Visual Situation Display Upgrade (VSDU)), Central Integrated Test System Upgrade (CITS), and related follow on enhancements. Additionally it will migrate the B-1 MPE to the Windows 7 operating system and convert the B-1 Unit Planning Component (UPC) Visual Basic (VB) code to C# .NET.

6) A-10 Modernization Phase I: The A-10 effort will continue to support aircraft OFP-driven capability enhancement for Suite 7B and Suite 8. Suite 7B capabilities include, but are not limited to, JPEG 2000 Maps, Situational Awareness Data Link (SADL) Crypto Upgrade, Electronic Warfare Threat Table Correlation, pre-planning combat search and rescue parameters and helmet mounted cueing system updates. Suite 8 capabilities include, but are not limited to, the addition of Mode 5 IFF, Combat Survivor Evader Locator (CSEL), Laser JDAM (Joint Direct Attack Munition), AGM-65L (Laser Code Entry), advanced targeting pod mission planning settings, and combat search and rescue post mission enhancements. The modernization effort will also migrate the A-10 Mission Planning Environment (MPE) to the Windows 7 operating system and the current version of the MPS framework.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

b. MAF MPE Modernization: This effort modifies the common MAF MPE developed and deployed during previous mission planning increments. The modernization activities will provide new and improved mission planning capabilities for the MAF fleet as required to meet evolving OFP, fuel efficiency, and global planning netcentric requirements such as avionics upgrades, communication systems, interfaces with command and control systems, new parachute types, etc. for various MAF platforms. The MPE updates under the MAF Modernization effort include but are not limited to those for Air Mobility Command--C-5, C-17, C-130s (multiple variants), KC-10, KC-46, and KC-135 and Special Mission Air Combat Command--E-3, E-8, E-4, EC-130H, and RC-135. MAF modernization will also address required improvements to and integration of MAF related MPE CCs, including the Communications, Navigation Surveillance/Air Traffic Management (CNS/ATM) CC, Aeronautical Advisory and Notices to Airmen Tool (AANT), and Air Refueling Tool (ART) CC, etc. This effort also provides the capability to use the new Digital Aeronautical Information File (DAFIF) web services-based data structure being produced by NGA in this timeframe.

1) Special Missions ACC (SMACC) Modernization Phase I and Phase II: The SMACC Modernization Program includes development, testing, and fielding of MP software for the E-3/E-8, RC-135 and EC-130. The E-3/E-8 v3.0 development effort will provide a Windows 7 capability while maintaining SDC compliance. It will also deliver software that is compatible with the E-3 DRAGON avionics upgrade including CNS ATM Certification. The RC-135 and EC-130H efforts will update their respective mission planning environments to include the latest Framework and SDC version.

2) Special Missions ACC (SMACC) Combat Search and Rescue (CSAR): The SMACC CSAR program is a continuation of the SMACC Modernization program. SMACC CSAR will transition the PFPS-based HH-60 and HC-130 CSAR mission planning functionality, tools, and plugins to Joint Mission Planning Systems (JMPS) environment.

3) MAF MPS Modernization (AMC Transition): This effort modifies the common MAF MPE developed and deployed during previous mission planning increments. It will provide new and improved mission planning capabilities for the MAF fleet (e.g. C-5, C-130, KC-10, etc.) as required to meet OFP, fuel efficiency, and global planning net-centric requirements. It includes enhanced capabilities to accommodate avionics upgrades, improved communications systems, interfaces with command and control systems, new parachutes, etc. for various MAF platforms. Development efforts also include integrating improvements to MAF related Common Components (CCs). Examples of these CCs include the Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) CC, Consolidated Airdrop Tool (CAT), Aeronautical Advisory and Notices to Airmen Tool (AANT), and Air Refueling Tool (ART). This effort also provides the capability to use the new Digital Aeronautical Information File (DAFIF) services-based data structure being produced by NGA.

c. Mobility Air Force Automated Flight Planning Service (MAFPS): This effort includes development of a centralized/net-centric global mobility flight planning capability, which will provide significant fuel savings through automated flight route, airspeed, and altitude optimization utilizing aircraft performance, air traffic management, weather, and other data.

d. Test, Training and Certification: Continues all MPS-related integration, test, and certification activities for all CAF and MAF platforms.

e. Program Support: Continues all program office management operations and support activities to ensure the timely development, testing, and delivery of mission planning systems to the warfighter.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

FY15 funding will continue the development and modernization of the Mission Planning Environments (MPEs) and related planning capabilities for a variety of Air Force aircraft and weapons platforms for the CAF, MAF, and other operational users. The modernization programs will be closely aligned and compatible with the capabilities being developed for the platforms within their respective and regularly scheduled Operational Flight Programs (OFPs).

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: F-15 Modernization Phase II	11.484	7.703	11.091
Description: Continues the modernization of previously fielded F-15 MPEs to enable efficient use of new and improved capabilities being developed in the OFPs. ***FY 2013 Accomplishments:*** Continued development of v3.2 and v4.0, which include B61-LEP and additional OFP requirements. ***FY 2014 Plans:*** Complete development and testing (DT/OT) of SDB II improvements. Continue development of radar and other weapon updates (e.g. B61 LEP, key data loading). Initiate development of OFP-driven updates for F-15 Suite 9. ***FY 2015 Plans:*** Will continue development of v4.0 and v5.0, which include B61-LEP and additional Suite 9 OFP requirements.			
Title: F-16 Block 30 Modernization Phase I	5.547	3.282	1.613
Description: Continues the modernization of previously fielded F-16 Block 30 MPEs to enable efficient use of new and improved capabilities being developed in the OFPs. ***FY 2013 Accomplishments:*** Fielded SCU8. Continued software development and testing to migrate F-16 SCU8 to Windows 7 operating environment. Initiated development of F-16 SCU9 updates to incorporate Laser JDAM, threat symbology/correlation, and other capabilities. ***FY 2014 Plans:*** Continue development and testing of F-16 SCU9 updates (e.g. Laser JDAM, threat symbology/correlation). ***FY 2015 Plans:*** Will complete development and testing of F-16 SCU9 updates (e.g. Laser JDAM, threat symbology/correlation). Will initiate requirements definitization/planning and initial design activities for F-16 SCU10 updates.			
Title: F-16 Block 40/50 Modernization Phases I&II	6.940	5.868	4.698

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Description: Continues the modernization of previously fielded F-16 Block 40/50 MPEs to enable efficient use of new and improved capabilities being developed in the OFPs. ***FY 2013 Accomplishments:*** Phase I: M6.1+ was re-fielded via a Component Replacement Evaluation (CRE), updates included new versions of EWCC and Miniature Air Launched Decoy (MALD), and the addition of OBMT and newer ACC H/W support. Continued development of M6.5/ M6.5+, which implements UAI Mission Planning 1 (MP1) completion, Weapons Data Link, and Common Weapons Employment Zone (CWEZ) updates. Phase II: M7.1+ continued development throughout FY13 and will include Mission Plannable Declutter, Pattern Management for UAI, and CWEZ. ***FY 2014 Plans:*** Will continue development of Phase I M6.5/M6.5+, the M6.5 (EPAF) version will enter FQT in Q3 and enter DT in Q4. Phase II: M7.1+ will continue development throughout FY14. Capabilities include, but are not limited to, UAI MP2 completion, Weapons Data Link, and Common Weapons Employment Zone updates. ***FY 2015 Plans:*** Phase II: Initiate M7.1+ Functional Qualification Test (FQT) in Q4.			
Title: F-22 Modernization Phase I ***Description:*** Continues the modernization of previously fielded F-22 MPEs to enable efficient use of new and improved capabilities being developed in the OFPs. ***FY 2013 Accomplishments:*** Initiated MPE integration and transitioned to Framework 1.5.2.x. Conducted Preliminary Design Reviews, Critical Design Reviews, and developer evaluations in support of v13.0 development and user enhancements to tools, Framework, and common component updates. Tested and delivered v12.0. Implemented correction of v12.0 deficiencies identified during Government testing. ***FY 2014 Plans:*** Continue development of v13.0. Capabilities for v13.0 include, but are not limited to, addition of AIM-9X and AIM-120D, incorporation of additional Electronic Protection Tasks, Combat Identification improvements, and the Synthetic Aperture Radar Planning Tool. ***FY 2015 Plans:***	7.019	7.104	7.043

