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**Department of Defense  
Fiscal Year (FY) 2016 President's Budget Submission**

February 2015



**Air Force**

*Justification Book Volume 3b of 3*

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

**Vol-III Part 2**

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Air Force • President's Budget Submission FY 2016 • RDT&E Program

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Department of Defense  
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 Total Obligational Authority  
 (Dollars in Thousands)

28 Jan 2015

Appropriation	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Research, Development, Test & Eval, AF	23,823,510	23,630,474	14,706	23,645,180	26,473,669	17,100	26,490,769
Total Research, Development, Test & Evaluation	23,823,510	23,630,474	14,706	23,645,180	26,473,669	17,100	26,490,769

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Summary Recap of Budget Activities	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Basic Research	510,830	551,008		551,008	485,253		485,253
Applied Research	1,124,358	1,100,790		1,100,790	1,217,342		1,217,342
Advanced Technology Development	624,332	629,912		629,912	675,785		675,785
Advanced Component Development & Prototypes	936,496	1,407,354		1,407,354	2,062,575		2,062,575
System Development & Demonstration	4,344,992	3,617,103		3,617,103	3,847,791		3,847,791
Management Support	1,418,396	1,178,699		1,178,699	1,174,584		1,174,584
Operational Systems Development	14,864,106	15,145,608	14,706	15,160,314	17,010,339	17,100	17,027,439
Total Research, Development, Test & Evaluation	23,823,510	23,630,474	14,706	23,645,180	26,473,669	17,100	26,490,769
Summary Recap of FYDP Programs							
Strategic Forces	181,376	514,726		514,726	618,422		618,422
General Purpose Forces	1,475,225	1,541,794		1,541,794	1,687,905	300	1,688,205
Intelligence and Communications	1,362,446	1,640,102		1,640,102	1,635,920		1,635,920
Mobility Forces	311,274	241,643		241,643	366,856		366,856
Research and Development	9,095,792	8,343,388		8,343,388	9,105,003		9,105,003
Central Supply and Maintenance	91,235	98,657		98,657	156,778		156,778
Training Medical and Other	1,716	2,538		2,538	3,272		3,272
Administration and Associated Activities	119,003	116,625		116,625	117,056		117,056
Support of Other Nations	3,785	3,790		3,790	2,315		2,315
Classified Programs	11,181,658	11,127,211	14,706	11,141,917	12,780,142	16,800	12,796,942
Total Research, Development, Test & Evaluation	23,823,510	23,630,474	14,706	23,645,180	26,473,669	17,100	26,490,769

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Intelligence and Communications	1,362,446	1,640,102		1,640,102	1,635,920		1,635,920
Mobility Forces	311,274	241,643		241,643	366,856		366,856
Research and Development	9,095,792	8,343,388		8,343,388	9,105,003		9,105,003
Central Supply and Maintenance	91,235	98,657		98,657	156,778		156,778
Training Medical and Other	1,716	2,538		2,538	3,272		3,272
Administration and Associated Activities	119,003	116,625		116,625	117,056		117,056
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Classified Programs	11,181,658	11,127,211	14,706	11,141,917	12,780,142	16,800	12,796,942
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Appropriation: 3600F Research, Development, Test & Eval, AF

Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Sec
1	0601102F	Defense Research Sciences	01	364,195	389,979		389,979	329,721		329,721	U
2	0601103F	University Research Initiatives	01	133,798	147,079		147,079	141,754		141,754	U
3	0601108F	High Energy Laser Research Initiatives	01	12,837	13,950		13,950	13,778		13,778	U
		Basic Research		510,830	551,008		551,008	485,253		485,253	
4	0602102F	Materials	02	118,951	110,680		110,680	125,234		125,234	U
5	0602201F	Aerospace Vehicle Technologies	02	117,724	105,673		105,673	123,438		123,438	U
6	0602202F	Human Effectiveness Applied Research	02	101,157	96,894		96,894	100,530		100,530	U
7	0602203F	Aerospace Propulsion	02	193,204	172,550		172,550	182,326		182,326	U
8	0602204F	Aerospace Sensors	02	125,989	118,321		118,321	147,291		147,291	U
9	0602601F	Space Technology	02	100,066	98,229		98,229	116,122		116,122	U
10	0602602F	Conventional Munitions	02	80,804	87,387		87,387	99,851		99,851	U
11	0602605F	Directed Energy Technology	02	110,725	125,866		125,866	115,604		115,604	U
12	0602788F	Dominant Information Sciences and Methods	02	136,885	147,749		147,749	164,909		164,909	U
13	0602890F	High Energy Laser Research	02	38,853	37,441		37,441	42,037		42,037	U
		Applied Research		1,124,358	1,100,790		1,100,790	1,217,342		1,217,342	
14	0603112F	Advanced Materials for Weapon Systems	03	53,593	40,177		40,177	37,665		37,665	U
15	0603199F	Sustainment Science and Technology (S&T)	03	12,380	15,800		15,800	18,378		18,378	U
16	0603203F	Advanced Aerospace Sensors	03	31,968	34,334		34,334	42,183		42,183	U
17	0603211F	Aerospace Technology Dev/Demo	03	75,029	91,037		91,037	100,733		100,733	U

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18	0603216F	Aerospace Propulsion and Power Technology	03	160,765	132,681		132,681	168,821		168,821	U
19	0603270F	Electronic Combat Technology	03	42,516	47,508		47,508	47,032		47,032	U
20	0603401F	Advanced Spacecraft Technology	03	57,787	68,907		68,907	54,897		54,897	U
21	0603444F	Maui Space Surveillance System (MSSS)	03	25,535	14,031		14,031	12,853		12,853	U
22	0603456F	Human Effectiveness Advanced Technology Development	03	24,508	21,788		21,788	25,448		25,448	U
23	0603601F	Conventional Weapons Technology	03	33,410	42,046		42,046	48,536		48,536	U
24	0603605F	Advanced Weapons Technology	03	18,519	33,542		33,542	30,195		30,195	U
25	0603680F	Manufacturing Technology Program	03	40,221	52,772		52,772	42,630		42,630	U
26	0603788F	Battlespace Knowledge Development and Demonstration	03	48,101	35,289		35,289	46,414		46,414	U
		Advanced Technology Development		624,332	629,912		629,912	675,785		675,785	
27	0603260F	Intelligence Advanced Development	04	3,983	5,408		5,408	5,032		5,032	U
28	0603287F	Physical Security Equipment	04	3,874							U
29	0603438F	Space Control Technology	04	22,862	6,075		6,075	4,070		4,070	U
30	0603742F	Combat Identification Technology	04	12,938	10,980		10,980	21,790		21,790	U
31	0603790F	NATO Research and Development	04	4,561	2,392		2,392	4,736		4,736	U
32	0603791F	International Space Cooperative R&D	04	379	833		833				U
33	0603830F	Space Security and Defense Program	04	23,986	31,613		31,613	30,771		30,771	U
34	0603851F	Intercontinental Ballistic Missile - Dem/Val	04	72,696	30,885		30,885	39,765		39,765	U
35	0603859F	Pollution Prevention - Dem/Val	04	953	998		998				U

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36	0604015F	Long Range Strike	04	348,625	913,728		913,728	1,246,228		1,246,228	U
37	0604317F	Technology Transfer	04	2,531	4,769		4,769	3,512		3,512	U
38	0604327F	Hard and Deeply Buried Target Defeat System (HDBTDS) Program	04	109,602				54,637		54,637	U
39	0604337F	Requirements Analysis and Maturation	04	11,486							U
40	0604422F	Weather System Follow-on	04		39,901		39,901	76,108		76,108	U
41	0604458F	Air & Space Ops Center	04	60,971							U
42	0604618F	Joint Direct Attack Munition	04	2,417							U
43	0604635F	Ground Attack Weapons Fuze Development	04	17,271							U
44	0604857F	Operationally Responsive Space	04	10,000	20,000		20,000	6,457		6,457	U
45	0604858F	Tech Transition Program	04	48,194	79,004		79,004	246,514		246,514	U
46	0605230F	Ground Based Strategic Deterrent	04					75,166		75,166	U
47	0105921F	Service Support to STRATCOM - Space Activities	04	2,685							U
48	0201184F	Counter Narco-Terrorism Program Office	04	510							U
49	0207110F	Next Generation Air Dominance	04		15,722		15,722	8,830		8,830	U
50	0207455F	Three Dimensional Long-Range Radar (3DELRR)	04	52,891	88,825		88,825	14,939		14,939	U
51	0305164F	NAVSTAR Global Positioning System (User Equipment) (SPACE)	04	123,081	156,221		156,221	142,288		142,288	U
52	0306250F	Cyber Operations Technology Development	04					81,732		81,732	U
Advanced Component Development & Prototypes				936,496	1,407,354		1,407,354	2,062,575		2,062,575	

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53	0603260F	Intelligence Advanced Development	05	977							U
54	0604233F	Specialized Undergraduate Flight Training	05	3,601	13,324		13,324				U
55	0604270F	Electronic Warfare Development	05	1,971	7,815		7,815	929		929	U
56	0604281F	Tactical Data Networks Enterprise	05	41,388	39,059		39,059	60,256		60,256	U
57	0604287F	Physical Security Equipment	05		3,926		3,926	5,973		5,973	U
58	0604329F	Small Diameter Bomb (SDB) - EMD	05	109,580	68,738		68,738	32,624		32,624	U
59	0604421F	Counterspace Systems	05	22,655	23,424		23,424	24,208		24,208	U
60	0604425F	Space Situation Awareness Systems	05	304,380	9,462		9,462	32,374		32,374	U
61	0604426F	Space Fence	05		200,082		200,082	243,909		243,909	U
62	0604429F	Airborne Electronic Attack	05	4,422	30,687		30,687	8,358		8,358	U
63	0604441F	Space Based Infrared System (SBIRS) High EMD	05	322,399	308,788		308,788	292,235		292,235	U
64	0604602F	Armament/Ordnance Development	05	13,661	29,112		29,112	40,154		40,154	U
65	0604604F	Submunitions	05	2,564	2,543		2,543	2,506		2,506	U
66	0604617F	Agile Combat Support	05	16,747	42,840		42,840	57,678		57,678	U
67	0604706F	Life Support Systems	05	7,069	14,854		14,854	8,187		8,187	U
68	0604735F	Combat Training Ranges	05	19,649	10,129		10,129	15,795		15,795	U
69	0604800F	F-35 - EMD	05	616,560	567,889		567,889	589,441		589,441	U
70	0604851F	Intercontinental Ballistic Missile - EMD	05	118,504							U
71	0604853F	Evolved Expendable Launch Vehicle Program (SPACE) - EMD	05	19,431	225,600		225,600	84,438		84,438	U

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72	0604932F	Long Range Standoff Weapon	05	5,000	3,438		3,438	36,643		36,643	U
73	0604933F	ICBM Fuze Modernization	05	76,553	59,826		59,826	142,551		142,551	U
74	0605213F	F-22 Modernization Increment 3.2B	05	88,268	173,647		173,647	140,640		140,640	U
75	0605214F	Ground Attack Weapons Fuze Development	05		5,332		5,332	3,598		3,598	U
76	0605221F	KC-46	05	1,505,476	786,437		786,437	602,364		602,364	U
77	0605223F	Advanced Pilot Training	05		8,201		8,201	11,395		11,395	U
78	0605229F	CSAR HH-60 Recapitalization	05	333,558	100,000		100,000	156,085		156,085	U
79	0605278F	HC/MC-130 Recap RDT&E	05	2,611	4,497		4,497				U
80	0605431F	Advanced EHF MILSATCOM (SPACE)	05	261,554	307,898		307,898	228,230		228,230	U
81	0605432F	Polar MILSATCOM (SPACE)	05	101,401	103,245		103,245	72,084		72,084	U
82	0605433F	Wideband Global SATCOM (SPACE)	05	11,674	31,328		31,328	56,343		56,343	U
83	0605458F	Air & Space Ops Center 10.2 RDT&E	05		85,938		85,938	47,629		47,629	U
84	0605931F	B-2 Defensive Management System	05	248,971	98,768		98,768	271,961		271,961	U
85	0101125F	Nuclear Weapons Modernization	05	33,000	168,357		168,357	212,121		212,121	U
86	0207171F	F-15 EPAWSS	05					186,481		186,481	U
87	0207701F	Full Combat Mission Training	05	4,663	8,831		8,831	18,082		18,082	U
88	0305176F	Combat Survivor Evader Locator	05					993		993	U
89	0307581F	NextGen JSTARS	05		73,088		73,088	44,343		44,343	U
90	0401318F	CV-22	05	46,705							U
91	0401319F	Presidential Aircraft Replacement (PAR)	05					102,620		102,620	U

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92	0701212F	Automated Test Systems	05					14,563		14,563	U
		System Development & Demonstration		4,344,992	3,617,103		3,617,103	3,847,791		3,847,791	
93	0604256F	Threat Simulator Development	06	14,786	24,418		24,418	23,844		23,844	U
94	0604759F	Major T&E Investment	06	31,423	47,232		47,232	68,302		68,302	U
95	0605101F	RAND Project Air Force	06	32,956	30,443		30,443	34,918		34,918	U
96	0605502F	Small Business Innovation Research	06	304,921							U
97	0605712F	Initial Operational Test & Evaluation	06	6,972	10,266		10,266	10,476		10,476	U
98	0605807F	Test and Evaluation Support	06	724,958	689,509		689,509	673,908		673,908	U
99	0605860F	Rocket Systems Launch Program (SPACE)	06	12,755	34,364		34,364	21,858		21,858	U
100	0605864F	Space Test Program (STP)	06	11,642	21,161		21,161	28,228		28,228	U
101	0605976F	Facilities Restoration and Modernization - Test and Evaluation Support	06	44,160	46,955		46,955	40,518		40,518	U
102	0605978F	Facilities Sustainment - Test and Evaluation Support	06	29,743	32,965		32,965	27,895		27,895	U
103	0606017F	Requirements Analysis and Maturation	06		16,350		16,350	16,507		16,507	U
104	0606116F	Space Test and Training Range Development	06		19,512		19,512	18,997		18,997	U
105	0606323F	Multi-Service Systems Engineering Initiative	06	6,682							U
106	0606392F	Space and Missile Center (SMC) Civilian Workforce	06	172,257	176,727		176,727	185,305		185,305	U
107	0308602F	ENTEPRISE INFORMATION SERVICES (EIS)	06		4,938		4,938	4,841		4,841	U

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108	0702806F	Acquisition and Management Support	06	20,525	18,644		18,644	15,357		15,357	U
109	0804731F	General Skill Training	06	304	1,425		1,425	1,315		1,315	U
110	0909999F	Financing for Cancelled Account Adjustments	06	527							U
111	1001004F	International Activities	06	3,785	3,790		3,790	2,315		2,315	U
		Management Support		1,418,396	1,178,699		1,178,699	1,174,584		1,174,584	
112	0603423F	Global Positioning System III - Operational Control Segment	07	361,381	299,060		299,060	350,232		350,232	U
113	0604233F	Specialized Undergraduate Flight Training	07					10,465		10,465	U
114	0604445F	Wide Area Surveillance	07	4,836	2,000		2,000	24,577		24,577	U
116	0604618F	Joint Direct Attack Munition	07		2,469		2,469				U
117	0605018F	AF Integrated Personnel and Pay System (AF-IPPS)	07	33,114	60,019		60,019	69,694		69,694	U
118	0605024F	Anti-Tamper Technology Executive Agency	07	25,733	34,815		34,815	26,718		26,718	U
119	0605278F	HC/MC-130 Recap RDT&E	07					10,807		10,807	U
121	0101113F	B-52 Squadrons	07	16,481	49,457		49,457	74,520		74,520	U
122	0101122F	Air-Launched Cruise Missile (ALCM)	07	983	450		450	451		451	U
123	0101126F	B-1B Squadrons	07	14,355	4,353		4,353	2,245		2,245	U
124	0101127F	B-2 Squadrons	07	80,225	116,580		116,580	108,183		108,183	U
125	0101213F	Minuteman Squadrons	07		139,109		139,109	178,929		178,929	U
126	0101313F	Strat War Planning System - USSTRATCOM	07	32,077	32,014		32,014	28,481		28,481	U

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127	0101314F	Night Fist - USSTRATCOM	07					87		87	U
128	0101316F	Worldwide Joint Strategic Communications	07					5,315		5,315	U
130	0102326F	Region/Sector Operation Control Center Modernization Program	07	1,570	1,272		1,272				U
131	0105921F	Service Support to STRATCOM - Space Activities	07		3,134		3,134	8,090		8,090	U
132	0205219F	MQ-9 UAV	07	104,000	148,598		148,598	123,439		123,439	U
133	0205671F	Joint Counter RCIED Electronic Warfare	07						300	300	U
134	0207131F	A-10 Squadrons	07	11,435							U
135	0207133F	F-16 Squadrons	07	109,887	133,105		133,105	148,297		148,297	U
136	0207134F	F-15E Squadrons	07	227,098	241,969		241,969	179,283		179,283	U
137	0207136F	Manned Destructive Suppression	07	10,724	14,831		14,831	14,860		14,860	U
138	0207138F	F-22A Squadrons	07	266,431	146,299		146,299	262,552		262,552	U
139	0207142F	F-35 Squadrons	07	3,000	40,092		40,092	115,395		115,395	U
140	0207161F	Tactical AIM Missiles	07	12,376	29,739		29,739	43,360		43,360	U
141	0207163F	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	68,564	82,195		82,195	46,160		46,160	U
142	0207171F	F-15 EPAWSS	07		38,944		38,944				U
143	0207224F	Combat Rescue and Recovery	07	2,582	5,095		5,095	412		412	U
144	0207227F	Combat Rescue - Pararescue	07	350	883		883	657		657	U
145	0207247F	AF TENCAP	07	114,816	5,812		5,812	31,428		31,428	U
146	0207249F	Precision Attack Systems Procurement	07	2,000	1,081		1,081	1,105		1,105	U

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147	0207253F	Compass Call	07	10,745	14,315		14,315	14,249		14,249	U
148	0207268F	Aircraft Engine Component Improvement Program	07	86,467	94,177		94,177	103,942		103,942	U
149	0207325F	Joint Air-to-Surface Standoff Missile (JASSM)	07	6,202	12,897		12,897	12,793		12,793	U
150	0207410F	Air & Space Operations Center (AOC)	07	18,332	25,662		25,662	21,193		21,193	U
151	0207412F	Control and Reporting Center (CRC)	07	6,435				559		559	U
152	0207417F	Airborne Warning and Control System (AWACS)	07	143,404	180,804		180,804	161,812		161,812	U
153	0207418F	Tactical Airborne Control Systems	07	719	3,754		3,754	6,001		6,001	U
155	0207431F	Combat Air Intelligence System Activities	07	5,780	7,891		7,891	7,793		7,793	U
156	0207444F	Tactical Air Control Party-Mod	07	8,816	5,850		5,850	12,465		12,465	U
157	0207448F	C2ISR Tactical Data Link	07	1,373	1,744		1,744	1,681		1,681	U
158	0207449F	Command and Control (C2) Constellation	07	7,418							U
159	0207452F	DCAPES	07	9,769	821		821	16,796		16,796	U
160	0207581F	Joint Surveillance/Target Attack Radar System (JSTARS)	07	27,308							U
161	0207590F	Seek Eagle	07	22,046	23,844		23,844	21,564		21,564	U
162	0207601F	USAF Modeling and Simulation	07	8,439	12,034		12,034	24,994		24,994	U
163	0207605F	Wargaming and Simulation Centers	07	5,326	5,956		5,956	6,035		6,035	U
164	0207697F	Distributed Training and Exercises	07	3,600	3,357		3,357	4,358		4,358	U
165	0208006F	Mission Planning Systems	07	55,432	60,679		60,679	55,835		55,835	U

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166	0208059F	Cyber Command Activities	07	36,824	67,057		67,057				U
167	0208087F	AF Offensive Cyberspace Operations	07	13,610	13,355		13,355	12,874		12,874	U
168	0208088F	AF Defensive Cyberspace Operations	07	5,853	5,576		5,576	7,681		7,681	U
171	0301017F	Global Sensor Integrated on Network (GSIN)	07					5,974		5,974	U
177	0301400F	Space Superiority Intelligence	07	10,697	10,697		10,697	13,815		13,815	U
178	0302015F	E-4B National Airborne Operations Center (NAOC)	07	12,816	25,852		25,852	80,360		80,360	U
179	0303001F	Family of Advanced BLoS Terminals (FAB-T)	07					3,907		3,907	U
180	0303131F	Minimum Essential Emergency Communications Network (MEECN)	07	18,981	80,882		80,882	75,062		75,062	U
181	0303140F	Information Systems Security Program	07	61,687	69,727		69,727	46,599		46,599	U
182	0303141F	Global Combat Support System	07	725	692		692				U
183	0303142F	Global Force Management - Data Initiative	07					2,470		2,470	U
184	0303601F	MILSATCOM Terminals	07	125,924	54,678		54,678				U
186	0304260F	Airborne SIGINT Enterprise	07	83,972	74,072		74,072	112,775		112,775	U
189	0305099F	Global Air Traffic Management (GATM)	07	4,027	4,157		4,157	4,235		4,235	U
190	0305103F	Cyber Security Initiative	07	1,979							U
191	0305105F	DoD Cyber Crime Center	07	279							U
192	0305110F	Satellite Control Network (SPACE)	07	34,488	20,806		20,806	7,879		7,879	U
193	0305111F	Weather Service	07	19,950	20,102		20,102	29,955		29,955	U