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Will complete development of v13.0 for 2nd FQT in FY16. Capabilities for v13.0 include, but are not limited to, addition of AIM-9X and AIM-120D, incorporation of additional Electronic Protection Tasks, Combat Identification improvements, and the Synthetic Aperture Radar Planning Tool. The Phase II v14.0 MPE will be built from the v13.1 baseline and will integrate with requirements established through OFP Inc 3.2M(Mandates). These new Inc 3.2M capabilities are planned to include the Mark XIIA System with Joint Requirements Oversight Council (JROC) mandated Mode 5/S Identification Friend or Foe (IFF) as well as the Communication Navigation Surveillance (CNS) / Air Traffic Management (ATM) upgrade designated as Tactical Mandates (TACMAN) and Link 16 transmit capabilities. Efforts in FY15 will focus on requirements definition interfacing with the aircraft program and culminate in the MPE SRR.			
Title: A-10 Modernization Phase I ***Description:*** Continues the modernization of previously fielded A-10 MPEs to enable efficient use of new and improved capabilities developed in the OFPs. ***FY 2013 Accomplishments:*** Completed development and fielding of A-10 Suite 7B update (migrated MPE to Win7 operating environment). Continued A-10 Suite 8 development (capabilities include, but are not limited to, Mode 5 IFF, CSEL (Combat Survivor Evader Locator), Laser JDAM (Joint Direct Attack Munition), AGM-65L (Laser Code Entry), Advanced Targeting Pod Mission Planning Settings, and CSAR Post Mission Enhancements). ***FY 2014 Plans:*** Complete A-10 Suite 8 DT/OT and field capability. Initiate design reviews for A-10 suite 9. ***FY 2015 Plans:*** No FY15 funds requested.	1.774	0.794	-
Title: B-1 Modernization Phase I ***Description:*** Continues the modernization of previously fielded B-1 MPEs to enable efficient use of new and improved capabilities being developed in the OFPs. ***FY 2013 Accomplishments:*** Conducted development and test activities of Framework 1.5.300 to support MAF MPS modernization requirements. Ensured legacy capabilities for various tools are supported in the JMPS program. Such tools include, but are not limited to, the Drop	9.858	6.349	5.575

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Zone/Landing Zone (DZLZ) database manager and Enterprise Administration and Synchronization Environment Enterprise Administration and Synchronization Environment (EASE). ***FY 2014 Plans:*** Field Rel 7.0.8 for SB-15 and field Rel 7.0.10 for SB-16. ***FY 2015 Plans:*** Conduct Full Qualification Testing (FQT) for Rel 8.0 (which will update de-clutter configuration tool and defensive threat rings) and complete DT/OT to support SB-16A requirements. Field Rel 8.0 in Q4.			
Title: MAF MPS Modernization (AMC Transition) ***Description:*** Efforts include the start and continuation of activities for the modernization of the MAF MPE to include C-5, C-17, C-130s, KC-10, KC-135, and KC-46 platforms. ***FY 2013 Accomplishments:*** Conducted development and test activities of Framework 1.5.300 to support MAF MPS modernization requirements. Ensured legacy capabilities for various tools are supported in the JMPS program. Such tools include, but are not limited to, the Drop Zone/ Landing Zone (DZLZ) database manager and Enterprise Administration and Synchronization Environment (EASE). ***FY 2014 Plans:*** Initiate development and integration of Global Mobility JMPS UPC/MPE releases. Initiate development, integration, and test of the Air Refueling Tool CC. Continue development, integration, and test of the MAF Tools (DZ/LZ database manager, EASE, etc). Continue development and test activities of Framework 1.5.300 to support MAF MPS modernization requirements. ***FY 2015 Plans:*** Will deliver C5 and AOC interface JMPS UPC/MPE. Will also continue development and integration of Global Mobility tankers and Airdrop JMPS UPC/MPE releases. Will continue development, integration, and test of the Air Refueling Tool CC. Will continue development, integration, and test of the MAF Tools. Will continue development and test activities of Framework 1.5.300 to support MAF MPS modernization requirements. Initiate development and integration of Global Mobility JMPS UPC/MPE Phase II releases.	4.562	16.183	11.485
Title: Special Missions ACC Modernization Phase I ***Description:*** Continues the modernization of previously fielded mission planning software environments for the E-3, E-8, E-4, EC-130, and RC-135. ***FY 2013 Accomplishments:***	10.144	6.405	6.215

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Continued development of software for E-3/E-8, RC-135, and EC-130H to ensure SDC currency and upgrade capabilities based on aircraft platform OFP requirements. These include the Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) CC, cockpit upgrades, communication presets, mission/navigation database format changes, and FPM/TOLD updates. ***FY 2014 Plans:*** Continue development of software for E-3/E-8, RC-135, and EC-130H to ensure SDC currency and to upgrade capabilities based on aircraft platform OFP requirements. These include the Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) CC, cockpit upgrades, communication presets, mission/navigation database format changes, and FPM/TOLD updates. These software updates will include compatibility with potential aircraft avionics upgrades and maintain SDC and Windows compliance. Initiate software development activities for SMACC CSAR Tools effort. ***FY 2015 Plans:*** Will continue development of mission planning software to incorporate new platform capabilities into a variety of MAF platforms (e.g. E-3/E-8, RC-135, and EC-130H). New capabilities include cockpit upgrades, communications, mission/navigation database format changes, and FPM/TOLD updates. Will also include initial development efforts to migrate the MPEs to the most current Windows operating system as well as maintaining SDC compliance. Initiate software development activities for SMACC CSAR HH-60 and HC-130 efforts.			
Title: MAF Automated Flight Planning Service (MAFPS) ***Description:*** Develops a centralized/net-centric global mobility flight planning capability, which will provide significant fuel savings through automated flight route, airspeed, and altitude optimization utilizing aircraft performance, air traffic management, weather, and other data. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Release 1 software development. Will conduct Preliminary Design Review and two (2) Interim Design Reviews. Will complete two (2) of four (4) Engineering Releases. ***FY 2015 Plans:*** Will complete Release 1 software development. Contractor will deliver final two (2) Engineering Releases and complete Final Qualification Test. Government will conduct Developmental Test. Contractor will begin Release 2 software development.	-	4.785	5.987

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Contractor will begin Release 2 software development, to include a System Requirements Review and Integrated Baseline Review.			
Accomplishments/Planned Programs Subtotals	57.328	58.473	53.707

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA07: Line Item # 833170: *Mission Planning Systems*	6.235	5.190	7.249	-	7.249	9.129	9.358	9.240	9.405	Continuing	Continuing

Remarks

D. Acquisition Strategy

Mission Planning Systems (MPS) Modernization utilizes an evolutionary acquisition approach to develop and deliver an interoperable, network-centric, mission planning system tailored for numerous Air Force platforms using competition and multiple contract vehicles.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Planning Software Development (MPEC II)	C/Various	Various : Various,	0.000	21.375	Nov 2012	21.744	Nov 2013	25.493	Nov 2014	-		25.493	Continuing	Continuing	TBD
F-16 Modernization	PO	Organic : Hill AFB, UT	0.000	6.769	Nov 2012	4.108	Nov 2013	0.807	Nov 2014	-		0.807	Continuing	Continuing	-
A-10 Modernization	PO	Organic : Hill AFB, UT	0.000	1.042	Nov 2012	0.380	Nov 2013	-		-		-	Continuing	Continuing	TBD
EC-130H Modernization	PO	Organic : Robins AFB, GA	0.000	1.290	Nov 2012	1.470	Nov 2013	0.465	Nov 2014	-		0.465	Continuing	Continuing	TBD
Systems Engineering and Integration	C/CPAF	SAIC : McLean, VA	0.000	5.593	Nov 2012	7.784	Nov 2013	6.862	Nov 2014	-		6.862	Continuing	Continuing	TBD
Framework	C/FPIF	Northrop Grumman : Herndon, VA	0.000	5.474	Nov 2012	1.603	Nov 2013	-		-		-	Continuing	Continuing	TBD
Common Components	C/Various	Various : Various,	0.000	5.444	Nov 2012	8.781	Nov 2013	6.760	Nov 2014	-		6.760	Continuing	Continuing	TBD
		Subtotal	0.000	46.987		45.870		40.387		-		40.387	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Engineering	C/T&M	SEI : Pittsburgh, PA	0.000	0.130	Nov 2012	0.147	Nov 2013	0.149	Nov 2014	-		0.149	Continuing	Continuing	TBD
Cost Estimating	C/T&M	Tecolote Inc : Bedford, MA	0.000	0.264	Nov 2012	0.300	Nov 2013	0.314	Nov 2014	-		0.314	Continuing	Continuing	TBD
		Subtotal	0.000	0.394		0.447		0.463		-		0.463	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Responsible Test Organization (RTO)	PO	46TW : Eglin AFB, FL	0.000	2.329	Nov 2012	2.856	Nov 2013	3.474	Nov 2014	-		3.474	-	8.659	TBD

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Certification and Accreditation	MIPR	JITC : Indian Head, MD	0.000	0.088	Jan 2013	0.109	Jan 2014	0.110	Jan 2015	-		0.110	-	0.307	TBD
Type I Training	C/FP	Ogden Air Logistics Center : Hill AFB, UT	0.000	1.230	Nov 2012	1.509	Nov 2013	2.816	Nov 2014	-		2.816	-	5.555	TBD
Field Representative Hardware	C/Various	Various : Various,	0.000	0.747	Nov 2012	0.916	Nov 2013	0.167	Nov 2014	-		0.167	-	1.830	TBD
		Subtotal	0.000	4.394		5.390		6.567		-		6.567	-	16.351	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Technical Support	RO	MITRE Corp : Bedford, MA	0.000	2.662	Oct 2012	3.017	Oct 2013	3.089	Oct 2014	-		3.089	Continuing	Continuing	TBD
Program Management Administration	Various	Various : Various,	0.000	2.891	Nov 2012	3.749	Nov 2013	3.201	Nov 2014	-		3.201	Continuing	Continuing	TBD
		Subtotal	0.000	5.553		6.766		6.290		-		6.290	-	-	-

	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	57.328		58.473		53.707		-		53.707	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