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194	0305114F	Air Traffic Control, Approach, and Landing System (ATCALs)	07	31,920	26,087		26,087	21,485		21,485	U
195	0305116F	Aerial Targets	07	10,616	8,639		8,639	2,515		2,515	U
198	0305128F	Security and Investigative Activities	07	189				472		472	U
199	0305145F	Arms Control Implementation	07	1,430	13,222		13,222	12,137		12,137	U
200	0305146F	Defense Joint Counterintelligence Activities	07	10	40		40	361		361	U
203	0305173F	Space and Missile Test and Evaluation Center	07	3,584	3,674		3,674	3,162		3,162	U
204	0305174F	Space Innovation, Integration and Rapid Technology Development	07	2,409	2,071		2,071	1,543		1,543	U
205	0305179F	Integrated Broadcast Service (IBS)	07	6,954	8,592		8,592	7,860		7,860	U
206	0305182F	Spacelift Range System (SPACE)	07	11,909	13,318		13,318	6,902		6,902	U
207	0305202F	Dragon U-2	07	13,700	5,511		5,511	34,471		34,471	U
208	0305205F	Endurance Unmanned Aerial Vehicles	07	1,000	20,000		20,000				U
209	0305206F	Airborne Reconnaissance Systems	07	47,059	37,652		37,652	50,154		50,154	U
210	0305207F	Manned Reconnaissance Systems	07	13,491	13,516		13,516	13,245		13,245	U
211	0305208F	Distributed Common Ground/Surface Systems	07	6,321	26,994		26,994	22,784		22,784	U
212	0305219F	MQ-1 Predator A UAV	07	760				716		716	U
213	0305220F	RQ-4 UAV	07	120,180	241,828		241,828	208,053		208,053	U
214	0305221F	Network-Centric Collaborative Targeting	07	7,413	11,096		11,096	21,587		21,587	U

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215	0305236F	Common Data Link Executive Agent (CDL EA)	07	33,896	32,015		32,015	43,986		43,986	U
216	0305238F	NATO AGS	07	221,589	232,851		232,851	197,486		197,486	U
217	0305240F	Support to DCGS Enterprise	07	19,309	17,118		17,118	28,434		28,434	U
218	0305265F	GPS III Space Segment	07	195,950	211,907		211,907	180,902		180,902	U
219	0305600F	International Intelligence Technology and Architectures	07		2,270		2,270				U
220	0305614F	JSPOC Mission System	07	56,523	73,779		73,779	81,911		81,911	U
221	0305881F	Rapid Cyber Acquisition	07	2,151	4,102		4,102	3,149		3,149	U
222	0305913F	NUDET Detection System (SPACE)	07	42,506	20,405		20,405	14,447		14,447	U
223	0305940F	Space Situation Awareness Operations	07	11,911	11,408		11,408	20,077		20,077	U
224	0306250F	Cyber Operations Technology Development	07		4,938		4,938				U
225	0308699F	Shared Early Warning (SEW)	07	1,060	1,157		1,157	853		853	U
226	0401115F	C-130 Airlift Squadron	07	47,700				33,962		33,962	U
227	0401119F	C-5 Airlift Squadrons (IF)	07	48,617	38,773		38,773	42,864		42,864	U
228	0401130F	C-17 Aircraft (IF)	07	97,134	82,948		82,948	54,807		54,807	U
229	0401132F	C-130J Program	07	22,443	26,715		26,715	31,010		31,010	U
230	0401134F	Large Aircraft IR Countermeasures (LAIRCM)	07	4,116	4,672		4,672	6,802		6,802	U
231	0401219F	KC-10s	07		2,714		2,714	1,799		1,799	U
232	0401314F	Operational Support Airlift	07	38,538	27,784		27,784	48,453		48,453	U
233	0401318F	CV-22	07		38,719		38,719	36,576		36,576	U

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234	0401319F	Presidential Aircraft Replacement (PAR)	07		11,006		11,006				U
235	0408011F	Special Tactics / Combat Control	07	6,021	8,312		8,312	7,963		7,963	U
236	0702207F	Depot Maintenance (Non-IF)	07	1,605	1,407		1,407	1,525		1,525	U
237	0708610F	Logistics Information Technology (LOGIT)	07	58,532	62,894		62,894	112,676		112,676	U
238	0708611F	Support Systems Development	07	10,573	15,712		15,712	12,657		12,657	U
239	0804743F	Other Flight Training	07	1,347	987		987	1,836		1,836	U
240	0808716F	Other Personnel Activities	07	65	126		126	121		121	U
241	0901202F	Joint Personnel Recovery Agency	07	1,046	2,603		2,603	5,911		5,911	U
242	0901218F	Civilian Compensation Program	07	2,296	1,589		1,589	3,604		3,604	U
243	0901220F	Personnel Administration	07	8,322	5,026		5,026	4,598		4,598	U
244	0901226F	Air Force Studies and Analysis Agency	07	760	1,394		1,394	1,103		1,103	U
245	0901279F	Facilities Operation - Administrative	07	632	3,798		3,798				U
246	0901538F	Financial Management Information Systems Development	07	105,420	102,215		102,215	101,840		101,840	U
9999	9999999999	Classified Programs		11,181,658	11,127,211	14,706	11,141,917	12,780,142	16,800	12,796,942	U
		Operational Systems Development		14,864,106	15,145,608		15,160,314	17,010,339	17,100	17,027,439	
Total Research, Development, Test & Eval, AF				23,823,510	23,630,474		23,645,180	26,473,669	17,100	26,490,769	

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

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

0306250F	CYBER OPERATIONS TECHNOLOGY DEVELOPMENT	In FY 2016, funding in PECs 0208059F and 0306250F, Project 676002 Cyber Systems Modernization, BA 07, was transferred to PE 0306250F, Cyber Operations Technology Development, Project 646008, US Cyber Command Technology Development, BA 04 in order to align efforts.
0603742F	COMBAT IDENTIFICATION TECHNOLOGY	In FY 2016, Project 642597 Non-cooperative Identification Subsystems includes new start efforts for Radio ID (RID).
0603790F	NATO RESEARCH AND DEVELOPMENT	In FY 2016, PE 0603791F, International Space Cooperative Research & Development, Project 645035, International Space Coop R&D, efforts were transferred to PE 0603790, NATO Research and Development, Project 64NATO, NATO Coop R&D, in order to consolidate international cooperative research and development activities.

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**PROGRAM ELEMENT COMPARISON SUMMARY**

**PROGRAM ELEMENT (BY BUDGET ACTIVITY)**

0603791F	INTERNATIONAL SPACE COOPERATIVE R&D	In FY 2016, PE 0603791F, International Space Cooperative Research & Development, Project 645035, International Space Coop R&D, efforts were transferred to PE 0603790, NATO Research and Development, Project 64NATO, NATO Coop R&D, in order to consolidate international cooperative research and development activities.
0603859F	POLLUTION PREVENTION - DEM/VAL	In FY 2016, Project Number 644852 Pollution Prevention was terminated.
0605230F	GROUND BASED STRATEGIC DETERRENT	In FY 2016, PE 0605230F, Project 641025, Ground Based Strategic Deterrent (GBSD), efforts were transferred from the Solid Rocket Motor Modernization (SRMM) and Guidance Modernization Program (GMP) efforts in PE 0101213F, Project 672987, MM Ops Equipment

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

0207171F	F-15 EPAWSS	In FY 2016, PE 0207171F, F-15 EPAWSS, Project 676038 was transferred to PE 0207171F, F-15 EPAWSS, Project 657108 BA05 to align BA with stage of development.
0305176F	COMBAT SURVIVOR EVADER LOCATOR	In FY 2016, Project 654522 CSAR EMD, includes new start efforts for CSEL Crypto.
0401319F	PRESIDENTIAL AIRCRAFT REPLACEMENT (PAR)	In the FY 2016, PE 0401319 Presidential Aircraft Recap (PAR), Project 655250 Presidential Aircraft Recapitalization, was transferred to PE 0401319 Presidential Aircraft Recap (PAR), Project 655250 Presidential Aircraft Recapitalization, BA07 to align BA with stage of development.
0604233F	SPECIALIZED UNDERGRADUATE FLIGHT TRAINING	In FY 2016 PE 0604233F Specialized Undergraduate Flight Training, Project 654102 JPATS was transferred to BA07 to align activities for upgrades to fielded weapon system.
0604421F	COUNTERSPACE SYSTEMS	In FY 2016, Project 65A013 Bounty Hunter is a new start effort.



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**PROGRAM ELEMENT COMPARISON SUMMARY**

**PROGRAM ELEMENT (BY BUDGET ACTIVITY)**

0604706F	LIFE SUPPORT SYSTEMS	In FY 2016 project 65412A Life Support Systems New Start projects for Personal Radio Communications (PRC) and Aircrew Safety Improvements.
0604853F	EELVP (SPACE) - EMD	In FY 2016, Project 650006, Next Generation Rocket Engine, includes new start efforts for the Evolved Expendable Launch Vehicle program.
0605278F	HC/MC-130 RECAP RDT&E	In FY 2016, PE 0605278F, HC/MC-130 Recap RDTE, Project 655249 HC-130Recap, efforts were transferred to PE 0605278F, HC/MC-130 Recap RDTE, Project 655249, HC/MC-130 Recap, BA 07 as the program achieved full rate production.
0701212F	AUTOMATED TEST SYSTEMS	In FY 2016, Project 6506TE, Test and Evaluation Support Budget Authority, includes a new start effort for Automated Bomber Test Systems.

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

0606017F	REQUIREMENTS ANALYSIS AND MATURATION	In FY 2016, Project 666158, Integrated Simulation and Analysis includes new start efforts to improve organic Air Force analysis and assessment capabilities.
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**BUDGET ACTIVITY #7: OPERATIONAL SYSTEMS DEVELOPMENT (Volume 3)**

0101113F	B-52 SQUADRONS	In FY 2016, Project 675055, GPS-IU, includes new start effort for Global Positioning System (GPS)-Interface Unit (IU) Replacement.  In FY 2016, Project 675039, B-52 System Improvements, includes new start effort(s) for potential engineering studies & analysis and test & evaluation.
0101127F	B-2 SQUADRONS	In FY 2016 Project 675345, B-2 Modernization, includes new start effort for B-2 strategic communication.

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**PROGRAM ELEMENT COMPARISON SUMMARY**

**PROGRAM ELEMENT (BY BUDGET ACTIVITY)**

0101213F	MINUTEMAN SQUADRONS	<p>In FY 2016, Project 672984, MM III Baseline Support, includes new start efforts for LGM-30G Cadmium Replacement Program (CaDRP) and LGM-30G Squadron Data Simulator (SDS).</p> <p>In FY 2016, Project 672985, MM Support Equip, the LGM-30G Payload Transporter Replacement (PTR) program was re-established and transferred from PE 0604851F, ICBM - EMD, Project 655037, Support Equipment, in order to consolidate ICBM efforts.</p> <p>In FY 2016, Project 672987, MM Ops Equipment, the two ongoing efforts will be transferred into PE 0605230F, Ground Based Strategic Deterrent (GBSD), Project 641025. The efforts being transferred are Guidance Modernization Program (GMP) and Solid Rocket Motor Modernization (SRMM).</p> <p>In FY 2016, Project 672985, MM Support Equip, includes a new start effort for LGM-30G Performance Assessment Data Systems Communications Equipment Interface Unit (PADS CEIU).</p>
0101313F	STRAT WAR PLANNING SYSTEM - USSTRATCOM	<p>In FY 2016, PE 0101313F, Strategic War Planning System, Project 675368, Global Sensor Integrated on Network, efforts were transferred to PE 0301017F, Global Sensor Integrated on Network, Project 675368, Global Sensor Integrated on Network, in order to provide improved transparency.</p>
0101316F	WORLDWIDE JOINT STRATEGIC COMMUNICATIONS	<p>In FY 2016, Project 671820, Strategic Automated Command and Control System (SACCS), includes a new start effort for SACCS Replacement.</p>
0105921F	SVC SPT TO STRATCOM - SPACE ACTIVITIES	<p>In FY 2016 Project 670373 DCIP and Project 67A011 Space Analysis and Application Development are new starts</p>
0207171F	F-15 EPAWSS	<p>In FY 2016, PE 0207171F, F-15 EPAWSS, Project 676038 was transferred to PE 0207171F, F-15 EPAWSS, Project 657108 BA05 to align BA with stage of development.</p>
0207224F	COMBAT RESCUE AND RECOVERY	<p>In FY 2016, Project 676016, Avionics Development and Integration will complete.</p>
0207412F	CONTROL AND REPORTING CENTER (CRC)	<p>In FY 2016, Project 67485L, Theater Air Control Sys Imp (TACSI), includes new start effort for JTIDS LINK 16 Terminal replacement.</p>

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**PROGRAM ELEMENT COMPARISON SUMMARY**

**PROGRAM ELEMENT (BY BUDGET ACTIVITY)**

0207601F	USAF MODELING AND SIMULATION	In FY 2016, Project Number 674567, M&S Foundations includes new start efforts for simulations for systems engineering and test activities.
0208059F	CYBER COMMAND ACTIVITIES	In FY 2016, PE 0208059F, Cyber Command Activities, Project 676002, Cyber Systems Modernization, efforts were transferred to PE 0306250F, Cyber Operations Technology Development, Project 646008, US Cyber Command Technology Development, to consolidate all USCYBERCOM programs
0208088F	AF DEFENSIVE CYBERSPACE OPERATIONS	In FY 2016, this program element includes new start efforts for Cyberspace Vulnerability Assessment, Cyber Defense Analysis, and AFCERT activities.
0301017F	GLOBAL SENSOR INTEGRATED ON NETWORK (GSIN)	In FY 2016, PE 0101313F, (Strategic War Planning System), Project 675368, (Global Sensor Integrated on Network) efforts were transferred to PE 0301017F, (Global Sensor Integrated on Network), Project 675368, (Global Sensor Integrated on Network), in order to provide improved transparency.
0302015F	E-4B NAT AIRBORNE OPS CTR (NAOC)	In FY 2016, Project E-4B Recapitalization includes new start efforts for E-4B Aircraft Modernization.
0303001F	FAMILY OF ADVANCED BLOS TERMINALS (FAB-T)	In FY 2016, PE 0303001F Family of Advanced BLoS Terminals (FAB-T), Project 672490, Family of Advanced BLoS Terminals (FAB-T) efforts were transferred to PE 0303601F, MILSATCOM Terminals, Project 672490, Family of Advanced BLoS Terminals (FAB-T) in order to provide improved visibility.
0303131F	MIN ESSENT EMGNCY COMM NETWORK (MEECN)	In FY 2016, Project 676029, Global ASNT, includes a new start effort for Global ASNT Increment 2.
0303141F	GLOBAL COMBAT SUPPORT SYSTEM	In FY 2016, components of project number 675046, Systems Engineering & Integration, efforts were transferred from PE 0303141F, Global Combat Support Systems (GCSS) to PE 0303142F, Global Force Management - Data Initiative (GFM-DI) in order to provide better visibility.
0303142F	GLOBAL FORCE MGMT - DATA INITIATIVE	In FY 2016, components of project number 675046, Systems Engineering & Integration, efforts were transferred from PE 0303141F, Global Combat Support Systems (GCSS) to PE 0303142F, Global Force Management - Data Initiative (GFM-DI) in order to provide better visibility.

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**PROGRAM ELEMENT COMPARISON SUMMARY**

**PROGRAM ELEMENT (BY BUDGET ACTIVITY)**

0303601F	MILSATCOM TERMINALS	In FY 2016, PE 0303601F, MILSATCOM Terminals, Project 672490, Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) was transferred to PE 0303001F, FAB-T, Project 672490 FAB-T for improved visibility of ACAT I programs.
0304260F	AIRBORNE SIGINT ENTERPRISE	In FY 2016, PE 0304260F, Airborne SIGINT Enterprise, Project 675181, High Altitude SIGINT Development - High Altitude efforts are transferred to PE 0304260F, Airborne SIGINT Enterprise, Project 675183, Common Development (Airborne SIGINT Development - Common Development) to better align efforts.
0305206F	AIRBORNE RECONNAISSANCE SYSTEMS	<p>In FY 2016, PE 0305220F, RQ-4, Project 675148, Common Airborne Sense and Avoid (C-ABSAA), efforts transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148, Common Airborne Sense and Avoid (C-ABSAA), in order to provide greater visibility into this capability and prepare for expanded applications.</p> <p>In FY 2016, PE 0305208F, Distributed Common Ground Station (DCGS), Project 676025, Data Compression, efforts transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 676025, Data Compression, in order to provide greater visibility into this capability.</p>
0305208F	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	In FY 2016, PE 0305208F, Distributed Common Ground Station (DCGS), Project 676025, Data Compression, efforts transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 676025, Data Compression, in order to provide greater visibility into this capability.
0305220F	RQ-4 UAV	In FY 2016, PE 0305220F, RQ-4, Project 675148, Common-Airborne Sense & Avoid (C-ABSAA), transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148. This transfer will provide greater visibility into this capability and prepares for expanded applications by making the capability program and platform agnostic.
0305614F	JSPOC MISSION SYSTEM	In FY 2016, Project 65A035, (Increment 3), includes new start efforts for JMS Increment 3.
0305940F	SPACE SITUATION AWARENESS OPERATIONS	In FY 2016, Project 67A017, Sensor Service Life Extension Program, includes a new start effort for Space Situational Awareness (SSA) Ops Demo.

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**PROGRAM ELEMENT COMPARISON SUMMARY**

**PROGRAM ELEMENT (BY BUDGET ACTIVITY)**

0306250F	CYBER OPERATIONS TECHNOLOGY DEVELOPMENT	In FY 2016, PE 0208059F, Cyber Command Activities, Project 676002, Cyber Systems Modernization, efforts were transferred to PE 0306250F, Cyber Operations Technology Development, Project 646008, US Cyber Command Technology Development, to consolidate all USCYBERCOM programs.
0401115F	C-130 AIRLIFT SQUADRON	C-130 CNS/ATM program has been updated and renamed C-130H VAAP Increment 1.
0401119F	C-5 AIRLIFT SQUADRONS (IF)	In FY 2016, Project 675359, C-5 Communication, Navigation, Surveillance / Air Traffic Management (CNS/ATM), is a new start effort.
0401318F	CV-22	In FY 2016, Project 676033 includes new start effort for Aircraft Electrical Power upgrade.
0401319F	PRESIDENTIAL AIRCRAFT REPLACEMENT (PAR)	In the FY 2016, PE 0401319 Presidential Aircraft Replacement, Project 655250 Presidential Aircraft Recap (PAR), was transferred to PE 0401319 Presidential Aircraft Replacement, Project 655250 Presidential Aircraft Recap (PAR), BA07 to realign budget activity for execution.

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**PROGRAM ELEMENT COMPARISON SUMMARY**

**PROGRAM ELEMENT (BY BUDGET ACTIVITY)**

0604233F	SPECIALIZED UNDERGRADUATE FLIGHT TRAINING	<p>In FY 2016 PE 0604233F Specialized Undergraduate Flight Training, Project 654102 JPATS, was transferred from BA05 as the program achieved full-rate production.</p> <p>In FY 2016 Project 674101 Undergraduate Remotely Piloted Aircraft Training includes a new start effort for Remotely Piloted Aircraft (RPA) Predator Reaper Integrated Mission Environment (PRIME) Desktop Training System (DTS).</p> <p>In FY 2016 Project 676034 Joint Primary Aircraft Training System (JPATS) was completed.</p> <p>In FY 2016 Project 676035 T-6 Operational System Development includes new start efforts for studies &amp; development efforts to support future ACAT III Engineering Change Proposals(ECPs) to the T-6 Aircraft. This includes development for the FAA mandated ACAT III program for ADS-B Out and associated upgrades.</p> <p>In FY 2016 Project 676037 T-38 Operational Systems Development includes a new start effort for Block upgrades to incorporate software and/or hardware improvements to comply with new requirements mandated by Department of Defense, Federal Aviation Administration or National Airspace System (DoD/FAA/NAS) and to address flight safety issues. The block upgrades support the T-38C aircraft and Aircrew Training Devices (ATD).</p>
0605278F	HC/MC-130 RECAP RDT&E	<p>In FY 2016, PE 0605278F, HC/MC-130 Recap RDTE, Project 655249 HC-130Recap, efforts were transferred from PE 0605278F, HC/MC-130 Recap RDTE, Project 655249, HC/MC-130 Recap, BA 05 as the program achieved full rate production.</p>
0708611F	SUPPORT SYSTEMS DEVELOPMENT	<p>In FY 2016, PE 0708611 Support Systems Development, Project 673318, Product Data Systems Modernization efforts transferred to PE 0708610F, Logistics Information Technology (Log IT), Project 675207 to align with the Enhanced Technical Information Management System (ETIMS) modification efforts funded within the Log IT PE.</p> <p>In FY 2016, PE 0708611 Support Systems Development, Project Number 675042, Logistics Application Logistics Integration (LALI), the F-35 User Identification Data Exchange System (UIDES) effort was transferred to PE 0604800F, F-35 Lightning II Joint Strike Fighter, in order to align the activity under the F-35 RDT&amp;E Program Element.</p>

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0301017F / <i>Global Sensor Integrated on Network (GSIN)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	-	-	5.974	-	5.974	3.505	3.572	3.640	3.705	Continuing	Continuing
675368: <i>GSIN (Global Integrated Sensor Network)</i>	-	-	-	5.974	-	5.974	3.505	3.572	3.640	3.705	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
In FY 2016, PE 0101313F, (Strategic War Planning System), Project 675368, (Global Sensor Integrated on Network) efforts were transferred to PE 0301017F, (Global Sensor Integrated on Network), Project 675368, (Global Sensor Integrated on Network), in order to provide improved transparency.