Mission Planning Systems (MPS) Modernization Project 675380 (page 1 of 2)

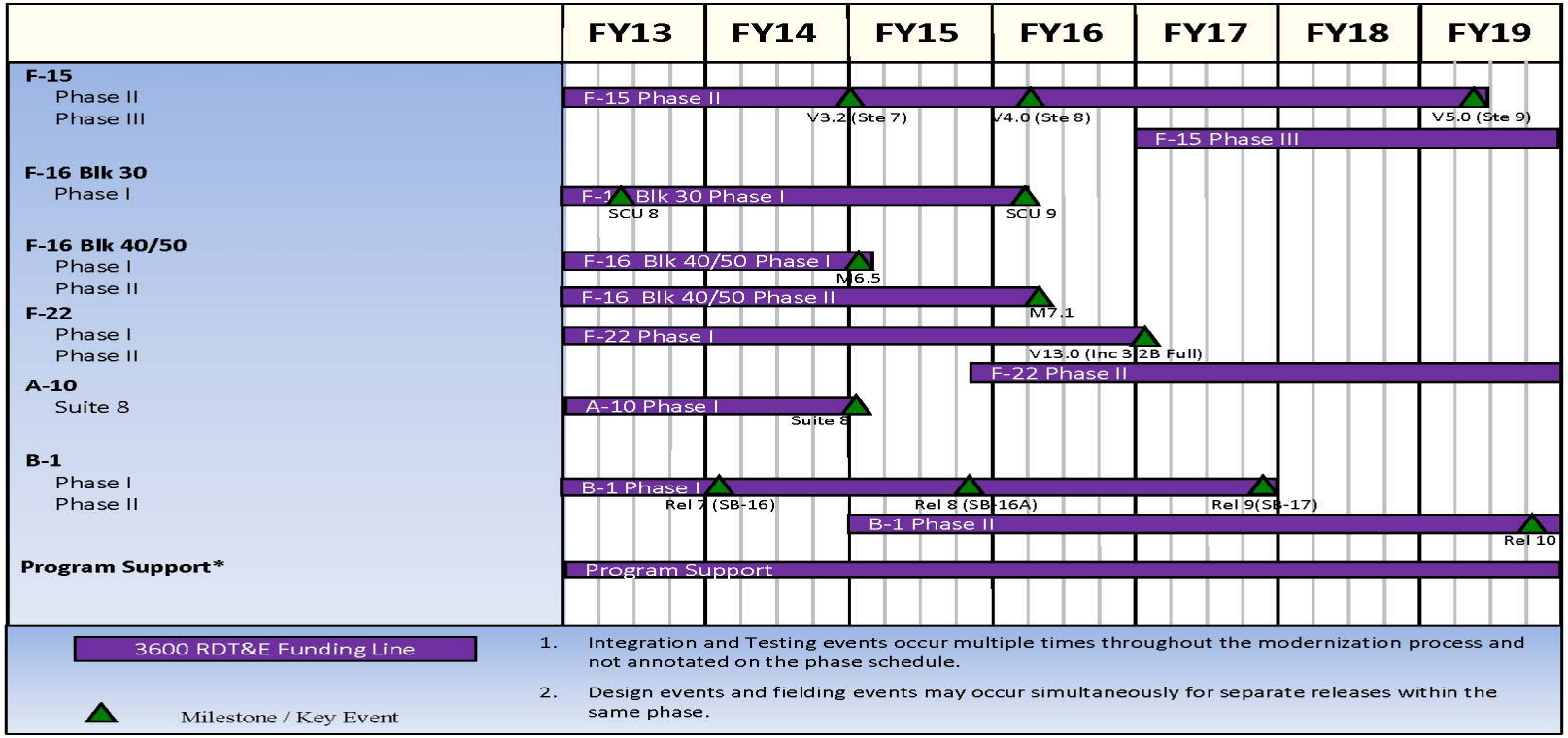


Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

Mission Planning Systems (MPS) Modernization Project 675380 (page 2 of 2)

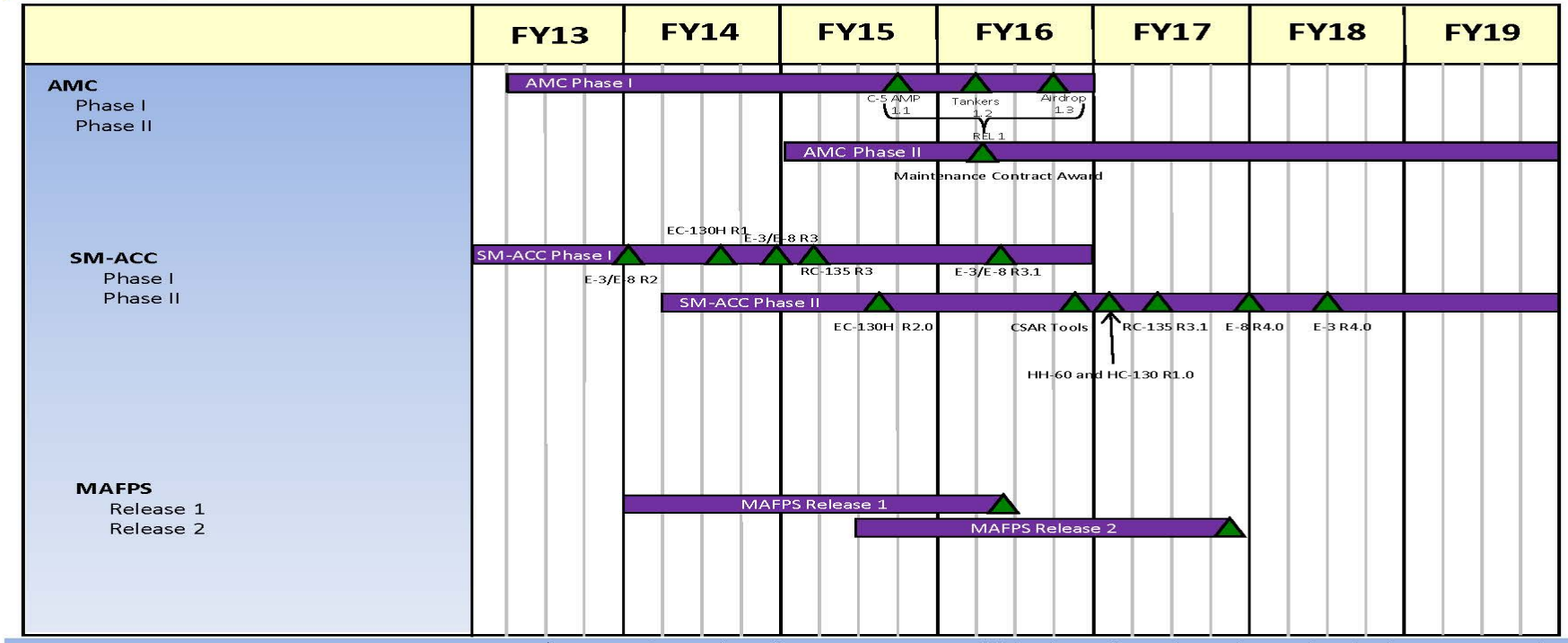


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
F-15 v3.2 Fielding	1	2015	1	2015
F-15 v4.0 Fielding	2	2016	2	2016
F-15 v5.0 Fielding	2	2019	2	2019
F-16 Blk 30 SCU 8 Fielding	2	2013	2	2013
F-16 Blk 30 SCU 9 Fielding	1	2016	1	2016
F-16 Blk 40/50 M6.5 Fielding	1	2015	1	2015
F-16 Blk 40/50 M7.1 Fielding	2	2016	2	2016
F-22 v13.0 Fielding	1	2017	1	2017
A-10 Suite 8 Fielding	1	2015	1	2015
B-1 Release 7 Fielding	1	2014	1	2014
B-1 Release 8 Fielding	4	2015	4	2015
B-1 Release 9 Fielding	4	2017	4	2017
B-1 Release 10 Fielding	4	2019	4	2019
AMC Modernization C-5 AMP Release 1 Fielding	3	2015	3	2015
AMC Modernization Tankers Release 1 Fielding	1	2016	1	2016
AMC Modernization Airdrop Release 1 Fielding	3	2016	3	2016
SMACC E-3 / E-8 Release 2 Fielding	1	2014	1	2014
SMACC EC-130H Release 1 Fielding	3	2014	3	2014
SMACC E-3 / E-8 Release 3 Fielding	4	2014	4	2014
SMACC RC-135 Release 3 Fielding	1	2015	1	2015
SMACC E-3 / E-8 Release 3.1 Fielding	2	2016	2	2016
SMACC EC-130H Release 2	3	2015	3	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208006F / *Mission Planning Systems*	**Project (Number/Name)** 675380 / *Mission Planning Systems (MPS) Modernization*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SMACC CSAR Tools CC Release 1 Fielding	4	2016	4	2016
SMACC HH-60 Release 1 Fielding	1	2017	1	2017
SMACC CSAR Tools CC Release 1 Fielding (1)	4	2016	4	2016
SMACC E-8 Release 4.0 Fielding	1	2018	1	2018
SMACC E-3 Release 4.0 Fielding	3	2018	3	2018
MAFPS Release 1 Fielding	2	2016	2	2016
MAFPS Release 2 Fielding	4	2017	4	2017
Program Support	1	2013	4	2019

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0208021F / *Information Warfare Support*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	6.373	-	-	-	-	0.259	0.265	0.271	0.277	Continuing	Continuing
670374: *TECH and SPT*	-	6.373	-	-	-	-	0.259	0.265	0.271	0.277	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY2014, 670374, Tech & Spt, efforts transferred to PE 0305221F, Network Centric Collaborative Targeting, 675197, NCCT Core Technology, in order to better support and align with the Suter Program System (SPS).

A. Mission Description and Budget Item Justification

This Program Element funds research and development of strategy, assessment, and information operations (IO) capabilities required in support of Air Operation Center (AOC) command and control processes and supported combatant commanders. Programs currently supported include the Information Warfare Planning Capability (IWPC) - the Joint Forces Air Component Commander's (JFACC) system of record for strategy, operational assessment and network mapping/network nodal analysis. IWPC is a full-spectrum, offensive and defensive, planning capability. IWPC is an AOC weapon system component which enables operators to develop courses of action for the JFACC, create Air Operations Directives (AODs) and Joint Air Operations Plans (JAOPs), and nominate IO "targets" for inclusion into the Master Air Attack Plan and the Joint Integrated Prioritized Target List (JIPTL). This project funds the development and upgrade, testing and evaluation, and installation and training of an evolving suite of interoperable planning and decision support capabilities comprised of software, hardware, and communications products. This project will identify and implement an open, scalable system architecture that will accommodate growth as the virtual world grows and cyber operations change. The project builds functional software modules that are designed to be interoperable with Command and Control (C2) systems such as the Theater Battle Management Core System (TBMCS), Joint Targeting Toolbox, and other AOC tools. This PE funds development and continued research to identify existing military and commercial efforts which can satisfy unfulfilled operational requirements for IO analysis, targeting, planning, and integration. Activities also include studies and analysis to support both current program planning and execution and future program planning.

Funding also supports the National Technical Nuclear Forensics (NTNF) program. The NTNF program provides the US Government's framework to identify the source of a nuclear detonation in US or allied territory. AF contributions to this effort, include, but are not limited to collection of airborne particulate material following an incident. Currently, collection would be accomplished via a WC-135 Constant Phoenix aircraft, which is a limited availability asset (only one primary aircraft in the fleet). The Defense Threat Reduction Agency (DTRA) is developing a harvester pod with the potential of being mounted on an aircraft that will provide additional capacity to conduct this mission. Funding will provide integration and testing of that pod.

No FY15 funding is requested for these efforts.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208021F / *Information Warfare Support*

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	7.159	-	-	-	-
Current President's Budget	6.373	-	-	-	-
Total Adjustments	-0.786	-	-	-	-
• Congressional General Reductions	-0.009	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.188	-			
• Other Adjustments	-0.589	-	-	-	-

Change Summary Explanation

FY13 reduced $.589M due to Sequestration

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: IWPC	1.966	-	-
Description: Information Warfare Planning Capability (IWPC) Installation/Training/Upgrades ***FY 2013 Accomplishments:*** Funding continued the development of the network nodal analysis component of the IWPC program (specifically Project SUTER) to meet ongoing warfighter requirements.			
Title: NTNF	4.407	-	-
Description: Funding provides integration and testing of collection pod (harvester pod) on the C-130J and MQ-9 platforms. It also provides support for Concept of Operations (CONOPS) and Tactics, Techniques, and Procedures (TTP) development. ***FY 2013 Accomplishments:***			

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208021F / *Information Warfare Support*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY13 funding supported the NTNF program. The Defense Threat Reduction Agency (DTRA) completed development, integration, and testing of a pod (Harvester pod) capable of collecting airborne particulate material following a nuclear detonation. The pod was integrated and tested on C-130J and MQ-9 platforms.			
Accomplishments/Planned Programs Subtotals	6.373	-	-

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

Beginning in FY12, the majority of IWPC funding was used to support a new network mapping application to improve C4I nodal analysis and the integration of kinetic and non-kinetic capabilities. In FY14, IWPC program funds are being redirected to Big Safari (645 AESG) for continued support of this improved capability.

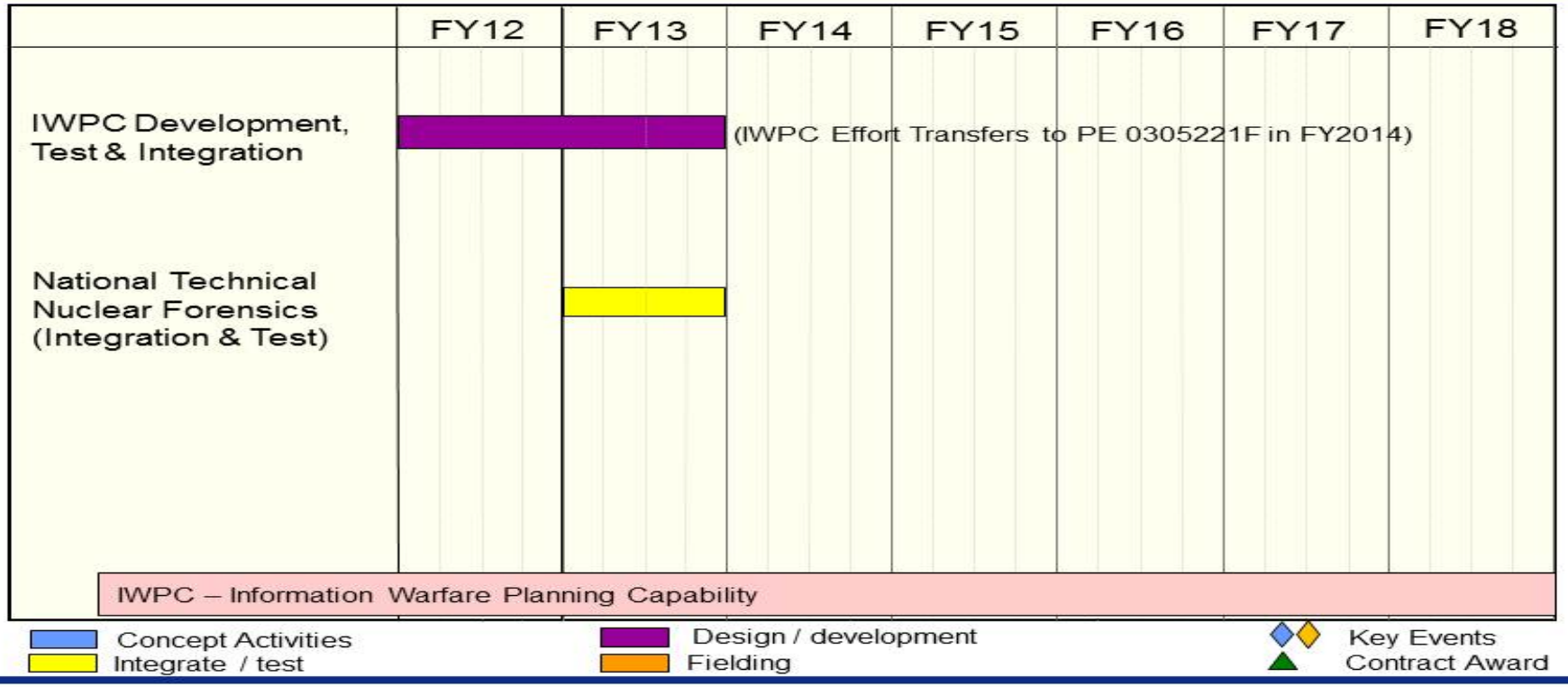
F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208021F / *Information Warfare Support*	**Project (Number/Name)** 670374 / *TECH and SPT*

U.S. AIR FORCE

IWPC Program Schedule



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0208059F / *CYBER COMMAND ACTIVITIES*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	59.342	38.099	67.057	-	67.057	73.790	71.702	73.105	74.496	Continuing	Continuing
676002: *Cyber Systems Modernization*	-	59.342	38.099	67.057	-	67.057	73.790	71.702	73.105	74.496	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

(U//FOUO) Mission: US Cyber Command (USCYBERCOM) Plans, coordinates, integrates, synchronizes, and conducts activities to: direct the operations and defense of specified Department of Defense information networks and; prepare to, and when directed, conduct full-spectrum military cyberspace operations in order to enable actions in all domains, ensure US/Allied freedom of action in cyberspace and deny the same to our adversaries.

USCYBERCOM will develop defensive cyber strategies and capabilities to ensure force flow during campaign operations and to expand DoD OCO capabilities. USCYBERCOM will research, develop, and test technologies and capabilities that allow Cyber forces to conduct future offensive and defensive cyber operations in support of COCOMs, to include title 10 infrastructures and cross-cutting technologies. USCYBERCOM will also provide the resources for other COCOMs to conduct Offensive Cyber Operations/Defensive Cyber Operations (OCO/DCO) planning. An in-house integration team (Special Projects Vulnerability Assessment Team) will perform research, small scale prototyping, and integration as required to support the mission. Further detail is classified and can be provided upon request. Additionaly, this team will re-tool existing offensive and defensive capabilities to satisfy immediate USCYBERCOM operational needs. Finally, USCYBERCOM will delegate resources to the Army, Navy, and Air Force Cyber Service componenents to develop deconflicted offensive cyber capabilites.