**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.

The 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 year.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0301017F / <i>Global Sensor Integrated on Network (GSIN)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	5.974	-	5.974
Total Adjustments	-	-	5.974	-	5.974
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	5.974	-	5.974

**Change Summary Explanation**

In FY 2016, PE 0101313F, (Strategic War Planning System), Project 675368, (Global Sensor Integrated on Network) efforts were transferred to PE 0301017F, (Global Sensor Integrated on Network), Project 675368, (Global Sensor Integrated on Network), in order to provide improved transparency.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>
<b>Title:</b> Sensor Data Exposure: NDPP, TPY-2, MASINT	-	-	3.700
<b>Description:</b> 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.			
<b>FY 2016 Plans:</b> NDPP: Finalize development of NDPP capability and integration with space production systems and the Space Catalog. Integrate with Joint Space Operations Center (JSpOC) Mission System (JMS). Develop implementation plans to mature data exposure capabilities. TPY-2: Continue C2BMC SSA development to accomodate TPY-2 sensor. Integration development with space			



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0301017F / <i>Global Sensor Integrated on Network (GSIN)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
production systems. Finalize C2BMC to enable it to participate in MDA's enterprise wide Ground Test Campaign. MASINT: Begin Phase 2 of MASINT exposure capability that incorporates additional technical intelligence sensors.				
<b>Title:</b> Data Integration: Launch Characterization Data Services Net Centric Data Integration Schema Configuration Control Technical Outreach		-	-	2.274
<b>Description:</b> 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.				
<b>FY 2016 Plans:</b> Continue development of common XML net-enabled data schemas to integrate additional 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 in support of Launch Characterization, SSA, NDPP and new, emerging programs.				
<b>Accomplishments/Planned Programs Subtotals</b>		-	-	5.974
<b>D. Other Program Funding Summary (\$ in Millions)</b> N/A				
<b>Remarks</b>				
<b>E. Acquisition Strategy</b> 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.				
<b>F. Performance Metrics</b> 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.				

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0301017F / <i>Global Sensor Integrated on Network (GSIN)</i>	<b>Project (Number/Name)</b> 675368 / <i>GSIN (Global Integrated Sensor Network)</i>
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<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Data Correlation, Visualization Architecture, Data Filtering Studies	C/CPFF	MIT/LL : Boston, MA	-	-		-		0.339	Nov 2015	-		0.339	Continuing	Continuing	-
Common Schema, Configuration and Control	C/CPFF	BAH : Omaha, NE	-	-		-		0.680	Nov 2015	-		0.680	Continuing	Continuing	-
CExpose Space Situational Awareness Data--Commercial, Owner/ Operator, Allied	C/CPAF	Lockheed Martin : Colorado Springs, CO	-	-		-		0.300	Nov 2015	-		0.300	Continuing	Continuing	-
Expose Space Situational Awareness Data - AN/TPY-2 Sensor	C/CPAF	Raytheon : Woburn, MA	-	-		-		-		-		-	Continuing	Continuing	-
Expose Space Situational Awareness Data - AN/TPY-2 Sensor (2)	C/CPAF	Lockheed Marting : Huntsville, AL	-	-		-		2.912	Nov 2015	-		2.912	Continuing	Continuing	-
Expose Space Situational Awareness Data - MASINT/TI	C/CPAF	MIT/LL : Boston, MA	-	-		-		0.538	Nov 2015	-		0.538	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		4.769		-		4.769	-	-	-

<b>Support (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
MW, MD, Space Subject Matter Expert Support	C/CPFF	Various : Omaha, NE	-	-		-		0.420	Jan 2016	-		0.420	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.420		-		0.420	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force												<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0301017F / Global Sensor Integrated on Network (GSIN)					<b>Project (Number/Name)</b> 675368 / GSIN (Global Integrated Sensor Network)							
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Testing	C/CPFF	Various : Omaha, NE	-	-		-		0.210	Oct 2015	-		0.210	Continuing	Continuing	-	
<b>Subtotal</b>			-	-		-		0.210		-		0.210	-	-	-	
<b>Management Services (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Program Management Administration	C/FFP	Various : Omaha, NE	-	-		-		0.575	Oct 2015	-		0.575	Continuing	Continuing	-	
<b>Subtotal</b>			-	-		-		0.575		-		0.575	-	-	-	
			Prior Years	<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>		Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-		-		5.974		-		5.974	-	-	-	
<b>Remarks</b>																

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>			<b>Date: February 2015</b>		
<b>Appropriation/Budget Activity</b> 3600 / 7		<b>R-1 Program Element (Number/Name)</b> PE 0301017F / <i>Global Sensor Integrated on Network (GSIN)</i>		<b>Project (Number/Name)</b> 675368 / <i>GSIN (Global Integrated Sensor Network)</i>	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
NDPP Delivery									■																			
TPY-2 Delivery																	■											
MASINT/TI Spiral 2 Delivery													■															
MASINT/TI Spiral 3 Delivery																									■			
Data Integration Spiral 2 Delivery									■																			
Data Integration Spiral 3 Delivery													■															
Data Integration Spiral 4 Delivery																	■											
Data Integration Delivery																									■			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0301017F / <i>Global Sensor Integrated on Network (GSIN)</i>	<b>Project (Number/Name)</b> 675368 / <i>GSIN (Global Integrated Sensor Network)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NDPP Delivery	2	2016	2	2016
TPY-2 Delivery	1	2018	1	2018
MASINT/TI Spiral 2 Delivery	4	2017	4	2017
MASINT/TI Spiral 3 Delivery	3	2019	3	2019
Data Integration Spiral 2 Delivery	2	2016	2	2016
Data Integration Spiral 3 Delivery	3	2017	3	2017
Data Integration Spiral 4 Delivery	2	2018	2	2018
Data Integration Delivery	1	2019	1	2019

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>					<b>R-1 Program Element (Number/Name)</b> PE 0301400F / <i>Space Superiority Intelligence</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	-	10.697	10.697	13.815	-	13.815	14.019	14.237	14.482	14.714	Continuing	Continuing
67A051: <i>Space Superiority - Advanced Intelligence Systems</i>	-	10.697	10.697	13.815	-	13.815	14.019	14.237	14.482	14.714	Continuing	Continuing

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

Provides Electronic Support (ES) for key find, fix, track, target, engage and assess (F2T2EA) requirements supporting Space Superiority activities. Additionally, funding provides for developmental intelligence collection to support new capability acquisition and development. This program element funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats. It provides intelligence support systems for Space Situational Awareness activities that provide the requisite current and predictive knowledge of space events and threat conditions and intelligence support to Space Protection Programs by providing architectural survivability analyses of critical mission assets for mission assurance. Additionally, funding supports phased threat system analysis and studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for system development and vulnerability/susceptibility assessments to support tactics, techniques and procedures (TTP) development. Also funded are future threat technology studies necessary for mission area success and achievement of space superiority, helping preserve the US space advantage across all domains. 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	10.697	12.218	12.407	-	12.407
Current President's Budget	10.697	10.697	13.815	-	13.815
Total Adjustments	-	-1.521	1.408	-	1.408
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.521			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	1.408	-	1.408

**Change Summary Explanation**

FY15: -\$1.521M for Congressional Directed Reduction  
 FY16: +\$1.408M for additional intel support

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0301400F / <i>Space Superiority Intelligence</i>				<b>Project (Number/Name)</b> 67A051 / <i>Space Superiority - Advanced Intelligence Systems</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
67A051: <i>Space Superiority - Advanced Intelligence Systems</i>	-	10.697	10.697	13.815	-	13.815	14.019	14.237	14.482	14.714	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Provides Electronic Support (ES) for key find, fix, track, target, engage and assess (F2T2EA) requirements supporting Space Superiority activities. Funds developmental intelligence collection to support new capability acquisition and development. This project also funds transportable intelligence collection and analysis capabilities that are modular (plug-and-play), and can keep pace with technological advances and emerging threats. It provides intelligence support systems for Space Situational Awareness activities that provide the requisite current and predictive knowledge of space events and threat conditions and intelligence support to Space Protection Programs by providing architectural survivability analysis of critical mission assets for mission assurance. It also supports phased threat system analysis and studies (A&S), test support, lab equipment, and Material Acquisition and Exploitation (MAE) for system development and vulnerability/susceptibility assessments to support tactics, techniques and procedures (TTP) development and future threat technology studies necessary for mission area success and achievement of space superiority, and to preserve the US space advantage across all domains. This program is in Budget Activity 7, Operational System Development, because it includes development efforts to upgrade systems that have been fielded.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Advanced Intelligence Systems for Space Superiority	10.697	10.697	13.815
<b>Description:</b> Develops transportable and fixed collection and analysis capability.			
<b>FY 2014 Accomplishments:</b> Supported Space Superiority and Space Control R&D intelligence; architecture upgrade support to Space Situation Awareness, Space Protection Program & Space Superiority; data analysis and product development for R&D deployment activities; and support for testing and data collection.			
<b>FY 2015 Plans:</b> Continues Space Superiority and Space Control R&D intelligence support; architecture upgrade support to Space Situation Awareness, Space Protection Program & Space Superiority; data analysis and product development for R&D deployment activities; and support for testing and data collection.			
<b>FY 2016 Plans:</b>			



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0301400F / <i>Space Superiority Intelligence</i>	<b>Project (Number/Name)</b> 67A051 / <i>Space Superiority - Advanced Intelligence Systems</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Will support Space Superiority RDT&E activities by developing, integrating, and fielding enhanced Space Control, Space Situational Awareness, and Space Protection Program capabilities. Will integrate new technologies into transportable and fixed collection capabilities to improve data analysis, product development, deployment and testing activity support.			
<b>Accomplishments/Planned Programs Subtotals</b>	10.697	10.697	13.815

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

<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• None: <i>None</i>	-	-	-	-	-	-	-	-	-	-	-

**Remarks**

**D. Acquisition Strategy**

All contracts funded in this program will be awarded using competitive procedures to the maximum extent possible.

**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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0301400F / Space Superiority Intelligence				67A051 / Space Superiority - Advanced Intelligence Systems							
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Space Superiority and R&D intelligence Development	Various	Various : ,	-	2.258	Nov 2013	2.457	Nov 2014	3.205	Nov 2015	-		3.205	Continuing	Continuing	TBD
Architecture upgrades to SSA, SPP, and Space Superiority	Various	Various : ,	-	3.080	Nov 2013	3.602	Oct 2014	4.802	Nov 2015	-		4.802	Continuing	Continuing	TBD
Data analysis and product development for R&D	Various	Various : ,	-	4.265	Nov 2013	3.676	Oct 2014	4.550	Nov 2015	-		4.550	Continuing	Continuing	TBD
Intelligence systems testing and data collection	Various	Various : ,	-	0.647	Nov 2013	0.460	Nov 2014	0.460	Nov 2015	-		0.460	Continuing	Continuing	TBD
<b>Subtotal</b>			-	10.250		10.195		13.017		-		13.017	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration (PMA)	Various	Various : ,	-	0.447	Nov 2013	0.502	Oct 2015	0.798		-		0.798	Continuing	Continuing	TBD
<b>Subtotal</b>			-	0.447		0.502		0.798		-		0.798	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0301400F / <i>Space Superiority Intelligence</i>				<b>Project (Number/Name)</b> 67A051 / <i>Space Superiority - Advanced Intelligence Systems</i>				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>		
<b>Project Cost Totals</b>	-	10.697	10.697	13.815	-	13.815	-	-	-		

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0301400F / <i>Space Superiority Intelligence</i>	<b>Project (Number/Name)</b> 67A051 / <i>Space Superiority - Advanced Intelligence Systems</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

Architecture upgrade for SSA, SPP, and Space Superiority	[REDACTED]																											
-- Phase 1	[REDACTED]																											
-- Phase 2	[REDACTED]																											
Data analysis and product development for R&D intelligence	[REDACTED]																											
Deployment for testing and data collection	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0301400F / <i>Space Superiority Intelligence</i>	<b>Project (Number/Name)</b> 67A051 / <i>Space Superiority - Advanced Intelligence Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Architecture upgrade for SSA, SPP, and Space Superiority	1	2014	4	2018
-- Phase 1	1	2014	4	2014
-- Phase 2	1	2014	4	2015
Data analysis and product development for R&D intelligence	1	2014	4	2018
Deployment for testing and data collection	1	2014	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0302015F / <i>E-4B National Airborne Operations Center (NAOC)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	12.816	25.852	80.360	-	80.360	26.535	0.634	-	1.840	Continuing	Continuing
674777: <i>E-4B Aircraft Modernization</i>	-	12.816	25.852	80.360	-	80.360	26.535	0.634	-	1.840	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
 In FY2016, Project E-4B Recapitalization includes new start efforts to plan for fleet recapitalization.

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

The four (4) aircraft E-4B National Airborne Operations Center (NAOC) fleet satisfies the military need for an airborne operations center with communications capabilities permitting military and civilian leadership to monitor and control military and civil national assets during all phases of conflict (nuclear and non-nuclear) or natural disaster. The E-4B NAOC fleet also satisfies the military requirement to provide a highly survivable node of the National Military Command System (NMCS).

This Program Element's (PE's) developmental modifications include, but are not limited to, upgrades and enhancements to aircraft structures, propulsion system, fuel system, environmental control system, electrical generation and distribution systems, flight safety and navigation systems (with their associated communications equipment), and the related aircraft operations center facilities, equipment, and communications necessary for the E-4B fleet to execute its mission. Additionally, funds may be used to explore modifications, upgrades, and future systems required to meet evolving mission requirements. Developmental modifications and studies/projects currently underway or planned for accomplishment under this program include:

- The Advanced Extremely High Frequency (AEHF) Compatible Terminal/ Presidential National Voice Conferencing (PNVC) Program integrates externally provided AEHF Compatible Command Post Terminals and PNVC capability onto the E-4B NAOC platform. This integration is necessary to replace the legacy Military Strategic, Tactical and Relay (MILSTAR) terminal, and provide access to protected wideband AEHF satellite networks. PNVC replaces the Survivable Emergency Conferencing Network (SECN), which will not be supported once the AEHF satellite network is in place.
- The Low Frequency Transmit System (LFTS) program will replace the Very Low Frequency/Low Frequency (VLF/LF) Transmit system currently installed on the E-4B. The current system is no longer sustainable after over 35 years of operation on the E-4B. In order to meet existing National Security Presidential Directive (NSPD)-28 requirements and ensure there is constant and consistent connectivity to civilian and military leadership and military forces during real world situations, this system must be replaced. The transmit system consists of three primary equipment groups: a Control/Monitor group, a Power Amplifier/Coupler (PA/C) group, and a Trailing Wire Antenna (TWA) group.
- E-4B Recapitalization efforts include the assessment of aircraft alternatives to meet the required need date and ability to support the Nuclear Command, Control and Communications (NC3), Secretary of Defense travel, Continuity of Operations/Continuity of Government (COOP/COG), and other missions as identified in associated requirements documentation. Funds will be used for technology development strategy, test and evaluation strategy, systems engineering plan development, lifecycle

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0302015F / <i>E-4B National Airborne Operations Center (NAOC)</i>
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management plan development, capabilities development, and other required documents leading up to a Milestone A decision. This program, E-4B Recapitalization, is a new start.

Activities will include studies and analysis to support current program planning and execution, and planning for future programs.

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.

The FY2016 funding request was reduced by \$1.241 million to account for the availability of prior execution balances.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	13.250	28.778	42.825	-	42.825
Current President's Budget	12.816	25.852	80.360	-	80.360
Total Adjustments	-0.434	-2.926	37.535	-	37.535
• Congressional General Reductions	-	-0.026			
• Congressional Directed Reductions	-	-2.900			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.434	-			
• Other Adjustments	-	-	37.535	-	37.535

**Change Summary Explanation**

FY16 funding was increased for Advanced Extremely High Frequency (AEHF)/Presidential National Voice Conferencing (PNVC) systems engineering and integration planning and Low Frequency Transmit System (LFTS)laboratory assets, prototype system development, and fielding and testing on first aircraft.

There was a \$2.9M Congressional Directed Reduction for LFTS in FY2015 due to "Delay to Contract Award".

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Advanced Extremely High Frequency (AEHF) Compatible Terminal/Presidential National Voice Capability (PNVC)	1.200	1.679	24.810	-	24.810
<b>Description:</b> Integrate AEHF Compatible Terminal/PNVC capability onto the E-4B NAOC Platform, to replace the existing MILSTAR/SECN system.					



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0302015F / <i>E-4B National Airborne Operations Center (NAOC)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
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***FY 2014 Accomplishments:***  
 - Accomplished engineering activities necessary for the integration of the AEHF Terminal/PNVC Capability onto an airborne platform.  
 - Specific activities addressed technical issues associated with a change in antenna location from the kit design, a modified power amplifier to accomodate the change in antenna location and a fire supression system required to install the capability on the platform.

***FY 2015 Plans:***  
 - Continue E-4B Program Office engineering activities necessary for the integration of the AEHF Terminal/PNVC capability onto an airborne platform.  
 - Activities will address hands on modifications to the terminal in order to produce a proof of concept prototype of the initial integrated solution.

***FY 2016 Base Plans:***  
 - Continue with full year of design and development efforts, to include non- recurring engineering, development of parts and labor for a systems integration lab, early prototyping, and some hardware qualification testing.  
 - Will complete risk reduction studies and award development contract.  
 - Will begin development of integrated system to install capability onto first aircraft and will conduct a System Readiness Review (SRR) and prepare Preliminary Design Review (PDR).

***FY 2016 OCO Plans:***  
 N/A

<p><b><i>Title:</i></b> Low Frequency Transmit System (LFTS)</p> <p><b><i>Description:</i></b> Replaces the the E-4B's legacy Very Low Frequency/Low Frequency (VLF/LF) Transmit System, which is over 35 years old and is past its useful life. This capability is required to comply with National Security Presidential Directive (NSPD)-28; to ensure there is constant and consistent connectivity between civilian and military leadership and military forces during all stages of conflict and/or national emergency.</p> <p><b><i>FY 2014 Accomplishments:</i></b>                      - Activities focused on risk reduction studies prior to development contract award. These studies include Radio Frequency (RF) Antenna Wire Isolation, Antenna Wire Performance, and Power Quality Baseline efforts.                      - Preparation of proposal costs for development of contract Requests for Proposal.</p> <p><b><i>FY 2015 Plans:</i></b></p>	11.616	24.173	55.400	-	55.400
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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0302015F / <i>E-4B National Airborne Operations Center (NAOC)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p>Continue with full year of design and development efforts, to include non- recurring engineering, development of parts and labor for a systems integration lab, early prototyping, and some hardware qualification testing. Will conduct a System Requirements Review (SRR) and Preliminary Design Review (PDR).</p> <p><b>FY 2016 Base Plans:</b> - Continue with design and development efforts, to include non-recurring engineering, development of parts and labor for a systems integration lab, early prototyping, and some hardware qualification testing. - Will conduct Critical Design Review (CDR), Material Readiness Review (MRR) and purchase prototype kit.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>					
<p><b>Title:</b> E-4B Recapitalization</p> <p><b>Description:</b> E-4B recapitalization efforts will include analysis for a replacement fleet to support Nuclear Command, Control and Communications (NCS), Secretary of Defense travel, Continuity of Operations/Continuity of Government (COOP/COG), and other missions. It will involve identifying viable concepts and materiel solutions in support of the National Airborne Operations Center (NAOC) mission and capabilities. Funding supports pre-Milestone A activities to include and Analysis of Alternatives (AoA) and associated concept refinement activities of potential materiel solutions. This effort will explore materiel technology alternatives at the system and sub-system levels and during the Materiel Solution Analysis (MSA) Phase leading to a Milestone A decision.</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> N/A</p> <p><b>FY 2016 Base Plans:</b> Efforts will include concept refinement, technology analysis, modeling and simulation, engineering studies, program cost and schedule estimation, acquisition strategy development, risk reduction efforts, initial requirements developments, and Milestone A preparation.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>	-	-	0.150	-	0.150
<b>Accomplishments/Planned Programs Subtotals</b>	12.816	25.852	80.360	-	80.360

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0302015F / <i>E-4B National Airborne Operations Center (NAOC)</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # E00400: <i>E-4B Nat Airborne Ops Center (NAOC)</i>	16.479	16.399	23.237	-	23.237	53.586	32.073	39.292	41.401	Continuing	Continuing
• APAF: BA05: Line Item # 833140: <i>Worldwide Joint Strategic Communication</i>	0.686	0.692	0.700	-	0.700	0.711	0.726	0.738	0.750	Continuing	Continuing
• APAF: BA06: Line Item # 000999: <i>Initial Spares/Repair Parts</i>	265.597	549.972	656.242	-	656.242	833.819	767.431	764.128	743.465	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

Acquisition Strategy: The acquisition strategy for each specific modification differs based on the urgency of the requirement, definition of the capability, and technology readiness level of the components. Acquisition strategy for an eventual E-4 replacement will be determined after requirements have been finalized.

Management Strategy: Program management for all aircraft modifications is conducted from the existing E-4B program office at Tinker AFB. The Program Executive Officer (PEO) for mobility provides management oversight.

Contracting Strategy: Contracting strategy differs for each individual modification, but normally includes a initial risk reduction study contract followed by a development under Tinker AFB's Engineering Support Services (ESS) contract with Boeing - San Antonio. Production installations and sustainment are accomplished with a separate 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0302015F / E-4B National Airborne Operations Center (NAOC)	<b>Project (Number/Name)</b> 674777 / E-4B Aircraft Modernization
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AEHF Compatible Terminal/PNVC	SS/CPIF	Raytheon : Largo, FL	-	1.200	May 2014	-		-		-		-	Continuing	Continuing	1.200
AEHF Compatible Terminal/PNVC -2	C/CPIF	TBD : ,	-	-		1.679	Apr 2015	24.810	Jan 2016	-		24.810	Continuing	Continuing	-
LFTS Replacement	Various	Boeing, OKC : OKC, OK	-	11.616	Sep 2014	24.173	Mar 2015	55.400	Mar 2016	-		55.400	Continuing	Continuing	-
E-4B Recapitalization	C/Various	TBD : ,	-	-		-		0.150	Sep 2016	-		0.150	Continuing	Continuing	-
<b>Subtotal</b>			-	12.816		25.852		80.360		-		80.360	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	12.816	25.852	80.360	-	80.360	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0302015F / E-4B National Airborne Operations Center (NAOC)			<b>Project (Number/Name)</b> 674777 / E-4B Aircraft Modernization				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0302015F / E-4B National Airborne Operations Center (NAOC)	<b>Project (Number/Name)</b> 674777 / E-4B Aircraft Modernization

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
AEHF Compatible Terminal/PNVC Design and Development	████████████████████																											
AEHF Compatible Terminal/PNVC Milestone Decision B					████																							
AEHF Compatible Terminal/PNVC Integration and Testing									████████████████████																			
AEHF Compatible Terminal/PNVC Milestone Decision C																	████											
LFTS Modification Design and Development	████████████████████																											
LFTS Milestone Decision B					████																							
LFTS Modification Integration and Testing													████████████████████															
LFTS Modification Milestone Decision C													████															
E-4B Recapitalization									████████████████████				████████████████████				████████████████████				████████████████████							
E-4B Recapitalization pre-Milestone Analysis									████████████████████				████████████████████				████████████████████											
E-4B Recapitalization Decision																	████											
E-4B Recapitalization Development																					████████████████████							

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0302015F / E-4B National Airborne Operations Center (NAOC)	<b>Project (Number/Name)</b> 674777 / E-4B Aircraft Modernization

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AEHF Compatible Terminal/PNVC Design and Development	1	2014	1	2016
AEHF Compatible Terminal/PNVC Milestone Decision B	3	2015	3	2015
AEHF Compatible Terminal/PNVC Integration and Testing	2	2016	1	2019
AEHF Compatible Terminal/PNVC Milestone Decision C	2	2019	2	2019
LFTS Modification Design and Development	3	2014	2	2017
LFTS Milestone Decision B	2	2015	2	2015
LFTS Modification Integration and Testing	2	2017	2	2018
LFTS Modification Milestone Decision C	1	2017	1	2017
E-4B Recapitalization	4	2016	4	2020
E-4B Recapitalization pre-Milestone Analysis	4	2016	4	2018
E-4B Recapitalization Decision	4	2018	4	2018
E-4B Recapitalization Development	1	2019	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303001F / <i>Family of Advanced BLoS Terminals (FAB-T)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	-	-	3.907	-	3.907	-	-	-	-	Continuing	Continuing
672490: <i>Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)</i>	-	-	-	3.907	-	3.907	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
 In FY2014 PE 0303001F Family of Advanced BLoS Terminals(FAB-T), Project 672489 efforts were transferred to PE 0303001F, Family of Advanced BLoS Terminals (FAB-T)to Project 672490 Family of Advanced BLoS Terminals (FAB-T) in order to provide improved visibility.

In FY2016, PE 0303001F Family of Advanced BLoS Terminals (FAB-T), Project 672490, Family of Advanced BLoS Terminals (FAB-T) efforts were transferred to PE 0303601F, MILSATCOM Terminals, Project 672490, Family of Advanced BLoS Terminals (FAB-T) in order to provide improved visibility.

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

The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program replaces legacy Milstar terminals and will provide Extremely High Frequency (EHF), protected high data rate communication for nuclear and conventional forces to include Presidential National Voice Conferencing (PNVC). FAB-T will provide this new, highly secure, state-of-the-art capability for DoD platforms to include strategic platforms and airborne/ground command posts via Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FAB-T terminals will also support the critical command and control (C2) of the Milstar, AEHF and EPS satellite constellations. In FY16, the Air Force continued development of the FAB-T terminal.

The FY2016 funding request was reduced by \$.333 million to account for the availability of prior execution balances

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.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303001F / <i>Family of Advanced BLoS Terminals (FAB-T)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	3.907	-	3.907
Total Adjustments	-	-	3.907	-	3.907
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	3.907	-	3.907

**Change Summary Explanation**

In FY16 FAB-T \$3.933M was transferred from PE: 0303601F, Project: 672490 to PE: 0303001F, PROJECT: 672490 for improved visibility. This is not a New Start.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>
<b>Title:</b> FAB-T Development	-	-	3.907
<b>Description:</b> The FAB-T program will provide EHF voice and data MILSATCOM for nuclear and conventional forces as well as airborne and ground command posts with connectivity to Milstar, AEHF, and EPS satellites.			
<b>FY 2016 Plans:</b> Completion of FAB-T development efforts.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	3.907

<b>D. Other Program Funding Summary (\$ in Millions)</b>			<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>	<u>Cost To</u>					
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>
• APAF: BA05, FBLOST: <i>FAB-T</i>	-	-	44.163	-	44.163	11.343	11.517	11.876	18.117	Continuing	Continuing
• OPAF; BA03, 836700: <i>FAB-T</i>	-	-	79.592	-	79.592	127.264	23.169	26.430	79.830	Continuing	Continuing
• Spares and Repair Parts BP16: <i>FAB-T</i>	-	-	3.363	-	3.363	1.393	1.352	1.241	1.263	Continuing	Continuing
• Spares and Repair Parts BP86: <i>FAB-T</i>	-	-	44.436	-	44.436	39.419	24.417	49.942	50.827	Continuing	Continuing

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303001F / <i>Family of Advanced BLoS Terminals (FAB-T)</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**

Prior through FY15 APAF and OTHACF are in BA: 05, PE: 0303601F Lines #59 and #64.  
 Prior through FY14 OPAF are in BA: 03, PE: 0303601F BPAC: 836780 Line #48.

FY15 OPAF PROJECT: 836780 transferred to PROJECT: 836700 Line #48 same program element.

FY15 APAF Spares and Repair Parts and FY15 OPAF Spares and Repair Parts are in PE: 0303601F.

In FY16 APAF Spares and Repair Parts and FY16 OPAF Spares and Repair parts PE: 0303601F transferred to PE: 0303001F

**E. Acquisition Strategy**

In FY12, the government restructured the FAB-T development program to introduce competition into the acquisition strategy in order to reduce risk in delivering this capability as well as to drive down production costs. To ensure the best value to the government, the Air Force awarded production contracts in September 2013 to both contractors (Boeing and Raytheon). The production contracts began with production planning for both contractors. In June 2014, the Air Force down-selected to Raytheon. Development will continue with Raytheon and production of FAB-T Command Post Terminals. Production contract options to produce CPT terminals will be exercised after a successful Milestone C decision.

**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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0303001F / Family of Advanced BLoS Terminals (FAB-T)				672490 / Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)							
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FAB-T Development	C/CPFF	Raytheon : Marlborough, MA	-	-		-		2.647	Oct 2015	-		2.647	-	2.647	-
<b>Subtotal</b>			-	-		-		2.647		-		2.647	-	2.647	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering DMS (FFRDC)	SS/CPAF	MITRE : Bedford, MA	-	-		-		0.349	Oct 2015	-		0.349	-	0.349	-
<b>Subtotal</b>			-	-		-		0.349		-		0.349	-	0.349	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test Support	Various	Various : Various,	-	-		-		0.200	Oct 2015	-		0.200	-	0.200	-
<b>Subtotal</b>			-	-		-		0.200		-		0.200	-	0.200	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
ETASS (Engineering & Technology Acq Spt Services) (PMA)	C/TBD	TBD : TBD,	-	-		-		0.365	Nov 2015	-		0.365	-	0.365	-
PASS (Professional Acq Spt Services) (PMA)	C/TBD	TBD : TBD,	-	-		-		0.346	Nov 2015	-		0.346	-	0.346	-
<b>Subtotal</b>			-	-		-		0.711		-		0.711	-	0.711	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303001F / Family of Advanced BLoS Terminals (FAB-T)	<b>Project (Number/Name)</b> 672490 / Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
ETASS and PASS recomplete in FY15.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	-	-	3.907	-	3.907	-	3.907	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303001F / <i>Family of Advanced BLoS Terminals (FAB-T)</i>	<b>Project (Number/Name)</b> 672490 / <i>Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
FAB-T Raytheon Development Contract																												
FAB-T Production Downselect Decision																												
Milestone C Decision																												
FAB-T Production Contract Options																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303001F / <i>Family of Advanced BLoS Terminals (FAB-T)</i>	<b>Project (Number/Name)</b> 672490 / <i>Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FAB-T Raytheon Development Contract	3	2014	1	2016
FAB-T Production Downselect Decision	3	2014	3	2014
Milestone C Decision	4	2015	4	2015
FAB-T Production Contract Options	4	2015	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	18.981	80.882	75.062	-	75.062	32.000	16.853	17.903	6.021	Continuing	Continuing
672832: <i>MEECN System Improvements</i>	-	0.873	0.860	0.894	-	0.894	0.912	0.929	0.946	0.964	Continuing	Continuing
676029: <i>Global Aircrew Strategic Network Terminal</i>	-	18.108	80.022	74.168	-	74.168	31.088	15.924	16.957	5.057	Continuing	Continuing

**Note**  
 In FY16, Project 676029, Global ASNT, includes a new start effort for Global ASNT Increment 2.

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

Nuclear Deterrence Operations (NDO) is an Air Force Core Function. Within this core function, Nuclear Command and Control (NC2) is the exercise of authority and direction by the President, as Commander in Chief, through established command lines, over nuclear weapon operations of military forces. The President's authority and direction are exercised through the Nuclear Command and Control System (NCCS). The NCCS is the designated combination of flexible and enduring elements including facilities, equipment, communications, procedures, personnel, and the structure in which these elements are integrated, all of which are essential for planning, directing, and controlling nuclear weapon operations.

The Minimum Essential Emergency Communications Network (MEECN) portfolio modernizes the systems necessary to effectively provide assured communications connectivity between the President and the strategic deterrence forces in stressed environments.

MEECN System Improvements (MSI) is a long-range planning process with users (Air Force Global Strike Command (AFGSC), Air Combat Command (ACC), Air Force Space Command (AFSPC), Air Mobility Command (AMC), US Strategic Command (USSTRATCOM), and the Navy) to develop recommendations for current and future requirements/issues based on available technology. MSI is used to conduct technology testing, analyze technology strategies and build technology roadmaps as proactive support to the Nuclear Command, Control, and Communications (NC3) community.

Global Aircrew Strategic Network Terminal (Global ASNT) replaces inadequate, unsustainable strategic communications equipment at bomber, tanker and reconnaissance Wing Command Posts (WCPs), Nuclear Task Forces, Munitions Support Squadrons (MUNSS), and for Mobile Support Teams (MSTs). Global ASNT is a ground-based system that will provide survivable, secure communication paths to receive Emergency Action Messages (EAMs) and Force Management messages from NC3 nodes and disseminate them to bomber, tanker, and reconnaissance aircrews.

Global ASNT is being fielded in separate capability increments.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>
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Global ASNT Increment 1 fields required Extremely High Frequency/Advanced Extremely High Frequency (EHF/AEHF) capabilities and replaces inadequate, unsustainable strategic mobile and fixed-site Single Channel Anti-jam Man-Portable (SCAMP) terminals. The FY16 funding request was reduced by \$1.140 million to account for the availability of prior execution balances in Global ASNT Inc 1.

Global ASNT Increment 2 is a new start. Increment 2 delivers an Aircrew Alerting System (AAS) consisting of pagers and klaxons, and High Frequency (HF) and Ultra High Frequency (UHF) capabilities. Increment 2 replaces Electromagnetic Pulse Hardened Dispersal Communication (EHDC) systems and Aircrew Alerting Communications Electromagnetic Pulse (ACE) systems.

Global ASNT Increment 3 is planned to deliver a Very Low Frequency (VLF)/Low Frequency (LF) receive capability.

Global ASNT will provide solutions to existing capability shortfalls for NC3 and is the last line of operational communications when all other peacetime links fail.

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 years.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	18.481	81.035	72.301	-	72.301
Current President's Budget	18.981	80.882	75.062	-	75.062
Total Adjustments	0.500	-0.153	2.761	-	2.761
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.500	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-0.153	2.761	-	2.761

**Change Summary Explanation**

The FY16 funding request was reduced by \$1.140 million to account for the availability of prior execution balances in Global ASNT Inc 1.

The FY16 funding request was increased by \$3.901M to begin Global ASNT Inc 2 pre-milestone B activities.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>					<b>Project (Number/Name)</b> 672832 / <i>MEECN System Improvements</i>		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
672832: <i>MEECN System Improvements</i>	-	0.873	0.860	0.894	-	0.894	0.912	0.929	0.946	0.964	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

MEECN System Improvements (MSI) is a long-range planning process with users (Air Force Global Strike Command (AFGSC), Air Combat Command (ACC), Air Force Space Command (AFSPC), Air Mobility Command (AMC), US Strategic Command (USSTRATCOM), and the Navy) to develop recommendations for current and future requirements/issues based on available technology. MSI will perform risk reduction, and analyze requirements and prepare technologies for future replacement or acquisition efforts. MSI is used to conduct technology testing, analyze technology strategies, and build technology roadmaps as pro-active support to the Nuclear Command, Control, and Communications (NC3) community.

Very Low Frequency/Low Frequency (VLF/LF) receivers are currently used as one of the means for secure/survivable connectivity from the President to strategic forces. Over the years, the Air Force and Navy have pursued their own VLF products, which meet the unique application and environmental situations for each platform. MSI is investigating the technical feasibility of a future common core of processing hardware and software that supports all VLF receiver platforms and associated waveforms.

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 years.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> MEECN System Improvements	0.873	0.860	0.894
<b>Description:</b> Conduct Nuclear Command, Control and Communications (NC3) technology testing, build comprehensive technology strategies and roadmaps. Conduct VLF/LF tradeoff analysis. Deliver results of analytic tasks in an annual NC3 report.			
<b>FY 2014 Accomplishments:</b> Refreshed NC3 Architecture Roadmap. Modeled and Simulated Platform Electro-Magnetic Interference (EMI) results. Performed VLF Antenna analysis. Continued Common VLF Receiver (CVR) Trade-off analysis.			
<b>FY 2015 Plans:</b> Refresh NC3 Architecture Roadmap Perform Bomber Message Reception Assessment			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>	<b>Project (Number/Name)</b> 672832 / <i>MEECN System Improvements</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Provide CVR Requirement Analysis Support Continue Common VLF Receiver Trade-off analysis Continue Model Improvement Efforts			
<b><i>FY 2016 Plans:</i></b> Refresh NC3 Architecture Roadmap Continue CVR Requirement Analysis Support Produce Bomber Message Reception Test Results Report Perform Bomber Message Reception Coverage Impact Assessment Continue Model Improvement Efforts			
<b>Accomplishments/Planned Programs Subtotals</b>	0.873	0.860	0.894

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• N/A: None	-	-	-	-	-	-	-	-	-	-	-

**Remarks**

**D. Acquisition Strategy**  
Johns Hopkins University (JHU) Applied Physics Lab (APL) is on contract to provide inputs to the NC3 Roadmap. This effort is a "time and materials" type 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>	<b>Project (Number/Name)</b> 672832 / <i>MEECN System Improvements</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NC3 Roadmap	MIPR	JHU APL : Laurel, MD	-	0.406	Mar 2014	0.416	Mar 2015	0.396	Mar 2016	-		0.396	Continuing	Continuing	TBD
<b>Subtotal</b>			-	0.406		0.416		0.396		-		0.396	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA (Eng/Acq Spt/MITRE/Travel/IMPAC)	Various	Various : Various,	-	0.467	Dec 2013	0.444	Dec 2014	0.498	Dec 2015	-		0.498	Continuing	Continuing	TBD
<b>Subtotal</b>			-	0.467		0.444		0.498		-		0.498	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	0.873	0.860	0.894	-	0.894	-	-	-

**Remarks**



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>	<b>Project (Number/Name)</b> 672832 / <i>MEECN System Improvements</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MEECN System Improvement	1	2014	4	2020
NC3 Annual Report - FY14	4	2014	4	2014
NC3 Annual Report - FY15	4	2015	4	2015
NC3 Annual Report - FY16	4	2016	4	2016
NC3 Annual Report - FY17	4	2017	4	2017
NC3 Annual Report - FY18	4	2018	4	2018
NC3 Annual Report - FY19	4	2019	4	2019
NC3 Annual Report - FY20	4	2020	4	2020

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>					<b>Project (Number/Name)</b> 676029 / <i>Global Aircrew Strategic Network Terminal</i>		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
676029: <i>Global Aircrew Strategic Network Terminal</i>	-	18.108	80.022	74.168	-	74.168	31.088	15.924	16.957	5.057	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY16, Project 676029, Global ASNT, includes a new start effort for Global ASNT Increment 2.

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

Global ASNT replaces inadequate, unsustainable strategic communications equipment at bomber, tanker and reconnaissance Wing Command Posts (WCPs), Nuclear Task Forces, Munitions Support Squadrons (MUNSS), and for Mobile Support Teams (MSTs). Global ASNT is a ground-based system that will provide survivable, secure communication paths to receive Emergency Action Messages (EAMs) and Force Management messages from NC3 nodes and disseminate them to bomber, tanker, and reconnaissance aircrews.

Global ASNT is being fielded in separate capability increments.

Increment 1 fields required Extremely High Frequency/Advanced Extremely High Frequency (EHF/AEHF) capabilities and replaces inadequate, unsustainable strategic mobile and fixed-site Single Channel Anti-jam Man-Portable (SCAMP) terminals.

Increment 2 delivers an Aircrew Alerting System (AAS) consisting of pagers and klaxons, and High Frequency (HF) and Ultra High Frequency (UHF) capabilities. Increment 2 replaces Electromagnetic Pulse Hardened Dispersal Communication (EHDC) systems and Aircrew Alerting Communications Electromagnetic Pulse (AACE) systems.

Increment 3 is planned to deliver a Very Low Frequency (VLF)/Low Frequency (LF) receive capability.

Global ASNT will provide solutions to existing capability shortfalls for NC3 and is the last line of operational communications when all other peacetime links fail.

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 years.



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>	<b>Project (Number/Name)</b> 676029 / <i>Global Aircrew Strategic Network Terminal</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> Engineering &amp; Manufacturing Development (Global ASNT Inc 1)</p> <p><b>Description:</b> Engineering &amp; Manufacturing Development (EMD)</p> <p><b>FY 2014 Accomplishments:</b> Awarded EMD contract 23 Dec 13. Conducted Integrated Baseline Review (IBR) and System Requirements Review (SRR). Continued Engineering and Manufacturing Development to include EHF and AEHF integration of modem design, cryptographic upgrade, software development, antenna integration and test of developed hardware and software.</p> <p><b>FY 2015 Plans:</b> Conduct Preliminary Design Review (PDR) and Critical Design Review (CDR). Continue development to include EHF and AEHF integration of modem design, cryptographic upgrade, software development, antenna integration and test of developed hardware and software.</p> <p><b>FY 2016 Plans:</b> Continue development for Increment 1 to include EHF and AEHF integration of modem design, cryptographic upgrade, software development, antenna integration and test of developed hardware and software; conduct government Developmental Testing/ Operational Testing (DT/OT) in preparation for early FY17 MS C.</p>	18.108	80.022	69.797
<p><b>Title:</b> Pre-Milestone B Activities (Global ASNT Inc 2)</p> <p><b>Description:</b> Pre-Milestone B Activities</p> <p><b>FY 2016 Plans:</b> Conduct pre-development and engineering activities in preparation for a Global ASNT Inc 2 Milestone B.</p>	-	-	4.371
<b>Accomplishments/Planned Programs Subtotals</b>	18.108	80.022	74.168

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF: BA03: Line item # 834210: <i>Global ASNT</i>	-	1.289	5.232	-	5.232	200.572	131.169	40.799	24.972	Continuing	Continuing
<b>Remarks</b>											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>	<b>Project (Number/Name)</b> 676029 / <i>Global Aircrew Strategic Network Terminal</i>

**D. Acquisition Strategy**  
Global ASNT used a full and open competitive source selection to award an EMD contract for Increment 1. Global ASNT will continue to use a competitive incremental approach to fulfill the overall requirements of the program for Increments 2 and 3.