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

This program is in Budget Activity 7, Operational System Development because this budget activity funds various development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208059F / *CYBER COMMAND ACTIVITIES*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	66.888	68.099	67.893	-	67.893
Current President's Budget	59.342	38.099	67.057	-	67.057
Total Adjustments	-7.546	-30.000	-0.836	-	-0.836
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-30.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.940	-			
• Other Adjustments	-5.606	-	-0.836	-	-0.836

Change Summary Explanation

FY13: Decrease is due to sequestration.

FY14: Decrease due to Congressional mark for "forward funding".

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Combatant Command Support	25.014	19.831	23.562

Description: Funding supports development and testing of various tools critical to achieve COCOM military objectives. To include research, studies, integration, analysis, access development and operational assessment of cyberspace capabilities, methodologies and tactics in support of COCOM objectives.

FY 2013 Accomplishments:

(U//FOUO) Funding supported studies, analysis, testing and development of cyber operations capabilities and tools in support of Combatant Command objectives. Provided seed funding for cyber capabilities and tools, and expediting technology transition from the laboratory to operational use, in support of Combatant Command operational requirements. Funded development of a framework to underpin analytic and targeting efforts, and advanced reverse engineering efforts. Additionally, funding supported development of a common suite of tools for the S&TI centers and service cyber elements to perform cyber analysis in support of Combatant Command military objectives.

FY 2014 Plans:

Supports studies, analysis, testing and development of cyber operations capabilities and tools in support of Combatant Command military objectives. Supports advanced reverse engineering efforts, development of Electronic Warfare and cyberspace targeting efforts, a framework to underpin analytic and targeting efforts and seed funding for cyber capabilities and tools in

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208059F / *CYBER COMMAND ACTIVITIES*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
support of cyber operations requirements. ***FY 2015 Plans:*** (U//FOUO) Supports studies, analysis, testing and development of cyber operations capabilities and tools in support of Combatant Command military objectives. Supports advanced reverse engineering efforts, development of EW and cyberspace targeting efforts, a framework to underpin analytic and targeting efforts and seed funding for cyber capabilities and tools in support of cyber operations requirements.			
Title: Defend the Nation ***Description:*** Supports the development of a diverse cyber capability portfolio to enable SEE, BLOCK, and MANEUVER efforts in order to defeat a wide variety of cyber attacks. Efforts include research, integration, analysis, access development, training, testing, and assessments for offensive, defensive, and situational awareness capabilities. ***FY 2013 Accomplishments:*** Supported development, prototyping and testing of various cyber capabilities and tools, and cyber operations infrastructure technologies allowing USCYBERCOM to rapidly respond to any significant cyber activities and determine if there is a possible cyber attack on the DODIN, critical infrastructure, and or other national assets or interests. Funding also supported research supporting secure technology to protect critical infrastructure, certification of the Cyber Mission Forces, cyber target development, and technical and subject matter expertise, system engineering and technical assurance support. ***FY 2014 Plans:*** Supports development, prototyping, and testing of tools for Defend the Nation cyber operations. Supports advanced, transition and technology assessment of a joint cyber operations infrastructure technologies, research supporting secure technology to protect critical infrastructure, development of the process and sustainment structure for Cyber Mission Force teams, and technical and subject matter expertise for systems engineering and technical assurance. ***FY 2015 Plans:*** Support development, prototyping, and testing of tools to support Defend the Nation requirements and cyber operations. Funding supports technology research for critical infrastructure protection, and advanced development, transition and technology assessment of a joint cyber operations infrastructure. Additionally, funding will provide technical and subject matter expertise for systems engineering and technical assurance, cyber capability strategy, guidance and requirements.	18.338	8.714	23.369
Title: Operate and Defend the DoDIN and CYBER Situational Awareness ***Description:*** Funding supports engineering and development of tools, data strategy, and management of a common operating picture support operations focused on cyber key terrain at the global and national level and for cyber situational awareness for the services and COCOMs to support operations focused on cyber key terrain at the global and national level.	15.990	9.554	20.126

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208059F / *CYBER COMMAND ACTIVITIES*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: Supported tool development, engineering, data strategy, and management of a common operating picture that aided USCYBERCOM in planning coordinating, integrating, synchronizing and conducting operations in defense of specified Department of Defense information networks. Funding supports engineering, data strategy management and SME support to the Evaluation of Alternatives (EOA) for the Cyber Situational Awareness ***FY 2014 Plans:*** Supports cyber operations tools development, engineering, data strategy, and development of a common operating picture to support USCYBERCOM in planning, coordinating, integrating, synchronizing and conducting operations in defense of specified Department of Defense information networks. Funding supports tool development for Joint Cyber Centers with an event detection capability and engineering support to ensure smooth integration and development. Funding supports efforts to solve operational limitations, vulnerabilities and requirements. ***FY 2015 Plans:*** Will continue to support cyber operations tools development, engineering, data strategy, and development of a common operating picture that enables USCYBERCOM to conduct operations in defense of specified Department of Defense information networks. Funding supports tool development for Joint Cyber Centers with an event detection capability and engineering support to ensure smooth integration and development. Funding supports efforts to solve operational limitations, vulnerabilities and requirements.			
Accomplishments/Planned Programs Subtotals	59.342	38.099	67.057

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

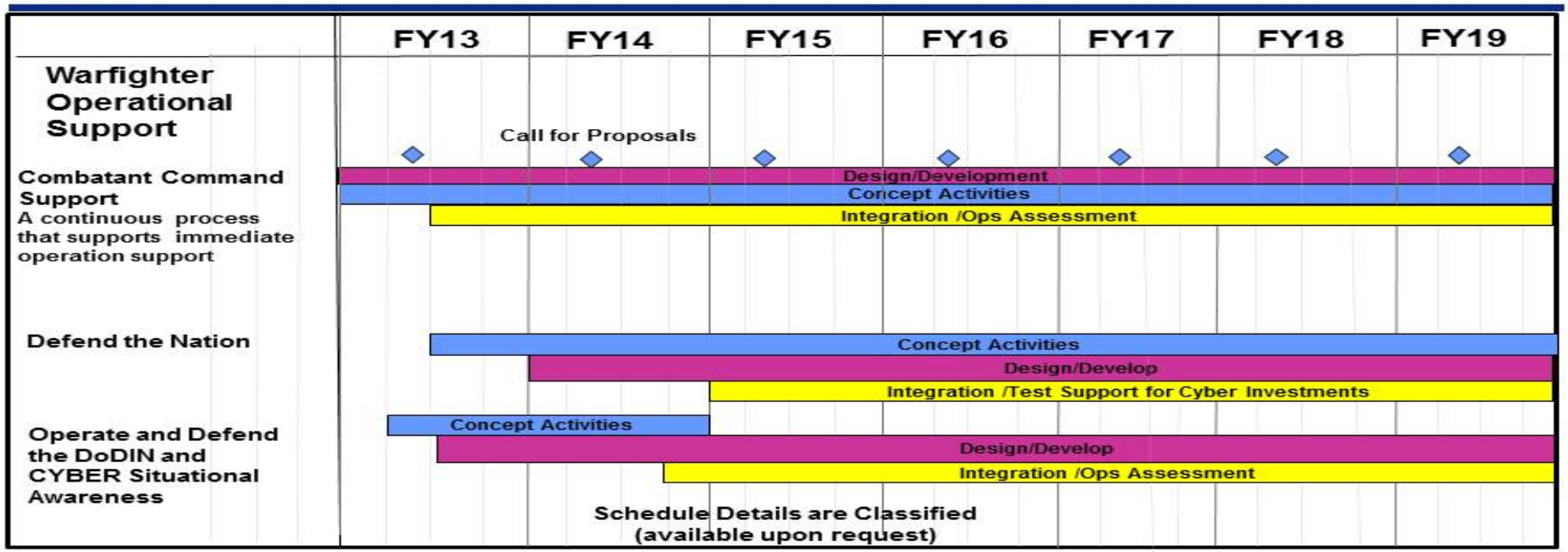
(U) Contracts will be awarded under full and open competition whenever possible. Variations of both Fixed Price (FP) and Cost Plus (CP) contracting vehicles will be used and managed by various Service Components

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208059F / *CYBER COMMAND ACTIVITIES*	**Project (Number/Name)** 676002 / *Cyber Systems Modernization*

US Cyber Command Development & Operations Schedule



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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force											Date: March 2014	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0208087F / *AF Offensive Cyberspace Operations*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	-	-	14.047	13.355	-	13.355	13.959	23.766	25.744	26.722	Continuing	Continuing
670375: *Network Warfare Systems and Support*	-	-	14.047	13.355	-	13.355	13.959	23.766	25.744	26.722	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

A. Mission Description and Budget Item Justification

The AF Offensive Cyberspace Operations program, rapidly develops operations-ready cyberspace superiority capabilities from laboratory, industry, and academia via studies, rapid prototyping, technology demonstrations, and other Research, Development, Testing, and Evaluation (RDT&E) efforts. This program consists of a portfolio of small programs and projects called the Offensive Cyber Product Line (OCPL). The OCPL establishes a flexible and balanced approach to the rapid acquisition of cyber operational capabilities. OCPL effectiveness comes from consciously balancing funding into three capability areas required for effective operations: Platforms (includes Cyber Mission Platform(CMP)), access, and capabilities.

The program office provides advanced OCPL cyber warfare capabilities to the 24th Air Force in direct support of USCYBERCOM, AF major commands (MAJCOMs), unified commands, and national agencies. In accordance with AF Policy, the program office develops capabilities in the cyberspace superiority core areas. OCPL efforts also directly support the Joint Network Attack Initial Capabilities Document (ICD), the National Military Strategy for Cyberspace Operations (NMS-CO), the USCYBERCOM operational directives, and the latest AF Space Command (AFSPC) Offensive Cyberspace Operations System Flight Plan, and other formal requirements documents. Planned areas of study, prototyping, and technology demonstration will be used to provide warfighters access, platforms, Offensive Cyber Operations (OCO) production (e.g. test and budgets), infrastructure (e.g. mission planning, intelligence, Command and Control/Situational Awareness (C2SA)), and tools needed to attack enemy networks, telephony, Integrated Air Defense Systems (IADS), electronic warfare operations, and Command and Control systems. These advancements will be used to develop and deliver cutting-edge technologies to the warfighter. This capability area leverages cyber technology investments by the Defense Advanced Research Projects Agency (DARPA), the National Security Agency (NSA), Air Force Research Labs, and DOD national laboratories, and other sources. Many program activities are protected under AF Network Warfare Special Access Program(s).

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to mature systems to full operational capability or sustain fielded systems.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208087F / *AF Offensive Cyberspace Operations*

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	14.047	13.521	-	13.521
Current President's Budget	-	14.047	13.355	-	13.355
Total Adjustments	-	-	-0.166	-	-0.166
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.166	-	-0.166

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Platforms	-	6.250	5.793

Description: The platforms capability area includes Cyber Mission Platform (CMP) and provides the hardware/software host for offensive cyber operations, i.e., architecture that enables mission planning, generation, sycronization, de-confliction, execution, and assessment by integrating OCPL developed capabilities into a common framework. This capability area also facilitates key upgrades and modifications to the Network Attack System (NAS).

FY 2013 Accomplishments:
N/A

FY 2014 Plans:
Continues to develop platforms, including CMP via necessary upgrades, modifications, equipment modernation, market research, integration, and follow-on OCO platform(s), continuing work started in PE 0305887F. The CMP effort will standardize current and future cyberspace operations capabilities by designing and delivering a common user interface and reusable, modular components. This funding will also continue to provide the program office manpower required for oversight required to integrate numberous acquisition programs into the CMP architecture. Some of these activities are protected under AF Nework Warfare Special Access Programs.

FY 2015 Plans:
Will continue to develop platforms, including CMP, via necessary upgrades, modifications, equipment modernization, market research, integration, and follow-on OCO platform(s), continuing work started in PE 0305887F. The CMP effort will standardize current and future cyberspace operations capabilities by designing and delivering a common user interface and reusable, modular components. This funding will also continue to provide the program office manpower required for oversight required to integrate

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208087F / *AF Offensive Cyberspace Operations*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
numerous acquisition programs into the CMP architecture. Some of these activities are protected under AF Network Warfare Special Access Programs.			
Title: Access ***Description:*** Access capabilities provide operators with the means to enable offensive cyber operations. Specific details are classified and available upon request. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Continues to maintain the current access programs via necessary upgrades, modifications, equipment modernization, market research, integration, and follow-on access programs. This funding will also continue to provide the program office manpower required to develop or maintain offensive cyber access programs. Some of these activities are protected under AF Network Warfare Special Access Programs. ***FY 2015 Plans:*** Will continue to maintain the current access programs via necessary upgrades, modifications, equipment modernization, market research, integration, and follow-on access programs. This funding will also continue to provide the program office manpower required to develop or maintain offensive cyber access programs. Some of these activities are protected under AF Network Warfare Special Access Programs.	-	0.500	0.500
Title: Capabilities ***Description:*** The cyber capability area delivers desired effects to the target. Specific details are classified and available upon request. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Continues support of anticipated CENTCOM JUON(s), CYBERCOM JUON(s), Weapons System(s) modernization, and AFSPC UON(s) and Cyber Need Forms and will continue transition of Offensive Cyber Operations technologies to meet capability gaps required by major commands, unified commands, and capabilities documents. Some of these activities are protected under AF Network Warfare Special Access Program(s). ***FY 2015 Plans:***	-	6.297	6.091

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208087F / *AF Offensive Cyberspace Operations*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Will continue support of anticipated CENTCOM JUON(s), CYBERCOM JUON(s), Weapons System(s) modernization, and AFSPC UON(s) and Cyber Need Forms and will continue transition of Offensive Cyber Operations technologies to meet capability gaps required by major commands, unified commands, and capabilities documents. Some of these activities are protected under AF Network Warfare Special Access Program(s).			
Title: Test & Evaluation 46TS Det 2 ***Description:*** Test and Evaluation: 46th Test Squadron Det 2 provides both developmental testing of new tool development and a secure network environment for such testing. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Continues to provide the required developmental testing for new tool development prior to future fielding to the operational platform. This funding also provides for the secure network environment for such testing. ***FY 2015 Plans:*** Will continue to provide the required developmental testing for new tool development prior to future fielding to the operational platform. This funding also provides for the secure network environment for such testing.	-	1.000	0.971
Accomplishments/Planned Programs Subtotals	-	14.047	13.355

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPAF: BA03: 834320:: *Offensive Cyber Operations*	-	8.297	9.894	-	9.894	10.153	10.327	10.862	10.722	Continuing	Continuing
• OPAF: BA03: 834010: *Information and Cyber Workforce Training*	-	1.150	1.705	-	1.705	1.625	1.647	1.677	1.706	Continuing	Continuing

Remarks

E. Acquisition Strategy

The Offensive Cyberspace Operations program office will utilize Concept, Development, Risk Management, or Production and Deployment Plans as part of a phased approach to acquisition planning. All plans will contain sufficient information for the Milestone Decision Authority (MDA) to determine readiness to enter into the applicable phase of the acquisition process. Offensive Cyberspace Operations will utilize existing contractual vehicles such as Government-Wide Acquisition Contract (GWAC) vehicles (Alliant, Encore II, Solutions for Enterprise-Wide Procurement IV (SEWP IV), and General Services Administration (GSA) Federal Supply Schedules.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208087F / *AF Offensive Cyberspace Operations*

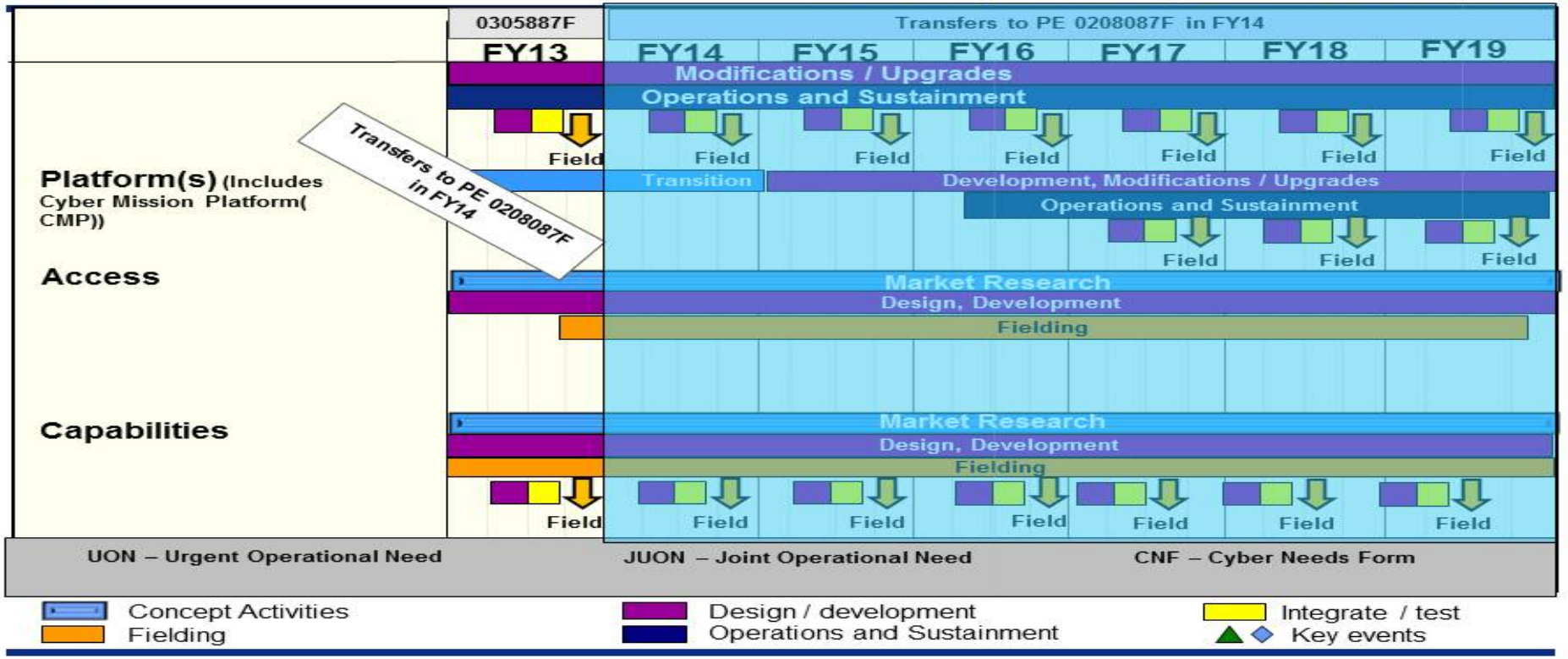
The use of multiple-award contractual vehicles will provide a wide range of commercially-available products and services that should be able to meet many requirements related to Offensive Cyberspace Operations. These multiple-award contractual vehicles have already met the statutory requirements of the Competition in Contracting Act (CICA) and require that Offensive Cyber Operations provide a fair opportunity to all contract holders, in accordance with Federal Acquisition Regulation (FAR) 16.505, unless an exception to fair opportunity applies.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208087F / *AF Offensive Cyberspace Operations*	**Project (Number/Name)** 670375 / *Network Warfare Systems and Support*