**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.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>											<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>					<b>Project (Number/Name)</b> 676029 / <i>Global Aircrew Strategic Network Terminal</i>						

<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering & Manufacturing Development	C/FPIF	Raytheon : Marlborough, MA	-	11.513	Dec 2013	68.310	Oct 2014	54.399	Oct 2015	-		54.399	Continuing	Continuing	TBD
Satellite Simulations	SS/FFP	MIT/Lincoln Laboratory : Lexington, MA	-	0.335	Jan 2014	0.824	Jan 2015	0.840	Jan 2016	-		0.840	Continuing	Continuing	TBD
<b>Subtotal</b>			-	11.848		69.134		55.239		-		55.239	-	-	-

**Remarks**  
 - Raytheon Global ASNT Inc 1 EMD contract for FY15 and FY16 is an incrementally funded continuing effort on the existing contract. Incremental funding is projected for October FY15 and October FY16, as appropriated funds become available to obligate on this FPIF type contract.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MITRE Lab	SS/CPFF	MITRE : Bedford, MA	-	1.171	Jan 2014	1.606	Oct 2014	1.865	Oct 2015	-		1.865	Continuing	Continuing	-
Software Support	Various	Various : ,	-	0.474	Jun 2014	0.254	Feb 2015	3.694	Feb 2016	-		3.694	Continuing	Continuing	-
GFE	Various	Various : ,	-	-		-		0.420	Mar 2016	-		0.420	Continuing	Continuing	-
<b>Subtotal</b>			-	1.645		1.860		5.979		-		5.979	-	-	-

**Remarks**  
 - MITRE support for FY15 and FY16 is an incrementally funded continuing effort on the existing contract with an annual period of performance of 1 Oct-30 Sep.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Test and Evaluation	Various	Various : ,	-	0.106	Feb 2014	0.620	Nov 2014	1.158	Nov 2015	-		1.158	Continuing	Continuing	TBD
NSA	MIPR	NSA, Maryland : ,	-	0.010	Jan 2014	0.382	Jan 2015	0.445	Jan 2016	-		0.445	Continuing	Continuing	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>											<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>					<b>Project (Number/Name)</b> 676029 / <i>Global Aircrew Strategic Network Terminal</i>						

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	0.116		1.002		1.603		-		1.603	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA (Eng/Acq Support, Travel)	Various	Various : ,	-	2.451	Dec 2013	4.814	Nov 2014	6.774	Nov 2015	-		6.774	Continuing	Continuing	TBD
PMA (MITRE)	SS/CPFF	MITRE : Bedford, MA	-	2.048	Oct 2013	3.212	Oct 2014	4.573	Oct 2015	-		4.573	Continuing	Continuing	TBD
<b>Subtotal</b>			-	4.499		8.026		11.347		-		11.347	-	-	-

**Remarks**  
- MITRE management services for FY15 and FY16 are incrementally funded continuing efforts on the existing contract with an annual period of performance of 1 Oct-30 Sep.

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	18.108	80.022	74.168	-	74.168	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>	<b>Project (Number/Name)</b> 676029 / <i>Global Aircrew Strategic Network Terminal</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Inc 1 - EHF/AEHF Technical Development	■																											
Inc 1 - EHF/AEHF Milestone B Decision	■																											
Inc 1 EHF/AEHF Contract Award	■																											
Inc 1 - EHF/AEHF Engineering and Manufacturing Development		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Inc 1 - EHF/AEHF Preliminary Design Review (PDR)						■																						
Inc 1 - EHF/AEHF Critical Design Review (CDR)							■																					
Inc 1 - EHF/AEHF Test										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Inc 1 EHF/AEHF Milestone C Decision															■													
Inc 1 - EHF/AEHF Production and Deployment															■	■	■	■	■	■	■	■	■	■	■	■	■	
Inc 1 EHF/AEHF IOC																												
Inc 1 - EHF/AEHF Ops and Support																												
Inc 1 EHF/AEHF FOC																												
Inc 2 - AAS/UHF/HF Technical Development										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Inc 2 - AAS/UHF/HF Milestone B Decision																												
Inc 2 - AAS/UHF/HF Contract Award																												
Inc 2 - AAS/UHF/HF Engineering and Manufacturing Development																												
Inc 2 - AAS/UHF/HF Preliminary Design Review (PDR)																												
Inc 2 - AAS/UHF/HF Critical Design Review (CDR)																												
Inc 2 - AAS/UHF/HF Test (continues into FY21)																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303131F / <i>Minimum Essential Emergency Communications Network (MEECN)</i>	<b>Project (Number/Name)</b> 676029 / <i>Global Aircrew Strategic Network Terminal</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Inc 1 - EHF/AEHF Technical Development	1	2014	1	2014
Inc 1 - EHF/AEHF Milestone B Decision	1	2014	1	2014
Inc 1 EHF/AEHF Contract Award	1	2014	1	2014
Inc 1 - EHF/AEHF Engineering and Manufacturing Development	2	2014	4	2015
Inc 1 - EHF/AEHF Preliminary Design Review (PDR)	1	2015	1	2015
Inc 1 - EHF/AEHF Critical Design Review (CDR)	3	2015	3	2015
Inc 1 - EHF/AEHF Test	1	2016	1	2017
Inc 1 EHF/AEHF Milestone C Decision	1	2017	1	2017
Inc 1 - EHF/AEHF Production and Deployment	1	2017	4	2020
Inc 1 EHF/AEHF IOC	3	2018	3	2018
Inc 1 - EHF/AEHF Ops and Support	4	2018	1	2020
Inc 1 EHF/AEHF FOC	1	2020	1	2020
Inc 2 - AAS/UHF/HF Technical Development	1	2016	3	2018
Inc 2 - AAS/UHF/HF Milestone B Decision	3	2018	3	2018
Inc 2 - AAS/UHF/HF Contract Award	3	2018	3	2018
Inc 2 - AAS/UHF/HF Engineering and Manufacturing Development	4	2018	2	2020
Inc 2 - AAS/UHF/HF Preliminary Design Review (PDR)	2	2019	2	2019
Inc 2 - AAS/UHF/HF Critical Design Review (CDR)	3	2019	3	2019
Inc 2 - AAS/UHF/HF Test (continues into FY21)	2	2020	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	61.687	69.727	46.599	-	46.599	50.352	36.830	33.715	36.729	Continuing	Continuing
674861: <i>EKMS (Electronic Key Management System)</i>	-	1.993	0.592	0.633	-	0.633	0.931	0.948	0.964	0.980	-	7.041
675100: <i>Cryptographic Modernization</i>	-	53.930	59.773	29.068	-	29.068	46.425	34.136	30.984	33.951	Continuing	Continuing
675231: <i>AF Key Management Infrastructure (AF KMI)</i>	-	5.764	9.362	16.898	-	16.898	2.996	1.746	1.767	1.798	Continuing	Continuing

**Note**

In FY 2014, Project 677820, Computer Security Firestarter efforts were transferred to PE 0208088F, Air Force Defensive Cyberspace Operations to better align efforts.

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

The Information Systems Security Program (ISSP) Element provides cradle-to-grave research, development, acquisitions, supply, sustainment, depot maintenance, and demilitarization of the Air Force (AF) cryptographic and key distribution/management systems. Additionally, ISSP funds the AF operation of one of two Department of Defense (DoD) Tier 1 key distribution centers. The AF and the DoD require the capability to secure, collect, process, store, and disseminate an uninterrupted flow of information, while denying an adversary the ability to intercept, collect, destroy, interpret, or manipulate our information flows. Secure communication allows the DoD to achieve and maintain decision superiority; the key to successful application of the military instrument of national power. AF COMSEC equipment protects information such as, warfighter positions, mission planning, target strikes, commanders' orders, intelligence, force strength, and force readiness. This COMSEC program ensures adversaries cannot interpret, manipulate, or destroy information. When an adversary is capable of interpretation, manipulation, or destruction of the information used by the warfighter, DoD military forces will suffer significant and/or devastating mission degradation that can result in loss of life and resources and/or cede information that could be used against the United States in a public forum.

The overall focus of the Research, Development, Test, and Evaluation (RDT&E) efforts within this program is to transform electronic key delivery and cryptographic devices to meet the next generation warfighting requirements. These efforts are driven by the National Security Agency's (NSA) tenets calling for (1) a totally "man-out-of-the-loop" electronic crypto key distribution system from the actual generation of the key in the key processor all the way into the using End Crypto Unit (ECU) (eliminates the current key vulnerability to compromise/interruption by individuals transporting or loading the key); and (2) an inventory of cryptographic devices that are more robust, modular, scalable, capable, net-centric, and durable (allows more effective and efficient performance including reduced inventory, expanded data rates, simplified upgrades, and ensured global information grid-compatibility).

This program is in Budget Activity 7, Operational System Development, as 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.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	74.530	70.497	86.005	-	86.005
Current President's Budget	61.687	69.727	46.599	-	46.599
Total Adjustments	-12.843	-0.770	-39.406	-	-39.406
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-10.500	-0.770			
• SBIR/STTR Transfer	-2.091	-			
• Other Adjustments	-0.252	-	-39.406	-	-39.406

**Change Summary Explanation**

Reductions in FY14 funding due to higher Air Force priorities.  
 Reductions in FY15 funding due to higher Air Force priorities.  
 Reductions in FY16 funding due to higher Air Force priorities.



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>				<b>Project (Number/Name)</b> 674861 / <i>EKMS (Electronic Key Management System)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
674861: <i>EKMS (Electronic Key Management System)</i>	-	1.993	0.592	0.633	-	0.633	0.931	0.948	0.964	0.980	-	7.041
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Air Force Electronic Key Management System (AFEKMS) consists of multiple developments supporting the Air Force requirements portion of the DoD EKMS Program. The National Security Agency (NSA) acts as the Executive Agency for the DoD EKMS Program. AFEKMS, in concert with the overarching DoD EKMS program, provides a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material, with users across DoD Command, Control, Communications, Computers, and Intelligence (C4I) and all current AF weapon systems. Bases and units, in garrison and deployed DoD EKMS replaced the previous manual distribution and management system providing cryptographic keying material for U.S. DoD Information Assurance. Information Assurance emphasizes confidentiality, access control, multi-level secure databases, trusted computing, and information integrity. DoD EKMS has a three-tier hierarchical structure. This tiered structure provides capability to distribute, manage, and account for COMSEC keying material. Tier 1 installations comprise the key material generation and control capability. Tier 2 installations comprise the local distribution network (COMSEC accounts) and Tier 3 is where keying material is transferred from the EKMS infrastructure to the consumers End Cryptographic Units (ECUs). Additionally, AFEKMS resources provide maintenance/distribution of AF Communications Security (COMSEC) publications for all AF users.

EKMS improved protection of national security-related information by substantially enhancing confidentiality, integrity, and non-repudiation characteristics over the legacy manual key management systems. EKMS has and continues to greatly accelerate availability of crypto key materials through electronic transmission through Public Switched Telephone Network (PSTN) versus the manual handling and shipping of materials. While the current EKMS level-of-effort is directed at enhancing current and developing systems, the ultimate goal is for it to seamlessly transition to the net-centric DoD Key Management Infrastructure (KMI). The AFEKMS Program continues to provide software development to support emerging requirements during the KMI transition period. Activities include studies and analysis to support both current program planning and execution as well as development activities to extend life of the Simple Key Loader to bridge the gap between EKMS and the KMI implementation.

NOTE: Software development (e.g., Data Management Device - DMD, Common User Application Software - CUAS, and Simple Key Loader - SKL) is rolled up into Tier 2/Tier 3 Development. Software upgrades can be bundled and tracked as a unit, thereby allowing less management overhead and more focus on configuration management and control.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> AFEKMS Tier 2/3 SW Modification and Updates	1.993	-	-
<b>Description:</b> Data Management Device (DMD) software upgrade/update to mitigate existing IA vulnerabilities.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 674861 / <i>EKMS (Electronic Key Management System)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b><i>FY 2014 Accomplishments:</i></b> Data Management Device (DMD) software upgrade/update to mitigate existing IA vulnerabilities.</p> <p><b><i>FY 2015 Plans:</i></b> N/A</p> <p><b><i>FY 2016 Plans:</i></b> N/A</p>				
<p><b><i>Title:</i></b> Fill /Load Device Post Production SW Development</p> <p><b><i>Description:</i></b> Post Production software development focuses on extending life of EKMS through transition to Key Management Infrastructure (KMI) capabilities. This will be accomplished via the Intermediary Application (iApp) software and Tri-Service development of KOV-21 replacement chip through Communications-Electronics Research, Development and Engineering Center (CERDEC) by U.S. Army. The iApp is designed to include all major Data Management Device (DMD) capabilities. The iApp is designed to meet certification and accreditation requirements and iApp user interface is designed for ease of adoption and minimal user training for EKMS DMD, Consolidated Tier 3 Testing Infrastructure (CETTI) User Application Software (UAS), and Simple Key Loader (SKL). The CERDEC effort develops a replacement KOV-21 Card for current Simple Key Loader (SKL) to extend life of SKL until KMI compatible key loader is available.</p> <p><b><i>FY 2015 Plans:</i></b> Post Production software development focuses on extending life of EKMS through transition to Key Management Infrastructure (KMI) capabilities. This will be accomplished via the Intermediary Application (iApp) software and Tri-Service development of KOV-21 replacement chip through Communications-Electronics Research, Development and Engineering Center (CERDEC) by U.S. Army. The iApp is designed to include all major Data Management Device (DMD) capabilities. The iApp is designed to meet certification and accreditation requirements and iApp user interface is designed for ease of adoption and minimal user training for EKMS DMD, Consolidated Tier 3 Testing Infrastructure (CETTI) User Application Software (UAS), and Simple Key Loader (SKL). The CERDEC effort develops a replacement KOV-21 Card for current Simple Key Loader (SKL) to extend life of SKL until KMI compatible key loader is available.</p> <p><b><i>FY 2016 Plans:</i></b> Continue Post Production software development on extending life of EKMS through transition to Key Management Infrastructure (KMI) capabilities.</p>		-	0.592	0.633
<b>Accomplishments/Planned Programs Subtotals</b>		1.993	0.592	0.633

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 674861 / <i>EKMS (Electronic Key Management System)</i>

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>			<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• OPAF:BA03: 831010: <i>COMSEC Equipment</i>	2.015	2.150	3.000	-	3.000	2.641	1.247	1.252	1.041	Continuing	Continuing

**Remarks**

Other Program Funding reflects Air Force Electronic Key Management System (AFEKMS) portion of Information Systems Security Program (ISSP) OPAF total.

**D. Acquisition Strategy**

All major contracts within this Project are open to full and open competition with technology knowledge, expertise, and prior experience on similar projects weighted heavily in the evaluation process.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 674861 / <i>EKMS (Electronic Key Management System)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Tier 2/3 software modifications and updates	TBD	Various : ,	-	1.077	Sep 2014	-		-		-		-	Continuing	Continuing	-
Fill/Load Device Post Production Software Development	C/T&M	Mantech Sensor Technologies, Inc. : Red Bank, NY	-	-		-		-		-		-	Continuing	Continuing	-
Tri-Service CERDEC Chip	TBD	Various : ,	-	0.491	Apr 2015	0.464	Apr 2016	0.502	Apr 2017	-		0.502	Continuing	Continuing	-
<b>Subtotal</b>			-	1.568		0.464		0.502		-		0.502	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SKL CETTI UAS Testing Spt DMS	MIPR	SPAWAR : San Diego, CA	-	0.125	May 2014	0.128	May 2015	0.131	May 2016	-		0.131	Continuing	Continuing	-
<b>Subtotal</b>			-	0.125		0.128		0.131		-		0.131	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	C/CPFF	Various : ,	-	0.300	Jul 2014	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.300		-		-		-		-	-	-	-





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 674861 / <i>EKMS (Electronic Key Management System)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AFEKMS Tier 2/3 SW Modification and Updates	1	2014	4	2020
Fill/Load Device Post Production SW Development	1	2014	4	2014

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>				<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675100: <i>Cryptographic Modernization</i>	-	53.930	59.773	29.068	-	29.068	46.425	34.136	30.984	33.951	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The AF Cryptographic Modernization Effort modernizes cryptographic devices protecting critical national security information across cyber domain operations. In September 2000, the Defense Review Board (DRB) tasked National Security Agency (NSA) to evaluate the security posture of the cryptographic inventory. Systems with aging algorithms, those approaching non-sustainability, and those generally incompatible with modern key management systems were also identified and have been replaced or are being fielded. Priority systems that required immediate replacement were also identified. In addition, NSA documented the need to modernize the cryptographic inventory with capabilities designed to enable network-centric operations. Replacements/Modernization of the near term vulnerable systems must occur within the timeframe specified by device and algorithm in Chairman Joint Chiefs of Staff Notice (CJCSN) 6510. The DoD Cryptographic Modernization Program was established to develop a modern cryptographic base that provides this assured security robustness, interoperability, advanced algorithms, releasability, programmability, and compatibility with the future Key Management Infrastructure (KMI-See PE 0303140F, BPAC 67523, AF KMI for a full description). This AF effort supports an integrated effort across the cyber domain to transform to next generation cryptographic capabilities providing U.S. forces and multinational and interagency partners the security needed to protect the flow and exchange of operational decision making information in accordance with national and international policy/standards, the validated operational requirements of the warfighters, and the intelligence communities.

The AF Cryptographic Modernization Effort is a collection of projects accomplished in three phases: replacement, modernization, and transformation. The replacement phase of the program focused on updating and/or replacing out-of-date algorithms along with unsustainable cryptographic products. The modernization phase provides crypto devices with common solutions that are more robust, modular, scalable, and provide the durability to existing cryptographic end items, as well as updating mid-term aging/unsupportable crypto equipment. Manpower and logistics requirements will be reduced and manpower efficiencies gained, while incremental capability enhancements and footprint reduction are provided. The third phase of the Cryptographic Modernization Program, transformation, provides common joint solutions which enable secure transparent network-centric capabilities across the cyber domain. Activities also include studies and analysis to support both current program planning and execution and future program planning. FY14 funding increased to address pending crypto key/algorithm decertifications due to increased threats identified by NSA.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> VINSON/ANDVT Cryptographic Modernization (VACM)	26.238	0.940	-
<b>Description:</b> VINSON (VHF(Very High Frequency)/UHF(Ultra High Frequency) Wideband Tactical Secure Voice System Cryptographic Equipment)-ANDVT (Advanced Narrowband Digital Voice Terminal) Cryptographic Modernization (VACM) will develop and acquire cryptographic capability to replace the legacy capability on VINSON/ANDVT secure voice communications			



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
on aircraft, ships, and ground fixed and mobile platforms (Devices: KY-57/58, KY-99/100, KYV-5 and ARC-234 with Embedded Crypto).				
<p><b>FY 2014 Accomplishments:</b> VINSON (VHF(Very High Frequency)/UHF(Ultra High Frequency) Wideband Tactical Secure Voice System Cryptographic Equipment)-ANDVT (Advanced Narrowband Digital Voice Terminal) Cryptographic Modernization (VACM) completed engineering manufacturing and development phase. VACM received NSA Type 1 certification and MS C approval to initiate Low Rate Initial Production (LRIP) of 100 test units. ARC 234 continued modification development using VACM technology.</p> <p><b>FY 2015 Plans:</b> Complete production of 100 Low Rate Initial Production (LRIP) VINSON (VHF(Very High Frequency)/UHF(Ultra High Frequency) Wideband Tactical Secure Voice System Cryptographic Equipment)-ANDVT (Advanced Narrowband Digital Voice Terminal) Cryptographic Modernization (VACM) test units (to be delivered in FY15). Will complete Force Development Evaluation to test and evaluate the VACM devices. ARC 234 will complete the modification development using VACM technology.</p> <p><b>FY 2016 Plans:</b> N/A</p>				
<p><b>Title:</b> Space Telemetry Tracking &amp; Commanding (TT&amp;C) Aerospace Vehicle Equipment Increment 1 (AVE Inc1)</p> <p><b>Description:</b> Space Telemetry Tracking &amp; Commanding (TT&amp;C) Aerospace Vehicle Equipment Increment 1 (AVE Inc 1) develops and delivers space qualified cryptographic products to satellite platforms for securing the TT&amp;C link.</p> <p><b>FY 2014 Accomplishments:</b> Continued development activities on Space Telemetry Tracking &amp; Commanding (TT&amp;C) Aerospace Vehicle Equipment Increment 1 (AVE Inc1) CAROUSEL Cryptographic Engine (CCE) contract.</p> <p><b>FY 2015 Plans:</b> Continue development activities on Space TT&amp;C AVE Inc 1 CAROUSEL Cryptographic Engine (CCE) contract.</p> <p><b>FY 2016 Plans:</b> Will complete development activities on Space Telemetry Tracking &amp; Commanding (TT&amp;C) Aerospace Vehicle Equipment Increment 1 (AVE Inc1) CAROUSEL Cryptographic Engine (CCE) contract.</p>		4.083	7.340	5.321
<p><b>Title:</b> Technology Development (TD)</p> <p><b>Description:</b> Technology Development (TD) conducts concept development and early systems engineering activities to analyze evolving threats and Communications Security (COMSEC) capability gaps across AF mission areas. Develops, plans and executes foundational technology maturation efforts to inform COMSEC requirements, build capability roadmaps and support cost</p>		7.057	18.613	0.179

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>estimates prior to Materiel Development Decision (MDD). Mitigates risk for thousands of AF users affected by algorithm security issues and ensures required security upgrades can be integrated into the AF enterprise. Works with NSA and other services to develop standards that increase security of communication and information products and facilitate efficient crypto and COMSEC enterprise management. Includes but is not limited to: Secure Micro-digital Data Link (SMDDL), Classified Data at Rest (CDAR), Common Encryption Management (CEMENT), Distributed Common Ground System (DCGS) Crypto, Transmission Security (TRANSEC) modernization, and Enhanced Firefly (EFF) replacement development.</p> <p><b>FY 2014 Accomplishments:</b> Accomplished pre-MS B activities and continued development of common miniaturized cryptographic solution(s) for use in protecting Classified information on Size, Weight, and Power (SWaP) constrained platforms. Led adoption of baseline Common Crypto Management Information Base (CCMIB) identifying the framework for future common management of cryptographic devices amongst Army, Navy and Air Force. Analyzed Classified Data at Rest (CDAR) capability gaps across multiple AF weapon systems. Developed DCGS sustainment plan and initiated analysis to support cryptographic devices that allow AF Distributed Common Ground System (DCGS) to continue operating during and after a Communications Modernization from Asynchronous Transfer Mode (ATM) to the Next Generation Deterministic Protocol (NGDP). Began analysis of feasibility of common modular cryptographic solutions for the air and ground environment.</p> <p><b>FY 2015 Plans:</b> Complete SMDDL certification. Continue investigating classified Data At Rest solutions for tactical environments and complete capability gap and concept characterization analysis in preparation for MDD. Continue analyzing replacement of aging KG-75/75A legacy crypto in Air Force Distributed Common Ground System (DCGS AF). Continue planning replacement or upgrade of 150,000 Air Force devices that incorporate Enhanced Firefly (EFF) keying material. Continue development of Common Encryption Management (CEMENT) software for disparate families of Internet Protocol (IP) encryptors. Continue analysis of Transmission Security (TRANSEC) capability gaps and initiate concept characterization study to inform requirements refinement. Continue the analysis of common modular cryptographic solutions for the air and ground environment.</p> <p><b>FY 2016 Plans:</b> Will continue planning replacement or upgrade of 150,000 Air Force devices that incorporate EFF-based keying material. Will complete DCGS AF analysis in preparation for development and procurement effort to replace KG-75/75A. Will complete development of Common Encryption Management (CEMENT) software to manage Internet Protocol (IP) encryptors and develop standards for management of future devices. Will complete Transmission Security (TRANSEC) capability gap and concept characterization analysis in preparation for MDD.</p>				
<b>Title:</b> Distributed Common Ground System (DCGS) Crypto		-	-	1.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> Provides cryptography to support the rigorous speed and quality of service requirements of the AF DCGS global Intelligence, Surveillance, and Reconnaissance (ISR) Wide Area Network (WAN) Weapon System (AN/GSQ-272). AF DCGS is based on legacy Asynchronous Transfer Mode (ATM) technologies that are no longer available from manufacturers. DCGS crypto will develop and procure cryptographic devices that allow AF DCGS to continue operating during and after an AF DCGS Communications Modernization from ATM to the Next Generation Deterministic Protocol (NGDP).</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> N/A</p> <p><b>FY 2016 Plans:</b> Will begin development of cryptographic devices that allow AF DCGS to continue operating during and after a Communications Modernization from ATM to the NGDP.</p>			
<p><b>Title:</b> Mini Crypto (MC)</p> <p><b>Description:</b> Mini Crypto (MC) plans to develop common miniaturized cryptographic solution(s) for use in protecting Secret and Below information on Size, Weight, and Power (SWaP) constrained platforms.</p> <p><b>FY 2014 Accomplishments:</b> Released Request for Proposal (RFP) for the Engineering &amp; Manufacturing Development (EMD) phase contract with options for Production. Began a Full and Open Competitive Source Selection.</p> <p><b>FY 2015 Plans:</b> Will achieve MS B and will award/manage the EMD contract.</p> <p><b>FY 2016 Plans:</b> Will continue to execute the EMD contract. Contractor will host both a Preliminary Design and Critical Design Review (PDR &amp; CDR). Prototypes will be delivered for various Developmental Testing/Operational Testing activities in support of integrated testing.</p>	1.055	2.045	7.316
<p><b>Title:</b> Space Modular Common Crypto (SMCC)</p> <p><b>Description:</b> Space Modular Common Crypto (SMCC) provides Information Assurance (IA) services for new satellite architectures via a family of common crypto solutions that integrate Tracking, Telemetry, &amp; Commanding (TT&amp;C), Mission Data</p>	13.316	25.296	5.328

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>(MD), and/or Transmission Security (TRANSEC) key stream functions for the Air Force and Intelligence Community space systems.</p> <p><b>FY 2014 Accomplishments:</b> Continued pre-Milestone B and Technology Maturation/Risk Reduction (TMRR) activities for SMCC solutions.</p> <p><b>FY 2015 Plans:</b> Continue TMRR activities. Will achieve MS B and begin the process to award EMD contract.</p> <p><b>FY 2016 Plans:</b> Will complete TMRR activities. Award SMCC development contract.</p> <p><b>Title:</b> Algorithm Transition, Compliance and Support</p> <p><b>Description:</b> Algorithm Transition, Compliance and Support provides Information Assurance (IA) Support that performs transition and governance efforts to be able to effectively analyze 30 classified algorithms, thousands of associated COMSEC keying material short titles, and hundreds of equipment types, and track and report algorithm/device integration across the AF. Based on analysis, determines and monitors mitigation strategies; develops and plans technology maturation efforts to ensure new algorithms can be integrated into the AF enterprise. Assesses current state of AF crypto across the enterprise. Develops and maintains a classified CM database system that tracks status of AF crypto device types that is accessible by the Crypto Modernization (CM) community via SIPRNET. Efforts support Nuclear Command, Control and Communications (NC3), ISR, all AF platforms, and most ground networks.</p> <p><b>FY 2014 Accomplishments:</b> Started a program to develop a method and/or process to accurately transition, track, and manage crypto assets and COMSEC across the AF. Supported algorithm transition and governance efforts to effectively track, analyze, and report on AF use of 30 classified algorithms in over 270,000 devices across the AF enterprise comprised of over 300 equipment types/families and requiring thousands of associated COMSEC keying material short titles. Provided initial Crypto-Mod analysis database to AF community to assist in annual assessments during long term effort to develop enterprise capabilities based assessment (CBA) to identify management capability gaps. Conducted annual assessment of the state of the AF cryptographic enterprise. Evaluated impacts of the emerging NSA Commercial Solutions for Classified (CSfC) cryptographic development model and its impacts on AF acquisition and sustainment.</p> <p><b>FY 2015 Plans:</b> Continue to support algorithm transition and governance efforts to effectively track, analyze, and report on AF use of 30 classified algorithms in over 270,000 devices across the AF enterprise comprised of over 300 equipment types/families and requiring thousands of associated COMSEC keying material short titles. Continues analysis and development of a method and/or process</p>		1.881	3.250	3.109

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>to accurately transition, track, and manage crypto assets and COMSEC across the AF. Maintain Crypto-Mod analysis database to AF community to assist in annual assessments during long term effort to develop enterprise Capabilities Based Assessment (CBA) to identify management capability gaps. Conducts annual assessment of the state of the AF cryptographic enterprise. Evaluate National Security Agency (NSA) recommendations for Quantum Resistant (QR) computing encryption.</p> <p><b>FY 2016 Plans:</b> Will continue to support algorithm transition and governance efforts to effectively track, analyze, and report on AF use of 30 classified algorithms in over 270,000 devices across the AF enterprise comprised of over 300 equipment types/families and requiring thousands of associated COMSEC keying material short titles. Will continue analysis and development of a method and/or process to accurately transition, track, and manage crypto assets and COMSEC across the AF. Will continue to maintain Crypto-Mod analysis database to AF community to assist in annual assessments during long term effort to develop enterprise Capabilities Based Assessment (CBA) to identify management capability gaps. Will conduct annual assessment of the state of the AF cryptographic enterprise. Will continue to evaluate National Security Agency (NSA) recommendations for Quantum Resistant(QR)computing encryption.</p>			
<p><b>Title:</b> Missile Electronic Encryption Device (MEED) Modification</p> <p><b>Description:</b> MEED was formerly accomplished under the Technical Development Major Thrust as a Crypto Mod activity. To increase program transparency MEED will become an acquisition effort.</p> <p>MEED Modification will modernize the legacy Missile Entry Control System (MECS) devices used to securely authenticate personnel attempting access to this Nation's ground-based Intercontinental Ballistic Missile (ICBM) facilities. This effort will bring the MEED equipment into compliance with current NSA information assurance (IA) security design guidance.</p> <p><b>FY 2014 Accomplishments:</b> Continued MEED Modification development and accomplished Material Development Decision (MDD) and Acquisition Strategy Plan (ASP). Program team consists of PMA support for Subject Matter Experts (SMEs) in security, logistics, financial management, and data management. Funded travel for engineering and testing to F.E. Warren to bolster understanding of Missile Entry Control System (MECS) and process MEED performs in that system. Also garnered user and industry feedback on potential solutions.</p> <p><b>FY 2015 Plans:</b> Initiate MEED Modification Development Decision, complete Source Selection and award contract for development of Modified MEED.</p> <p><b>FY 2016 Plans:</b></p>	0.300	2.289	6.815

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Will continue MEED Modification development contract and preparation for production decision in FY17. Will complete Developmental Testing and Operational Testing of modified device and release RFP for production contract.			
<b>Accomplishments/Planned Programs Subtotals</b>	53.930	59.773	29.068

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF: BA03: 831010: <i>COMSEC Equipment</i>	14.686	37.960	28.074	-	28.074	11.426	25.660	24.905	25.353	Continuing	Continuing

**Remarks**  
Remarks: Other Program Funding reflects Crypto Modernization (CM) portion of Information Systems Security Program (ISSP) OPAF total.

**D. Acquisition Strategy**  
The Crypto Modernization portfolio of component acquisition projects is executing using a variety of approaches that vary from an evolutionary acquisition strategy using spiral development (for new component development) to incremental improvement leveraging leading-edge, certified non-developmental items (for modernization). Contract type is selected for each of the individual projects based upon its acquisition approach and its unique technology risks. A mixture of fixed-price and cost-reimbursement contracts have been selected which maximize the best value for the Government.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
VINSON/ANDVT Cryptographic Modernization (VACM)	C/CPIF	Raytheon Company : Ft Wayne, IN	-	12.799	May 2014	-		-		-		-	-	12.799	47.863
VINSON/ANDVT/ Cryptographic Modernization (ARC-234)	MIPR	Defense Microelectronic Activity : Sacramento, CA	-	10.044	Jan 2015	-		-		-		-	-	10.044	32.737
Space Telemetry, Tracking & Commanding (TT&C) Aerospace Vehicle Equipment (AVE Inc 1)	C/CPFF	General Dynamics C4 Systems : Scottsdale, AZ	-	3.140	Feb 2014	6.081	Oct 2014	4.036	Oct 2015	-		4.036	Continuing	Continuing	-
Tech Development	Various	MULTIPLE : MULTIPLE,	-	5.137	Sep 2014	18.398	Jan 2015	0.179	Jan 2016	-		0.179	Continuing	Continuing	-
Mini Crypto	C/TBD	TBD : TBD,	-	-		0.831	Jul 2015	4.870	Dec 2015	-		4.870	Continuing	Continuing	-
Space Modular Common Crypto (SMCC)	C/TBD	MULTIPLE : MULTIPLE,	-	8.817	Jul 2014	19.696	Nov 2014	0.462	Sep 2016	-		0.462	Continuing	Continuing	-
Distributed Common Ground System (DCGS) Crypto	TBD	TBD : TBD,	-	-		-		1.000	Jul 2016	-		1.000	Continuing	Continuing	-
Missile Electronic Encryption Device (MEED) Modernization	Various	TBD : TBD,	-	-		1.220	May 2015	5.241	May 2016	-		5.241	Continuing	Continuing	-
<b>Subtotal</b>			-	39.937		46.226		15.788		-		15.788	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
VINSON/ANDVT Cryptographic Modernization (VACM)	Various	VARIOUS : VARIOUS,	-	0.489	May 2014	0.051	Nov 2014	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.489		0.051		-		-		-	-	-	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
VINSON/ANDVT Crypto Mod (VACM)	MIPR	MULTIPLE : MULTIPLE,	-	0.572	Nov 2013	0.091	Dec 2014	-		-		-	-	0.663	5.001
VINSON/ANDVT Crypto Mod-Embedded (ARC-234)	MIPR	NSA : ,	-	0.198	Nov 2014	-		-		-		-	-	0.198	0.610
Space Telemetry, Tracking & Commanding (TT&C) Aerospace Vehicle Equipment Increment 1 (AVE Inc 1)	Various	MULTIPLE : MULTIPLE,	-	0.263	Mar 2014	0.519	Oct 2014	0.526	Oct 2015	-		0.526	-	1.308	-
Mini Crypto	Various	MULTIPLE : MULTIPLE,	-	0.150	Sep 2014	0.574	Jan 2015	0.700	Jan 2016	-		0.700	Continuing	Continuing	-
Space Modular Common Crypto (SMCC)	Various	MULTIPLE : MULTIPLE,	-	0.473	Mar 2014	1.767	Jan 2015	1.019	Oct 2015	-		1.019	Continuing	Continuing	-
<b>Subtotal</b>			-	1.656		2.951		2.245		-		2.245	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	Various	Various : Various,	-	11.848	Dec 2013	10.545	Dec 2014	11.035	Dec 2015	-		11.035	Continuing	Continuing	-
<b>Subtotal</b>			-	11.848		10.545		11.035		-		11.035	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		-	53.930	59.773	29.068	-	-	29.068	-

**Remarks**





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
VINSON/ANDVT Cryptographic Modernization (VACM)	1	2014	3	2014
Space Telemetry Tracking and Commanding (TT&C) Aerospace Vehicle Equipment Increment 1 (AVE Inc 1)	1	2014	2	2016
Space Modular Common Crypto (SMCC)	1	2014	3	2019
Mini Crypto	1	2014	3	2017
Algorithm Transition, Compliance and Support	1	2014	4	2020
Technology Development	1	2014	4	2020
Missile Electronic Encryption Device (MEED) Modernization	1	2014	4	2017
Distributed Common Ground System (DCGS)	1	2016	4	2020

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>				<b>Project (Number/Name)</b> 675231 / <i>AF Key Management Infrastructure (AF KMI)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675231: <i>AF Key Management Infrastructure (AF KMI)</i>	-	5.764	9.362	16.898	-	16.898	2.996	1.746	1.767	1.798	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Air Force Key Management Infrastructure (AF KMI) Program consists of multiple developments supporting the AF requirements/portion of the DoD Key Management Infrastructure (KMI). The National Security Agency (NSA) acts as the Executive Agency for the DoD KMI Program. AF KMI, in concert with this overarching DoD KMI Program, will provide a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material and other communications security (COMSEC) materials for all DoD Command, Control, Communications, Computers, and Intelligence (C4I) and for the Services' weapon systems. KMI represents a broad-scale replacement of the current Electronic Key Management System (EKMS). KMI will provide capabilities that will allow networked operation in consonance with the Global Information Grid (GIG) and other DoD, fellow Service, and AF enterprise objectives. It thereby will assure a viable support infrastructure for future weapons and C4I programs to incorporate key management into their system designs.

The DoD KMI will greatly improve protection of national, security-related information by substantially enhancing confidentiality, integrity, and non-repudiation characteristics over the legacy EKMS. KMI will greatly accelerate the availability of crypto key materials through electronic transmission versus shipping of materials, will enhance mission responsiveness and flexibility, and will eventually take the man "out-of-the-loop" in the distribution of crypto key materials.

The AF KMI Program in concert with the DoD KMI Program is transitioning the Air Force from the legacy EKMS to modern DoD KMI and building the AF KMI Last Mile architecture. This R&D effort includes system engineering, development and testing to successfully implement the AF KMI Last Mile architecture. The AF KMI Last Mile program is a holistic solution integrating the legacy and new and evolving cryptographic programs, materials, products, sources and consumers. The AF KMI Last Mile capabilities include distribution, management, and load of cryptographic materials from the KMI (COMSEC account) to the End Crypto Units (ECUs). It builds the linkage interfaces that will allow KMI systems to communicate and integrates other related developments to meet operational needs. AF KMI Last Mile is currently in the Development Phase. Activities also include studies and analysis to support both current program planning and execution and future program planning.

In parallel with AF KMI, DoD and the Services are developing a new generation of End Crypto Units (ECUs) under the Joint Crypto Modernization Initiative that will be capable of direct interaction with the DoD KMI. (PE0303140F, BPAC 675100, Cryptographic Modernization, supports this initiative). In some cases these new ECUs, although needing to be supported by KMI, will not be KMI network-connected. "Last mile" transport of black (aka benign, or encrypted) and red (unencrypted) keying material from a KMI client to a new generation ECU or current legacy ECU will need to be handled in the early years by one of two data transfer devices. Initial early systems engineering must also be addressed to accommodate future connectivity between the DoD KMI and future KMI Aware/Enabled ECUs. This enabling form factor functionally defined as a common ECU KMI aware/enabled key load module. This is targeted to be a standardized module to be provided to ECU developers and, as such, it must precede any future ECU developments.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675231 / <i>AF Key Management Infrastructure (AF KMI)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> Air Force Key Management Infrastructure Transition Support (Tier 2)</p> <p><b>Description:</b> Support included architectural planning, systems engineering, testing and studies and analyses for migration to the Key Management Infrastructure (KMI) (includes acquisition planning, systems integration, engineering support and System Program Office (SPO) support). Transitioned existing key management capabilities to AF KMI Tier 2.</p> <p><b>FY 2014 Accomplishments:</b> Continued architectural planning, systems engineering, in support of KMI CI-2 Spiral 2 Spin 1. Continued support testing of DoD KMI CI-2 components as new hardware/software versions were completed. Continued the transition of existing key management capabilities to KMI.</p> <p><b>FY 2015 Plans:</b> Continue to provide annual resources to SPAWAR to plan and execute specific UAS testing for all Air Force ECUs.</p> <p><b>FY 2016 Plans:</b> Will continue to provide annual resources to SPAWAR to plan and execute specific UAS testing for all Air Force ECUs.</p>		1.221	-	-
<p><b>Title:</b> Air Force KMI Last Mile (Tier 3)</p> <p><b>Description:</b> Air Force KMI Last Mile Tier 3 early system engineering and risk reduction to include: concept development; for distribution, load and management elements of last mile; studies and analyses for technology possibilities and prototyping efforts for the last mile.</p> <p><b>FY 2014 Accomplishments:</b> Executed the Technology Development contract, developed requirements for the Engineering and Manufacturing Development (EMD) phase and finalized the associated Milestone B (MS B) documentation.</p> <p><b>FY 2015 Plans:</b> Achieve MS B and award/manage the EMD contract</p> <p><b>FY 2016 Plans:</b> Will continue to manage the EMD contract and begin preparations to award/enter the production phase</p>		4.543	9.362	16.898
<b>Accomplishments/Planned Programs Subtotals</b>		5.764	9.362	16.898

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675231 / <i>AF Key Management Infrastructure (AF KMI)</i>

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• OPAF: BA03: 831010: <i>COMSEC Equipment</i>	10.390	14.457	10.132	-	10.132	12.104	4.871	4.921	5.010	Continuing	Continuing

**Remarks**

Remarks: Other Program Funding reflects AF Key Management Infrastructure (KMI) portion of Information Systems Security Program (ISSP) OPAF total.

**D. Acquisition Strategy**

All major contracts within this project are open to full and open competition with technology knowledge, expertise, and prior experience on similar projects weighted heavily in the evaluation process.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675231 / <i>AF Key Management Infrastructure (AF KMI)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	SS/T&M	MITRE : San Antonio, TX	-	0.443	Oct 2013	0.354	Oct 2014	0.737	Oct 2015	-		0.737	Continuing	Continuing	-
AF KMI Last Mile	C/Various	Various : Various,	-	0.918	Sep 2014	6.010	Jun 2015	13.238	Jun 2016	-		13.238	Continuing	Continuing	TBD
AF KMI Transition	C/Various	Various : Various,	-	1.221	Feb 2014	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	2.582		6.364		13.975		-		13.975	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering & Technical Documentation	SS/T&M	MITRE : San Antonio, TX	-	0.463	Oct 2013	1.037	Oct 2014	1.217	Oct 2015	-		1.217	Continuing	Continuing	-
Engineering & Technical Acquisition Support Service	C/CPFF	Jacobs Engineering : San Antonio, TX	-	0.828	Jan 2014	1.004	Jan 2015	0.759	Jan 2016	-		0.759	Continuing	Continuing	TBD
AF KMI Transition Support (Tier 2)	MIPR	U.S. Navy SPAWAR : San Diego, CA	-	1.000	Aug 2014	-		-		-		-	Continuing	Continuing	-
AF KMI Last Mile (Tier 3)	MIPR	U.S. Navy SPAWAR : San Diego, CA	-	-		0.100	Jan 2015	0.100	Mar 2016	-		0.100	Continuing	Continuing	-
<b>Subtotal</b>			-	2.291		2.141		2.076		-		2.076	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
KMI Last Mile	PO	46 TS : Eglin AFB, FL	-	0.198	Jun 2014	0.246	Nov 2014	0.246	Nov 2015	-		0.246	Continuing	Continuing	-
<b>Subtotal</b>			-	0.198		0.246		0.246		-		0.246	-	-	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675231 / <i>AF Key Management Infrastructure (AF KMI)</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

Architectural Planning, System Engineering and Key Management Transition Support	[REDACTED]																											
AF KMI Last Mile	[REDACTED]																											



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675231 / <i>AF Key Management Infrastructure (AF KMI)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Architectural Planning, System Engineering and Key Management Transition Support	1	2014	4	2019
AF KMI Last Mile	1	2014	3	2017

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	0.725	0.692	-	-	-	0.159	0.106	-	-	Continuing	Continuing
675046: <i>Systems Engineering &amp; Integration</i>	-	0.725	0.692	-	-	-	-	-	-	-	Continuing	Continuing
676027: <i>Global Force Mgt Initiative</i>	-	-	-	-	-	-	0.159	0.106	-	-	Continuing	Continuing

**Note**

In FY2016, components of project number 675046, Systems Engineering & Integration, efforts were transferred from PE 0303141F, Global Combat Support Systems (GCSS) to Program B02000 Global Force Management, PE 0303142F, Global Force Management - Data Initiative (GFM-DI) in order to provide better visibility of costs associated with GFM-DI.