Offensive Cyber Production Line (OCPL): Schedule

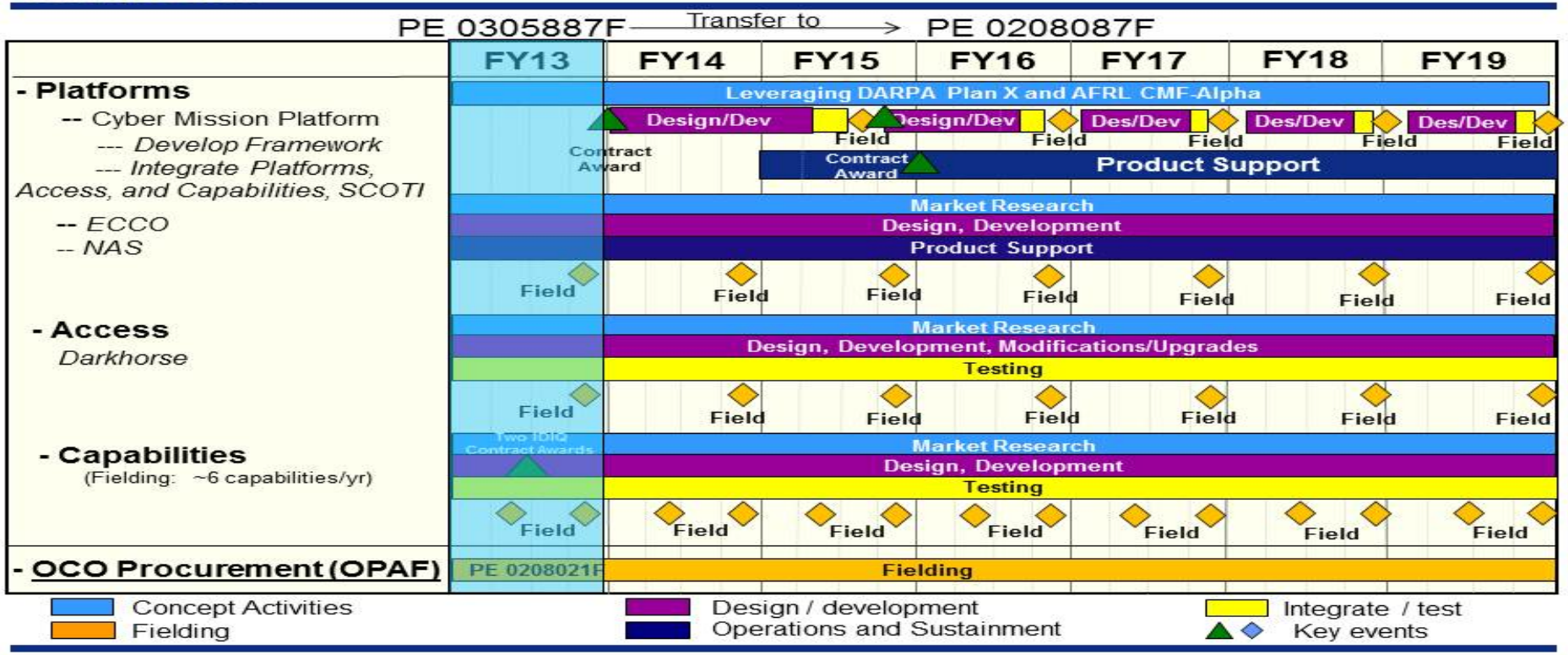


Current as of: Jan 2014

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208087F / *AF Offensive Cyberspace Operations*	**Project (Number/Name)** 670375 / *Network Warfare Systems and Support*

Offensive Cyber Operations Schedule

U.S. AIR FORCE



Further details are classified

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208088F / *AF Defensive Cyberspace Operations*

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	-	5.853	5.576	-	5.576	32.500	21.521	18.177	8.103	Continuing	Continuing
677820: *Computer Security RDTE: Firestarter*	-	-	5.853	5.576	-	5.576	6.110	6.227	6.350	6.471	Continuing	Continuing
ATZ000: *AFCERT*	-	-	-	-	-	-	25.137	14.012	10.514	0.289	Continuing	Continuing
BAF000: *Intrusion/Vulnerability Assessment*	-	-	-	-	-	-	1.253	1.282	1.313	1.343	Continuing	Continuing

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

The Firestarter program provides newly improved capabilities and technical transition opportunities for Cyber Defense and Information Assurance (IA) technologies and tools needed to defend Air Force Command, Control, Communications,Computer, and Intelligence (C4I) systems from Cyber-attacks, while ensuring recovery in the event of an attack. The emphasis of the program is directed toward defensive cyberspace capabilities; computer and network systems security; damage assessment and recovery; cyber threat recognition, attribution, and mitigation; and active response methodologies in response to evolving threats and changes to cyber environment. These areas of emphasis are realized through research and development, test and acquisition in the areas of: proactive defense, defensive counter cyberspace, cyberspace intelligence, surveillance and reconnaissance & situational awareness, persistent network operations, as well as decision support, recovery, and digital forensics. Current Air Force systems, such as the AFNET NIPRNet Gateways, SIPRNet Modernization program, and Host Based Security System leverage this technology to meet their information assurance and defensive cyberspace needs/requirements.

Firestarter utilizes cyber and IA technology investments by US Cyber Command, the Defense Advanced Research Projects Agency (DARPA), the National Security Agency (NSA), Director of National Intelligence (DNI), Intelligence Advanced Research Projects Activity (IARPA), and the Department of Homeland Security (DHS) to jump-start its development of solutions to existing Air Force cyber and IA requirements. This program supports AF Space Commands Cyberspace strategic direction in support of Cyber Defense which provides capabilities to 24th AF, as AF component to Cyber Command (CYBERCOM)), Defense Information Systems Agency (DISA), National Security Agency (NSA), and other services to ensure Global Information Grid (GIG) cyber and IA requirements are being met. Activities performed include those designed to identify, analyze, test, rapidly acquire, and integrate emerging IA and cyber technology and defensive cyberspace weapons systems and capabilities into all regions of the GIG - terrestrial, airborne, and space systems. . In addition, this effort will support implementation of DoD Enterprise-wide IA & CND (Computer Network Defense) Solutions Steering Group (ESSG) solutions.

AF Computer Emergency Response Team (AFCERT) supports the AF Cyberspace Defense (ACD) weapon system is designed to prevent, detect, and respond to adversarial penetration into AF unclassified and classified networks. It also provides forensic analysis if AF unclassified and classified networks are infiltrated by our adversaries. AFCERT funding for this effort will focus on development of capability, capacity, and potential modifications to increase the utility of the ACD weapon system to the warfighter

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force	Date: March 2014
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0208088F / *AF Defensive Cyberspace Operations*

Intrusion Vulnerability Assessment supports the Cyberspace Vulnerability Assessment / Hunter Team (CVA/H) weapon system and develops new capabilities to provide Air Force Cyber Command(AFCYBER) and Combatant Commanders additional mobile precision in addition to currently fielded protection capabilities to identify, pursue, and mitigate cyberspace threats. The CVA/H weapon system performs defensive sorties world-wide via remote or on-site access. CVA/H executes vulnerability, compliance, defense and non-technical assessments, best practice reviews, penetration testing and Hunter missions on AF and DoD networks & systems. Hunter operations characterize and then eliminate threats for the purpose of mission assurance. The Hunter mission focuses on the capability to find, fix, track, target, engage, and assess(F2T2EA) the advanced persistent threat (APT). This effort funds development efforts to expand the capability of the current weapon system to meet scope and scale of the USCYBERCOM directed Cyber Protection Teams.

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

These programs are in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	5.853	5.961	-	5.961
Current President's Budget	-	5.853	5.576	-	5.576
Total Adjustments	-	-	-0.385	-	-0.385
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.385	-	-0.385

Change Summary Explanation

In FY2014, 677820, AF Defensive Cyberspace Operations efforts were transferred from 0303140F, Information Systems Security Program, 677820, Firestarter, in order to consolidate Firestarter efforts into the Air Force Defensive Cyberspace Operations program.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208088F / *AF Defensive Cyberspace Operations*	Project (Number/Name) 677820 / *Computer Security RDTE: Firestarter*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
677820: *Computer Security RDTE: Firestarter*	-	-	5.853	5.576	-	5.576	6.110	6.227	6.350	6.471	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

In FY2014, 0208088F, 677820, AF Defensive Operations were transferred from 0303140F, Information Systems Security Program, 677820, Firestarter, in order to consolidate Firestarter efforts into the Air Force Defensive Cyberspace Operations program.