In FY2015, project number 675046 Systems Engineering & Integration, efforts were transferred from PE 0303141F, Global Combat Support Systems (GCSS) to project number 66ACSI, Acquisition and Command Support (ACSI), PE 0308602F, Enterprise Information Services (EIS), in order to provide better visibility of costs associated with evolution to a Cloud Computing Environment (CCE) now called Common Computing Environment (CCE).

In FY2015 efforts in project 675046, Systems Engineering and Integration, will complete.

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

Global Combat Support System-Air Force (GCSS-AF) provides the warfighter and supporting elements with timely, accurate, and trusted Agile Combat Support (ACS) information. This information will have the appropriate level of security needed for the Air Expeditionary Forces (AEF) to execute the Air Force mission throughout the full spectrum of military operations. The GCSS-AF program modernizes, consolidates, develops, and integrates Air Force and Department of Defense combat support information systems.

The infrastructure and provided Air Force enterprise common services are a critical basis for the target common computing environment (CCE) effort which Air Force Guidance Memorandum has directed for all new and modernizing IT applications. This effort is the Air Force evolution to DoD Joint Information Environment (JIE) leveraging Core Data Centers (CDCs) and DISA-brokered cloud capabilities in compliance with the Air Force Information Technology (AF IT) baselines. This framework is a set of baseline-driven platform and infrastructure services in both physical and virtual hosting environments. It is comprised of development tools, an initial set of enterprise services, and governance processes critical to JIE management.

This system is implemented and sustained worldwide and supports both wartime and peacetime requirements using hardware, software, and communications capabilities available from standard open systems government contracts and communications infrastructure programs. In this manner, GCSS-AF avoids added costs, removes business processing inefficiencies, reduces deployment footprint, and improves the speed with which information flows.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>
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Activities also include capability development of an automated risk management framework to assess and mitigate cyber and other threats to Air Force information technology and mission assets. This capability eliminates stove pipes and provides commanders with better situational awareness of vulnerabilities. Additionally, this capability promotes efficiency and sound resource allocation by enabling commanders to make better decisions when selecting risk reduction counter measures.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	0.725	0.692	0.662	-	0.662
Current President's Budget	0.725	0.692	-	-	-
Total Adjustments	-	-	-0.662	-	-0.662
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.662	-	-0.662

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>				<b>Project (Number/Name)</b> 675046 / <i>Systems Engineering &amp; Integration</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675046: <i>Systems Engineering &amp; Integration</i>	-	0.725	0.692	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY2016, components of project number 675046, Systems Engineering & Integration, efforts were transferred from PE 0303141F, Global Combat Support Systems (GCSS) to Program B02000 Global Force Management, PE 0303142F, Global Force Management - Data Initiative (GFM-DI) in order to provide better visibility of costs associated with GFM-DI.

In FY2015, project number 675046 Systems Engineering & Integration, efforts were transferred from PE 0303141F, Global Combat Support Systems (GCSS) to project number 66ACSI, Acquisition and Command Support (ACSI), PE 0308602F, Enterprise Information Services (EIS), in order to provide better visibility of costs associated with evolution to a Cloud Computing Environment (CCE) now called Common Computing Environment (CCE).

In FY2015 efforts in project 675046, Systems Engineering and Integration, will complete.

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

Global Combat Support System-Air Force (GCSS-AF) provides the warfighter and supporting elements with timely, accurate, and trusted Agile Combat Support (ACS) information. This information will have the appropriate level of security needed for the Air Expeditionary Forces (AEF) to execute the Air Force mission throughout the full spectrum of military operations. The GCSS-AF program modernizes, consolidates, develops, and integrates Air Force and Department of Defense combat support information systems.

The infrastructure and provided Air Force enterprise common services are a critical basis for the target common computing environment (CCE) effort which Air Force Guidance Memorandum has directed for all new and modernizing IT applications. This effort is the Air Force evolution to DoD Joint Information Environment (JIE) leveraging Core Data Centers (CDCs) and DISA-brokered cloud capabilities in compliance with the Air Force Information Technology (AF IT) baselines. This framework is a set of baseline-driven platform and infrastructure services in both physical and virtual hosting environments. It is comprised of development tools, an initial set of enterprise services, and governance processes critical to JIE management.

This system is implemented and sustained worldwide and supports both wartime and peacetime requirements using hardware, software, and communications capabilities available from standard open systems government contracts and communications infrastructure programs. In this manner, GCSS-AF avoids added costs, removes business processing inefficiencies, reduces deployment footprint, and improves the speed with which information flows.

Activities also include Enterprise Protection Risk Management (EPRM), a capability development of an automated risk management framework to assess and mitigate cyber and other threats to Air Force information technology and mission assets. This capability eliminates stove pipes and provides commanders with better situational

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>	<b>Project (Number/Name)</b> 675046 / <i>Systems Engineering &amp; Integration</i>
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awareness of vulnerabilities. Additionally, this capability promotes efficiency and sound resource allocation by enabling commanders to make better decisions when selecting risk reduction counter measures.

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 2014	FY 2015	FY 2016
<b>Title:</b> Develop Enterprise Protection Risk Management (EPRM)	0.725	0.692	-
<b>Description:</b> Enterprise Protection Risk Management (EPRM) is an automated and standardized risk management application designed to support the Defense Security Enterprise in mitigating security risks to Air Force assets. EPRM addresses cyber, physical, information, industrial security, as well as program protection planning. EPRM prioritizes Courses of Action (COAs) for relative value to protect multiple assets from multiple threat tactics, techniques, and procedures. EPRM received certification and accreditation and hosting was established at DISA. Also, the Defense Business Council reviewed EPRM for Business Enterprise Architecture compliance and certified FY 13 and FY 14 expenditures.			
<b>FY 2014 Accomplishments:</b> Based on Alpha Test results, AFMC requested immediate deployment of EPRM for operational test and evaluation. EPRM was fielded at Wright-Patterson and Hanscom AFB's. EPRM is also being rolled out to AFRC and USAFE and training has been developed to support roll-out to additional MAJCOMs. Joint Staff recommended the Joint Staff Integrated Vulnerability Assessment (JSIVA) Benchmarks be included in EPRM and work has begun to incorporate the benchmarks in EPRM. EPRM's Operations Security Risk Assessment module was made available for use across the Department of Defense.			
<b>FY 2015 Plans:</b> Continue production of EPRM including roll-out, testing, and software enhancement to remaining MAJCOMs. Complete addition of JSIVA benchmarks. Incorporate Insider Threat mitigation countermeasures to improve risk analysis.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.725	0.692	-

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u> <u>Continuing</u>
• OPAF: BA07: Line Item # 834330: GCSS-AF FoS	3.038	-	-	-	-	-	-	-	-	-	Continuing

**Remarks**

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>	<b>Project (Number/Name)</b> 675046 / <i>Systems Engineering &amp; Integration</i>

**D. Acquisition Strategy**

EPRM RDT&E funding will be placed on cost-plus-fixed fee contract to support continued development and enhancement of COTS software. Alion Science and Technology is the prime contractor. Contract No.: SP0700-99-D-03010260

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>	<b>Project (Number/Name)</b> 675046 / <i>Systems Engineering &amp; Integration</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Develop Enterprise Protection Risk Management (EPRM)	C/CPFF	Alion Science and Technology : Alexandria, VA	-	0.725	Jan 2014	0.692	Jan 2014	-	Jan 2015	-		-	Continuing	Continuing	TBD
<b>Subtotal</b>			-	0.725		0.692		-		-		-	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	Various	VARIOUS : VARIOUS,	-	-		-		-		-		-	Continuing	Continuing	TBD
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	0.725	0.692	-	-	-	-	-	-

**Remarks**  
None.



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>	<b>Project (Number/Name)</b> 675046 / <i>Systems Engineering &amp; Integration</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

EPRM Production	[REDACTED]																											
Test	[REDACTED]												[REDACTED]															
EPRM Testing	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>	<b>Project (Number/Name)</b> 675046 / <i>Systems Engineering &amp; Integration</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EPRM Production	1	2014	4	2016
Test	1	2017	1	2018
EPRM Testing	1	2014	4	2016

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>	<b>Project (Number/Name)</b> 676027 / <i>Global Force Mgt Initiative</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
676027: <i>Global Force Mgt Initiative</i>	-	-	-	-	-	-	0.159	0.106	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Mission Description not provided.

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> No data provided	-	-	-
<b>FY 2014 Accomplishments:</b> No data provided			
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	-

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>	<b>Project (Number/Name)</b> 676027 / <i>Global Force Mgt Initiative</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	-	-	-	-	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>	<b>Project (Number/Name)</b> 676027 / <i>Global Force Mgt Initiative</i>

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

EPRM Production and Testing	[REDACTED]																											
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303141F / <i>Global Combat Support System</i>	<b>Project (Number/Name)</b> 676027 / <i>Global Force Mgt Initiative</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EPRM Production and Testing	1	2017	2	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303142F / <i>Global Force Management - Data Initiative</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	-	-	2.470	-	2.470	2.120	2.162	2.206	2.246	Continuing	Continuing
676027: <i>Global Force Mgt Initiative</i>	-	-	-	2.470	-	2.470	2.120	2.162	2.206	2.246	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY2016, components of project number 675046, Systems Engineering & Integration, efforts were transferred from PE 0303141F, Global Combat Support Systems (GCSS) to Program B02000 Global Force Management, PE 0303142F, Global Force Management - Data Initiative (GFM-DI) in order to provide better visibility of costs associated with GFM-DI.

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

The Global Force Management Data Initiative (GFM DI) is a Joint Staff and OSD initiative designed to standardize component force structure representations, making them visible, accessible, and understandable across the Department of Defense (DoD). Unique identifiers associate billets, crews, equipment, and chain of command links, enabling electronic manipulation and operational planning across multiple systems.

Through establishment of an information exchange data standard, GFM DI enables DoD systems to exchange force structure data in a common format while exploiting the net-centric data 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>B. Program Change Summary (\$ in Millions)</b>	<b><u>FY 2014</u></b>	<b><u>FY 2015</u></b>	<b><u>FY 2016 Base</u></b>	<b><u>FY 2016 OCO</u></b>	<b><u>FY 2016 Total</u></b>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	2.470	-	2.470
Total Adjustments	-	-	2.470	-	2.470
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	2.470	-	2.470

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303142F / <i>Global Force Management - Data Initiative</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Global Force Management - Data Initiative  <b>Description:</b> The GFM-DI is a combination of net-centric services designed to provide access to information on the operational availability of USAF forces and equipment. GFM-DI is part of a Joint GFM, (each service has a GFM-DI), directed by OSD and the JCS.  <b>FY 2016 Plans:</b> FY16 GFM-DI AFOS development efforts will implement the requirements set forth in the Air Force Implementation Plan for the Global Force Management Data Initiative Manpower & Personnel Capability Description Document. The primary goal of this effort is to link authorized manpower authorizations (identified by their GFM DI OUIDs) to on-hand personnel (identified by their DoD ID Numbers (formerly known as EDIPs)). This will be accomplished through development of interfaces to feeder systems.	-	-	2.470
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	2.470

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• NA: NA	-	-	-	-	-	-	-	-	-	-	-

**Remarks**

**E. Acquisition Strategy**  
 The program objective is to provide the capability to link force management, personnel, finance, logistics, readiness, planning and other systems to provide an integrated view of the Air Force. This enables senior decision makers to better manage the forces, determine requirements, and justify resources. The GFM-DI AFOS is being developed incrementally in accordance with the concepts outlined in the Joint Planning Guide (JPG) VII.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303142F / Global Force Management - Data Initiative	<b>Project (Number/Name)</b> 676027 / Global Force Mgt Initiative
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
GFM-DI AFOS Increment II Development	C/FFP	TBD ; ,	-	-		-		2.470	Mar 2016	-		2.470	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		2.470		-		2.470	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	-	-	2.470	-	-	2.470	-	-	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303142F / <i>Global Force Management - Data Initiative</i>	<b>Project (Number/Name)</b> 676027 / <i>Global Force Mgt Initiative</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Request for Proposal Development / Release									■																			
Source Selection										■																		
Contract Award											■																	
Increment II Development													■	■	■	■												
Increment II Quality Test and Evaluation																	■	■										
Increment II FOC																					■	■						
Increment III Requirements Gathering																									■	■		
Increment III Development																												
Increment III Quality Test & Evaluation																												
Increment III FOC																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303142F / <i>Global Force Management - Data Initiative</i>	<b>Project (Number/Name)</b> 676027 / <i>Global Force Mgt Initiative</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Request for Proposal Development / Release	1	2016	1	2016
Source Selection	2	2016	2	2016
Contract Award	3	2016	3	2016
Increment II Development	4	2016	1	2018
Increment II Quality Test and Evaluation	1	2018	2	2018
Increment II FOC	2	2018	3	2018
Increment III Requirements Gathering	2	2018	3	2018
Increment III Development	3	2018	3	2019
Increment III Quality Test & Evaluation	3	2019	4	2019
Increment III FOC	4	2019	1	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303601F / MILSATCOM Terminals
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COST (\$ in Millions)	Prior Years <sup>(+)</sup>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	2,035.495	125.924	54.678	-	-	-	-	-	-	-	Continuing	Continuing
672490: <i>Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)</i>	0.000	125.924	54.678	-	-	-	-	-	-	-	Continuing	Continuing

**MDAP/MAIS Code:** 199

<sup>(+)</sup> The sum of all Prior Years is \$2035.495 million less than the represented total due to several projects ending

**Note**

In FY2016, PE 0303601F, MILSATCOM Terminals, Project 672490, Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) was transferred to PE 0303001F, FAB-T, Project 672490 FAB-T for improved visibility of ACAT I programs.

FAB-T was funded FY13 and prior in PE 0303601F, Project Number 672487 and Project Number 672489. In FY14 it was transferred to Project Number 672490 in the same PE.

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

The Military Satellite Communications (MILSATCOM) terminals program develops and fields equipment enabling users to communicate via legacy and future systems to include Milstar, Advanced Extremely High Frequency (AEHF), Ultra High Frequency (UHF) Follow-On (UFO), Wideband Global SATCOM (WGS), Defense Satellite Communication System (DSCS), Enhanced Polar Systems (EPS), and other military and commercial satellites, to support tactical Air and Space Expeditionary Force requirements and maintain essential connectivity for strategic forces. Program RDT&E currently includes the following efforts:

- 1) Development work to identify commercial/military technology solutions to improve MILSATCOM terminal capabilities for the warfighters. Focus includes, but is not limited to, increasing throughput, facilitating sustainability, reducing footprint on existing user platforms and future concept terminals to provide more resilient and/or higher data rate satellite communications to warfighters.
- 2) The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program replaces legacy Milstar Command Post Terminals (CPT) and will provide Extremely High Frequency (EHF), protected high data rate communication for nuclear and conventional forces to include Presidential National Voice Conferencing (PNVC). FAB-T will provide this new, highly secure, state-of-the-art capability for DoD platforms to include strategic platforms and airborne/ground command posts via Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FAB-T terminals will also support the critical command and control (C2) of the Milstar, AEHF, and EPS satellite constellations. In FY15, the Air Force continued development of the FAB-T terminal.
- 3) The Joint Terminal Engineering Office (JTEO) provides tri-service coordination of terminal development, acquisition and fielding activities.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303601F / MILSATCOM Terminals
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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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	129.829	55.208	3.933	-	3.933
Current President's Budget	125.924	54.678	-	-	-
Total Adjustments	-3.905	-0.530	-3.933	-	-3.933
• Congressional General Reductions	-	-0.530			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.905	-			
• Other Adjustments	-	-	-3.933	-	-3.933

**Change Summary Explanation**

In FY16 FAB-T was transferred from PE 0303601F, MILSATCOM Terminals, Project 672490, Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) to PE 0303001F, Family of Advanced Beyond Line-of-Sight Terminals, Project 672490 for improved visibility.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0303601F / MILSATCOM Terminals				<b>Project (Number/Name)</b> 672490 / Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
672490: Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)	-	125.924	54.678	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY2016, PE 0303601F, MILSATCOM Terminals, Project 672490, Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) was transferred to PE 0303001F, FAB-T, Project 672490 FAB-T for improved visibility of ACAT I programs.

FAB-T was funded FY13 and prior in PE 0303601F, Project Number 672487 and Project Number 672489. In FY14 it was transferred to Project Number 672490 in the same PE.

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

The Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) program replaces legacy Milstar Command Post Terminals (CPT) and will provide Extremely High Frequency (EHF), protected high data rate communication for nuclear and conventional forces to include Presidential National Voice Conferencing (PNVC). FAB-T will provide this new, highly secure, state-of-the-art capability for DoD platforms to include strategic platforms and airborne/ground command posts via Milstar, AEHF, and Enhanced Polar System (EPS) satellites. FAB-T terminals will also support the critical command and control (C2) of the Milstar, AEHF, and EPS satellite constellations.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> FAB-T Development	125.924	54.678	-
<b>Description:</b> The FAB-T program will provide EHF voice and data MILSATCOM for nuclear and conventional forces as well as airborne and ground command posts with connectivity to Milstar, AEHF, and EPS satellites.			
<b>FY 2014 Accomplishments:</b> Government completed close out of Boeing development CLINs. AF down-selected Raytheon as Prime Contractor for production, June 2014. Raytheon continued development of the FAB-T Terminal, and continued functional and qualification testing and initial Engineering Development Model (EDM) deliveries.			
<b>FY 2015 Plans:</b> Raytheon continued development activities, and completed Functional Configuration Audit (FCA)/ Physical Configuration Audit (PCA), and Engineering Development Model (EDM) deliveries to support government Milestone C decision.			
<b>Accomplishments/Planned Programs Subtotals</b>	125.924	54.678	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303601F / MILSATCOM Terminals	<b>Project (Number/Name)</b> 672490 / Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)

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

Line Item	FY 2014	FY 2015	FY 2016	FY 2016	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Cost To	
			Base	OCO	Total					Complete	Total Cost
• APAF: BA05, OTHACF: <i>Other Aircraft</i>	1.920	32.106	-	-	-	-	-	-	-	Continuing	Continuing
• OPAF: BA03, 836700: <i>MILSATCOM Space</i>	105.674	60.230	-	-	-	-	-	-	-	Continuing	Continuing
• OPAF: BA05, 86190A: <i>Spares and Repair Parts</i>	-	12.112	-	-	-	-	-	-	-	Continuing	Continuing
• APAF: BA05: <i>FBLOST</i>	-	21.784	-	-	-	-	-	-	-	Continuing	Continuing
• APAF: BA06: <i>Aircraft Spares and Repair Parts</i>	-	5.540	-	-	-	-	-	-	-	Continuing	Continuing

**Remarks**

Other program funding listed in FY14-15 is only for the FAB-T program. In FY16, all of the listed Other Program Funding in PE 030601F will transfer to PE 0303001F.