A. Mission Description and Budget Item Justification

This program is listed on the IML. The Firestarter program provides new/improved capabilities and technical transition opportunities for Cyber Defense and Information Assurance (IA) technologies and tools needed to defend Air Force Command, Control, Communications, Computer, and Intelligence (C4I) systems from Cyber-attacks, while ensuring recovery in the event of an attack. Also provides defensive Cyber Command and Control/Situational Awareness (C2/SA), which enables cyber commanders to monitor Air Force network status and execute courses of action to mitigate threats. The emphasis of the program is directed toward defensive cyberspace capabilities; computer and network systems security; damage assessment and recovery; cyber threat recognition, attribution, and mitigation; and active response methodologies in response to evolving threats and changes to cyber environment. These areas of emphasis are realized through research and development, test and acquisition in the areas of: proactive defense, defensive counter cyberspace, cyberspace intelligence, surveillance and reconnaissance & situational awareness, persistent network operations, as well as decision support, recovery, and digital forensics. Current Air Force systems, such as the Air Force Network Non-classified Internet Protocol Router (AFNET NIPRNet) Gateways, and Host Based Security System leverage this technology to meet their information assurance and defensive cyberspace needs/requirements.

This program utilizes cyber and IA technology investments by US Cyber Command, the Defense Advanced Research Projects Agency (DARPA), the National Security Agency (NSA), Director of National Intelligence (DNI), Intelligence Advanced Research Projects Activity (IARPA), and the Department of Homeland Security (DHS) to jump-start its development of solutions to existing Air Force cyber and IA requirements. This program supports AF Space Commands Cyberspace strategic direction in support of Cyber Defense which provides capabilities to 24th AF, as AF component to Cyber Command (CYBERCOM), Defense Information Systems Agency (DISA), National Security Agency (NSA), and other services to ensure Global Information Grid (GIG) cyber and IA requirements are being met. Activities performed include those designed to identify, analyze, test, rapidly acquire, and integrate emerging IA and cyber technology and defensive cyberspace weapons systems and capabilities into all regions of the GIG - terrestrial, airborne, and space systems. Activities include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development, because it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208088F / *AF Defensive Cyberspace Operations*	**Project (Number/Name)** 677820 / *Computer Security RDTE: Firestarter*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Cyber Forensic Tools & Methodologies	-	2.040	1.655
Description: Cyber forensic tools & methodologies. Includes: Initial metrics for reliable info assurance; secure coalition cyber data management, collaboration and visualization; analysis of cyber security bots. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Efforts continues the development of methods and technologies to enhance "real time" cyber network forensic analysis. ***FY 2015 Plans:*** Will continue the development of methods and technologies to enhance "real time" cyber network forensic analysis.			
Title: Cyber Threat Recognition	-	1.357	1.375
Description: Enhancing cyber platform technology to identify zero-day threats in real time. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Effort continues development of technologies to detect and attribute distributed computer network attacks over time and distance to specific adversaries. ***FY 2015 Plans:*** Will continue development of technologies to detect and attribute distributed computer network attacks over time and distance to specific adversaries.			
Title: Cyber Threat Attribution & Mitigation	-	1.462	1.482
Description: Cyber Threat Attribution and Mitigation. Includes: risk mitigation techniques for wireless networks and systems; active response, dynamic policy enforcement and computer/net attack attribution efforts. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208088F / *AF Defensive Cyberspace Operations*	**Project (Number/Name)** 677820 / *Computer Security RDTE: Firestarter*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Effort continues development of technologies to detect and attribute distributed computer network attacks, over time and distance, to specific adversaries. ***FY 2015 Plans:*** Will continue development of technologies to detect and attribute distributed computer network attacks, over time and distance, to specific adversaries.			
Title: Transition of Cyber and IA Technologies ***Description:*** Transition cyber defense technologies that support AFSPC's Defense architecture. Includes: space systems cyber solutions; terrestrial net defense technology development; airborne IP network cyber and IA tools; IA / cyber modeling & sim; secure interoperable distributed agent computing, and others that relate to defending the AF networks. ***FY 2013 Accomplishments:*** N/A ***FY 2014 Plans:*** Effort continues enhancing and transitioning customer funded cyber and IA technology to operational USAF components in accordance with rapid requirements documentation provided by AFSPC. ***FY 2015 Plans:*** Will continue enhancing and transitioning customer funded cyber and IA technology to operational USAF components in accordance with rapid requirements documentation provided by AFSPC.	-	0.994	1.064
Accomplishments/Planned Programs Subtotals	-	5.853	5.576

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

All major contracts within this project are awarded after full and open competition utilizing evolutionary capability and incremental development.

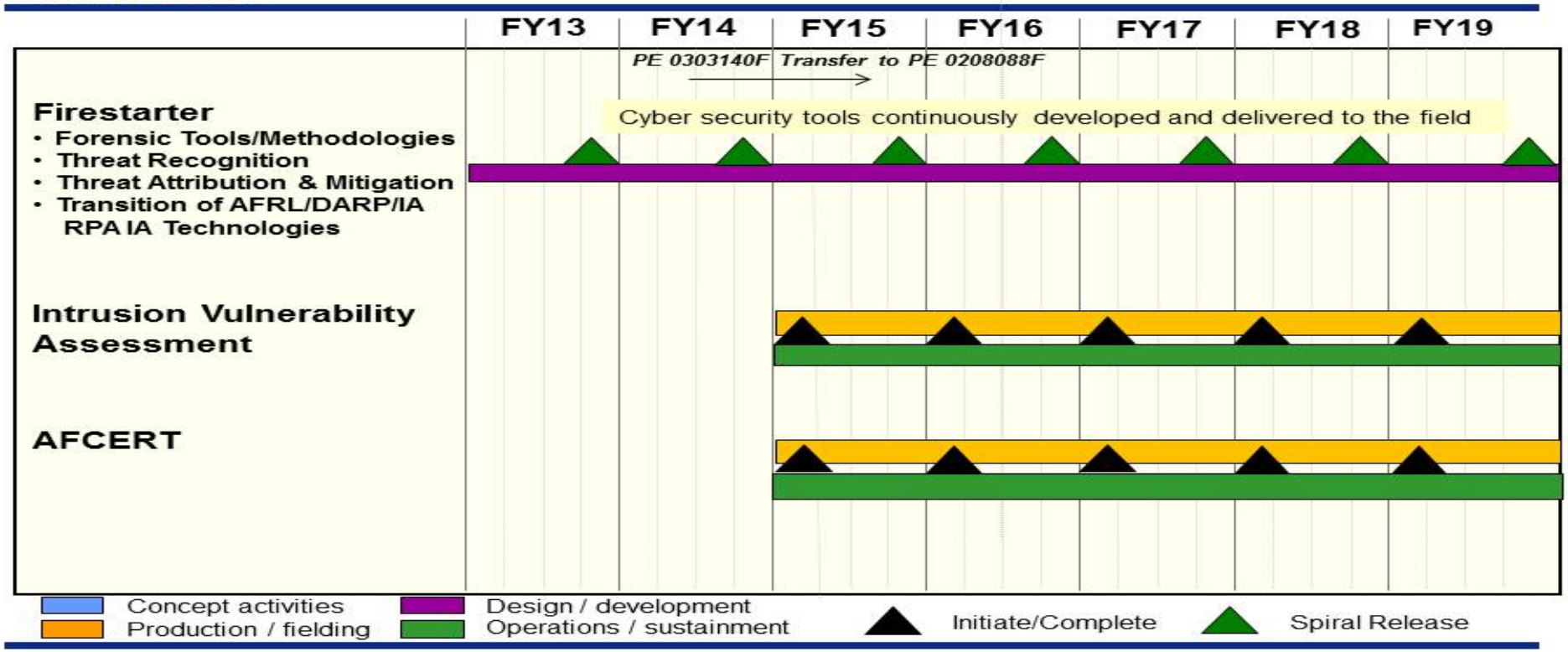
E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0208088F / *AF Defensive Cyberspace Operations*	**Project (Number/Name)** 677820 / *Computer Security RDTE: Firestarter*

U.S. AIR FORCE

AF Defensive Cyberspace Operations Schedule



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Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208088F / *AF Defensive Cyberspace Operations*	Project (Number/Name) ATZ000 / *AFCERT*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
ATZ000: *AFCERT*	-	-	-	-	-	-	25.137	14.012	10.514	0.289	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Mission Description not provided.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: No data provided	-	-	-
FY 2013 Accomplishments: No data provided			
Accomplishments/Planned Programs Subtotals	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208088F / *AF Defensive Cyberspace Operations*	Project (Number/Name) BAF000 / *Intrusion/Vulnerability Assessment*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
BAF000: *Intrusion/Vulnerability Assessment*	-	-	-	-	-	-	1.253	1.282	1.313	1.343	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Mission Description not provided.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: No data provided	-	-	-
FY 2013 Accomplishments: No data provided			
Accomplishments/Planned Programs Subtotals	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.