**D. Acquisition Strategy**

In September 2002 the program office awarded Boeing the System Development and Demonstration (SDD) Cost Plus Award Fee (CPAF) contract; in April 2012 the contract was converted to a Firm Fixed Price (FFP). In 2012 the government introduced competition into the acquisition strategy to reduce risk in delivering this capability as well as to drive down production costs. In September 2012 the program office awarded a System Development and Demonstration (SDD) contract to Raytheon, Firm Fixed Price (FFP). To ensure best value to the government, the Air Force awarded production contracts in September 2013 to both contractors (Boeing and Raytheon). The production contracts began with production planning for both contractors. In June 2014, the Air Force down-selected to Raytheon for development and production of FAB-T Command Post Terminals. Production contract options to produce CPT terminals will be exercised after a successful Milestone C.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303601F / MILSATCOM Terminals	<b>Project (Number/Name)</b> 672490 / Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
FAB-T Development (Prior down-select)	C/FFP	Boeing : Huntington Beach, CA	0.000	12.536	Oct 2013	-		-		-		-	-	12.536	-
FAB-T Development	C/FFP	Raytheon : Marlborough, MA	0.000	83.010	Oct 2013	29.493	Oct 2014	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			0.000	95.546		29.493		-		-		-	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering DMS (FFRDC)	SS/CPAF	MITRE : Bedford, MA	0.000	4.079	Oct 2013	5.283	Oct 2014	-		-		-	Continuing	Continuing	-
GFE	MIPR	Various : Various,	0.000	0.290	Oct 2013	0.300	Oct 2014	-		-		-	Continuing	Continuing	-
Engineering DMS	MIPR	Linquest : El Segundo, CA	0.000	1.447	Nov 2013	1.000	Nov 2014	-		-		-	Continuing	Continuing	-
SW Engineering DMS (FFRDC)	SS/CPAF	SEI : Pittsburgh, PA	0.000	0.200	Oct 2013	0.200	Dec 2014	-		-		-	Continuing	Continuing	-
Crypto Support	MIPR	NSA : Ft Meade, MD	0.000	1.392	Oct 2013	1.433	Oct 2014	-		-		-	Continuing	Continuing	-
SATSIM	SS/TBD	MIT Lincoln Labs : Lexington, MA	0.000	3.025	Dec 2013	1.050	Oct 2014	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			0.000	10.433		9.266		-		-		-	-	-	-

**Remarks**  
SATSIM contract is Cost Reimbursable, it is not in drop-down menu.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Test & RTO Support	Various	Various : Various,	0.000	1.902	Oct 2013	1.400	Oct 2014	-		-		-	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303601F / MILSATCOM Terminals	<b>Project (Number/Name)</b> 672490 / Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Test Support	SS/CPAF	MIT/LL : Bedford, MA	0.000	8.800	Nov 2013	7.000	Oct 2014	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			0.000	10.702		8.400		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering Support	SS/CPAF	MITRE : Bedford, MA	0.000	5.280	Apr 2014	-		-		-		-	Continuing	Continuing	-
FFRDC SE Support	MIPR	Aerospace : Los Angeles, CA	0.000	0.684	Oct 2013	0.684	Oct 2014	-		-		-	Continuing	Continuing	-
ETASS (Engineering & Technology Acq Spt Services) (PMA)	C/CPFF	Jacobs : Lincoln, MA	0.000	1.050	Mar 2014	0.886	Nov 2014	-		-		-	Continuing	Continuing	-
PASS (Professional Acq Spt Services) (PMA)	C/CPFF	Oasis : Lexington, MA	0.000	1.450	Mar 2014	1.082	Dec 2014	-		-		-	Continuing	Continuing	-
SCS (Specialized Cost Services) (PMA)	C/CPFF	Tecolote : Bedford, MA	0.000	-		-		-		-		-	Continuing	Continuing	-
SPO Cost & Indirect (PMA)	Various	Various : Various,	0.000	0.779	Nov 2013	4.867	Oct 2014	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			0.000	9.243		7.519		-		-		-	-	-	-

**Remarks**  
 PASS recompile 1st quarter FY15.  
 ETASS recompile 3rd quarter FY15.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		0.000	125.924	54.678	-	-	-	-	-

**Remarks**



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303601F / MILSATCOM Terminals	<b>Project (Number/Name)</b> 672490 / Family of Advanced Beyond Line-of-Sight Terminals (FAB-T)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FAB-T Raytheon Development Contract	1	2014	1	2016
Boeing and Raytheon Production Contract Awards	1	2014	2	2015
FAB-T Production Downselect Decision	3	2014	3	2014
Milestone C Decision	4	2015	4	2015
FAB-T Production Contract Options	4	2015	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / <i>Airborne SIGINT Enterprise</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	83.972	74.072	112.775	-	112.775	89.930	106.944	124.019	142.094	Continuing	Continuing
675180: <i>RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)</i>	-	32.556	15.007	41.846	-	41.846	23.152	43.611	51.430	58.353	Continuing	Continuing
675181: <i>High Altitude SIGINT Development - High Altitude</i>	-	4.066	5.930	-	-	-	-	-	-	-	-	9.996
675182: <i>Medium Altitude SIGINT Development - Medium Altitude</i>	-	-	4.970	-	-	-	-	-	-	-	-	4.970
675183: <i>Common Development (Airborne SIGINT Development - Common Development)</i>	-	37.689	38.203	60.811	-	60.811	54.429	48.557	56.380	61.788	Continuing	Continuing
675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>	-	9.661	7.740	7.188	-	7.188	8.964	10.108	11.213	14.464	Continuing	Continuing
675186: <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>	-	-	2.222	2.930	-	2.930	3.385	4.668	4.996	7.489	Continuing	Continuing

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

(U) This PE provides signals intelligence (SIGINT) development efforts for all USAF airborne platforms. The funds in this PE are distributed among all Airborne SIGINT Enterprise (ASE) projects based on the development priorities established by the USAF SIGINT Capabilities Working Group (SCWG) in order to build a total SIGINT capability. As a result, the USAF will move funds between projects periodically to develop the highest priority projects in response to urgent warfighter needs. This PE will participate in the development, integration, testing, and implementation of international and Air Force standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability. Modernization efforts include sensors for the platforms and where appropriate, their interfaces with the Air Force Distributed Common Ground System (AF DCGS). This approach supports a synergistic development effort providing a true Air Force-wide capability.

(U) This enterprise will use the Air Force SIGINT Architecture (AFSA) for planning and decision-making and, in turn, employ open architecture standards whenever possible to allow maximum ease of future upgrades and system interoperability. The primary goal of the ASE is to produce an architecture-based, capability-focused SIGINT investment strategy for the USAF. Funds in any project may be used to fund initiatives in other projects within this PE at the discretion of the SCWG. Funds in any project can also cover activities to include studies and analysis to support both current program planning and execution and future program planning.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / <i>Airborne SIGINT Enterprise</i>
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(U) 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	100.172	106.786	142.689	-	142.689
Current President's Budget	83.972	74.072	112.775	-	112.775
Total Adjustments	-16.200	-32.714	-29.914	-	-29.914
• Congressional General Reductions	-	-0.424			
• Congressional Directed Reductions	-	-32.290			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-16.200	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-29.914	-	-29.914

**Change Summary Explanation**

FY14 reduction due to termination of ASIP 2C and higher Air Force priorities.

FY15 Congressional reduction against Medium Altitude SIGINT for improving funds management: Medium Altitude on Hold

FY16 reduction due to higher Air Force priorities.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise				<b>Project (Number/Name)</b> 675180 / RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675180: RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)	-	32.556	15.007	41.846	-	41.846	23.152	43.611	51.430	58.353	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

(U) This project supports design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 SIGINT sensors and their associated air and ground components. Through extensive utilization of commercial-off-the-shelf (COTS) based solutions to field needed capabilities, it also incurs a need for continuous identification of suitable replacements for components affected by Diminishing Manufacturing Sources and integration efforts consistent with the COTS technology cycle. These efforts provide required engineering for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations integrated into the various baseline modifications. These funds will be split between the RC-135V/W RIVET JOINT, the RC-135U COMBAT SENT, and the RC-135S COBRA BALL programs. Funding reflects the SIGINT Capabilities Working Group (SCWG) priorities and the accomplishment of other Airborne SIGINT Enterprise (ASE) initiatives.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> SIGINT Development	32.556	15.007	41.846
<b>Description:</b> Non-Recurring Engineering (NRE) for the RC-135 SIGINT Systems. See Classified Budget Exhibits (PE 0305207F)			
<b>FY 2014 Accomplishments:</b> Continued SIGINT development efforts for the RC-135 fleet to include new signal sets and upgrades to current capabilities. Completes certain geolocation efforts and a processor upgrade.			
<b>FY 2015 Plans:</b> Continues SIGINT development efforts for the RC-135 fleet to include new signal sets and upgrades to current capabilities.			
<b>FY 2016 Plans:</b> Will continue SIGINT development efforts for the RC-135 fleet to include new signal sets and upgrades to current capabilities.			
<b>Accomplishments/Planned Programs Subtotals</b>	32.556	15.007	41.846

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675180 / RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)

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

Line Item	FY 2014	FY 2015	FY 2016	FY 2016	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Cost To	
			Base	OCO	Total					Complete	Total Cost
• APAF: BA05: Line Item # DARP01: RC-135	174.513	163.346	156.165	-	156.165	199.323	202.851	186.275	189.628	Continuing	Continuing

**Remarks**

(U) The funds within the PE 0305207F procure all necessary aircraft modifications for the RC-135 program and include those funds necessary to field SIGINT capabilities developed under Project 675180 of this Airborne SIGINT Enterprise (ASE). Not all Procurement funds in PE 0305207F are for ASE SIGINT projects.

**D. Acquisition Strategy**

(U) Aircraft, aircraft sensor systems, and associated ground support system modifications planned include the procurement, fielding and logistical support for future RC-135V/W RIVET JOINT, RC-135U COMBAT SENT and RC-135S COBRA BALL baseline configurations. Development and integration is managed by the Big Safari Systems Group. They employ evolutionary acquisition approaches to field incremental capability improvements.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675180 / RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SIGINT Sensor Development and Integration	SS/ Various	L3COM : Greenville, TX	-	32.556	Jan 2014	15.007	Jan 2015	41.846	Jan 2016	-		41.846	Continuing	Continuing	-
<b>Subtotal</b>			-	32.556		15.007		41.846		-		41.846	-	-	-

**Remarks**  
Above contract method/type will be CPFF and FFP

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	32.556	15.007	41.846	-	41.846	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675180 / RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Development of RIVET JOINT mission sensors	[REDACTED]																											
Development of COMBAT SENT mission sensors	[REDACTED]																											
Development of COBRA BALL mission sensors	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675180 / RC-135 (Airborne SIGINT Development - RC-135 Rivet Joint)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Development of RIVET JOINT mission sensors	1	2014	4	2020
Development of COMBAT SENT mission sensors	1	2014	4	2020
Development of COBRA BALL mission sensors	1	2014	4	2020

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise				<b>Project (Number/Name)</b> 675181 / High Altitude SIGINT Development - High Altitude			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675181: High Altitude SIGINT Development - High Altitude	-	4.066	5.930	-	-	-	-	-	-	-	-	9.996
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

(U) In FY 2016, PE 0304260F, Airborne SIGINT Enterprise, Project 675181, High Altitude SIGINT Development - High Altitude efforts are transferred to PE 0304260F, Airborne SIGINT Enterprise, Project 675183, Common Development (Airborne SIGINT Development - Common Development) in order to simplify contracts as there will be only one High Altitude platform going forward.

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

(U) This project covers the costs of SIGINT integration for high altitude intelligence, surveillance, and reconnaissance (ISR) platforms.

(U) This project supports sensor integration and test, flight test, design studies, engineering analysis, non-recurring engineering and other efforts associated with the insertion of new capabilities integrated into the Airborne Signals Intelligence Payload (ASIP) or other SIGINT sensors and their associated air and ground components for the High Altitude SIGINT platforms. The project also identifies suitable replacements for components affected by Diminishing Manufacturing Sources (DMS). This project provides the warfighter with a near-term, increased combat capability. Enhancements are implemented as soon as technology and risk achieve satisfactory levels. Capability improvements will be inserted into the sensors through individual development efforts that exploit signals of interest identified as service priorities by the Air Force SIGINT Capabilities Working Group (SCWG). Funding includes completion of developmental logistics tasks associated with the design, development, and integration of ASIP.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> High Altitude SIGINT	4.066	5.930	-
<b>Description:</b> Integration and test of SIGINT sensors into high altitude platforms including the Airborne Signals Intelligence Payload (ASIP) Incr 1 sensor, using an open system architecture.			
<b>FY 2014 Accomplishments:</b> Continued logistics efforts and development of new signals capabilities and enhancements of SIGINT sensors as necessary.			
<b>FY 2015 Plans:</b> Will continue logistics efforts and development of new signals capabilities and enhancements of SIGINT sensors as necessary.			
<b>FY 2016 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675181 / High Altitude SIGINT Development - High Altitude

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
No activity planned.			
<b>Accomplishments/Planned Programs Subtotals</b>	4.066	5.930	-

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

<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA05 Line Item # HAWK00: RQ-4 Mods	9.313	21.354	50.022	-	50.022	34.493	89.248	67.265	68.477	Continuing	Continuing

**Remarks**

(U) Not all funds are associated with SIGINT.

**D. Acquisition Strategy**

(U) SIGINT capabilities will be integrated into high altitude platforms using an evolutionary approach.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675181 / High Altitude SIGINT Development - High Altitude
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SIGINT Sensors Development	SS/ Various	Northrop Grumman : San Jose, CA	-	3.666	Jan 2014	5.930	Feb 2015	-		-		-	-	9.596	-
<b>Subtotal</b>			-	3.666		5.930		-		-		-	-	9.596	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA	Various	TBD : Dayton, OH	-	0.400	Jan 2014	-		-		-		-	-	0.400	-
<b>Subtotal</b>			-	0.400		-		-		-		-	-	0.400	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	4.066	5.930	-	-	-	-	9.996	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675181 / High Altitude SIGINT Development - High Altitude

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

New signals integration	[REDACTED]																											
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675181 / High Altitude SIGINT Development - High Altitude

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
New signals integration	1	2014	4	2015



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise				<b>Project (Number/Name)</b> 675182 / Medium Altitude SIGINT Development - Medium Altitude			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675182: Medium Altitude SIGINT Development - Medium Altitude	-	-	4.970	-	-	-	-	-	-	-	-	4.970
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

(U) In FY 2016, PE 0304260F, Airborne SIGINT Enterprise, Project 675182, Medium Altitude SIGINT Development - Medium Altitude, was terminated.

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

(U) This project supports design studies, engineering analysis, non-recurring engineering, program management administration, and other efforts associated with the integration and modification of medium altitude platforms as required with SIGINT sensors and their associated air and ground components. This RDT&E effort integrates SIGINT capability on medium altitude platforms as required. The sensors will be capable of collecting technical data and geolocating signals of interest and providing sensor data to a workstation.

(U) Design efforts specific to medium altitude systems may include, but not be limited to, antennas, electromagnetic interference reduction, encryption techniques, and changes to the aircraft, ground station, data link, and simulator necessary to accommodate a SIGINT payload and its data throughput. Funding will support efforts to develop antennas, receivers, processors, software development, aircraft integration and ground station upgrades to allow a persistent reconnaissance, surveillance, targeting, and acquisition capability against mission specific threats. Development of a networked capability for medium altitude systems will also be initiated. These upgrades are designed to exploit signals of interest identified as service priorities by the Air Force SIGINT Capabilities Working Group (SCWG). These development activities will continue through future years, to include but not be limited to, integrating capabilities developed under separate efforts. Applicable design efforts for the ASIP Processor Upgrade Chassis (APUC) are planned to be migrated to the baseline ASIP sensor to provide new signals capabilities and enhancements to counter specific threats. FY15 funding is planned to mature technology developed under APUC for application on the ASIP sensor.

(U) This project provides the warfighter with near term increased combat capability. Enhancements are implemented as soon as technology and risk achieve satisfactory levels and exploit signals of interest identified as Service priorities by the AF SCWG.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Development	-	4.970	-
<b>Description:</b> Develop and test SIGINT systems for multiple platforms using the Airborne Signals Intelligence Payload (ASIP) sensor, including the ASIP Processor Upgrade Chassis (APUC), using an open system architecture.			
<b>FY 2014 Accomplishments:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675182 / Medium Altitude SIGINT Development - Medium Altitude

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
FY14 saw the end of ASIP 2C and the ASIP Processor Upgrade Chassis (APUC) development efforts. <b>FY 2015 Plans:</b> FY15 funds were originally meant for ASIP 2C and APUC development efforts. With these efforts terminated, the FY15 funds will be used for continual new signal capabilities and enhancements for the ASIP sensor. <b>FY 2016 Plans:</b> No activity planned.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	4.970	-

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

N/A

**Remarks**

**D. Acquisition Strategy**

(U) SIGINT capabilities will be integrated onto medium altitude platforms using an evolutionary acquisition approach.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675182 / Medium Altitude SIGINT Development - Medium Altitude
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SIGINT Sensors Development	SS/CPIF	Northrop Grumman ESL : San Jose, CA	-	-		4.970	Mar 2015	-		-		-	-	4.970	-
<b>Subtotal</b>			-	-		4.970		-		-		-	-	4.970	-

**Remarks**  
FY14: APUC Terminated.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	4.970	-	-	-	-	4.970	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675182 / Medium Altitude SIGINT Development - Medium Altitude

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

Medium Altitude SIGINT Development																												
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675182 / Medium Altitude SIGINT Development - Medium Altitude

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Medium Altitude SIGINT Development	1	2015	4	2015

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675183 / Common Development (Airborne SIGINT Development - Common Development)
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675183: Common Development (Airborne SIGINT Development - Common Development)	-	37.689	38.203	60.811	-	60.811	54.429	48.557	56.380	61.788	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

(U) In FY 2016, PE 0304260F, Airborne SIGINT Enterprise, Project 675181, High Altitude SIGINT Development - High Altitude efforts are transferred to PE 0304260F, Airborne SIGINT Enterprise, Project 675183, Common Development (Airborne SIGINT Development - Common Development) in order to simplify contracts as there will be only one High Altitude platform going forward.

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

(U) This project supports design studies, engineering analysis, non-recurring engineering, program management administration and other efforts associated with the insertion of new capabilities integrated into ASIP and other sensors and their associated air and ground components that will be used on/by more than one platform. The common development SIGINT project also supports development of new sensors capabilities, normalization of quick reaction capabilities, and identifies suitable replacements for components affected by diminishing manufacturing sources. New capabilities are developed by separate projects. This project also supports the development of projects common to the Airborne SIGINT Enterprise (ASE) Program Element (PE) overall to include, but not limited to: the Air Force SIGINT Architecture (AFSA) maintenance, modeling and simulation efforts, and NATO SIGINT efforts.

(U) Sensors development supports Airborne Signals Intelligence Payloads (ASIPs) high altitude payload upgrades. The systems' open architecture and Joint Airborne SIGINT Architecture (JASA)/ Unified Cryptologic System Technical View 1 (UCS StdY-1) compliant design supports streamlined integration of ASIP onto additional ISR platforms. The ASIP sensor is designed to be a common SIGINT system that will allow for for maximum coverage of the electromagnetic spectrum through the use of an integrated high and low band system.

(U) Capability improvements will be inserted into the ASIP sensor through individual development efforts that exploit signals of interest identified as service priorities by the Air Force SIGINT Capabilities Working Group (SCWG). This project provides the warfighter near term increased combat capability. Enhancements are implemented as soon as technology and risk achieve satisfactory levels. Compatability improvements will be inserted into the ASIP through individual development efforts that exploit signals of interest identified as Service priorities by the USAF SCWG. Sensors will be integrated and tested on the various platforms as funding permits.

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> SIGINT Development	37.689	38.203	60.811

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675183 / Common Development (Airborne SIGINT Development - Common Development)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> Develop and test a common SIGINT system for multiple SIGINT platforms including ASIP incremental upgrades using an open system architecture.</p> <p><b>FY 2014 Accomplishments:</b> Continued new signals capabilities and enhancements for the ASIP sensor. including ASIP Upgrade Increments 1 and Increment 2. Continued integration activities, and incorporate upgrades as appropriate. Details are classified.</p> <p><b>FY 2015 Plans:</b> Continues new signals capabilities and enhancements for the ASIP FoS. Continues integration activities and incorporate upgrades as appropriate. Details are classified.</p> <p><b>FY 2016 Plans:</b> Will continue new signals capabilities and enhancements for the ASIP FoS. Will continue integration activities and incorporate upgrades as appropriate. Details are classified.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	37.689	38.203	60.811

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA05 Line Item # HAWK00: RQ-4 Mods	9.313	21.354	50.022	-	50.022	34.493	89.248	67.265	68.477	Continuing	Continuing

**Remarks**  
Not all funds are associated with SIGINT.

**D. Acquisition Strategy**  
Signals Intelligence capabilities will be developed and integrated onto various platforms using an evolutionary acquisition approach.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675183 / Common Development (Airborne SIGINT Development - Common Development)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ASIP Upgrades Development	SS/CPIF	Northrop Grumman : San Jose, CA	-	24.191	Jan 2014	0.516	Jan 2015	5.911	Jan 2016	-		5.911	Continuing	Continuing	-
ASIP Global Hawk Increment 1	SS/CPFF	Northrop Grumman : San Jose, CA	-	0.500	Feb 2015	13.487	Feb 2015	11.000	Jan 2016	-		11.000	Continuing	Continuing	-
ASIP Increment 2 - Pre EMD	SS/CPIF	Northrop Grumman : San Jose, CA	-	4.100	Jun 2014	14.800	Mar 2015	-		-		-	-	18.900	-
ASIP Increment 2 - EMD	SS/CPIF	Northrop Grumman : San Jose, CA	-	-		1.400	Nov 2015	37.000	Nov 2015	-		37.000	Continuing	Continuing	-
ASIP Processor Upgrade Chassis	SS/CPIF	Northrop Grumman : San Jose, CA	-	3.031	Nov 2013	-		-		-		-	-	3.031	-
Various SIGINT Efforts	Various	Northrop Grumman : San Jose, CA	-	3.200	Mar 2014	3.500	Dec 2014	3.500	Dec 2015	-		3.500	Continuing	Continuing	-
<b>Subtotal</b>			-	35.022		33.703		57.411		-		57.411	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(U) Various Integration Efforts, & Flight Test (U-2)	Various	Various : San Jose, CA	-	1.167	Jan 2014	2.400	Jan 2015	-		-		-	-	3.567	-
<b>Subtotal</b>			-	1.167		2.400		-		-		-	-	3.567	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-





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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675183 / Common Development (Airborne SIGINT Development - Common Development)

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
ASIP Upgrades Increment 1 - U-2 Field Release 3.1.2	██████████																											
ASIP Upgrades Increment 1 - U-2 Field Release 3.2	████████████████████																											
ASIP Upgrades Increment 1 - Global Hawk					████████████████████																							
ASIP Upgrades Increment 2 - Pre EMD					██████████																							
ASIP Upgrades Increment 2 - EMD									████████████████████																			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675183 / Common Development (Airborne SIGINT Development - Common Development)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ASIP Upgrades Increment 1 - U-2 Field Release 3.1.2	1	2014	4	2014
ASIP Upgrades Increment 1 - U-2 Field Release 3.2	1	2014	1	2016
ASIP Upgrades Increment 1 - Global Hawk	2	2015	1	2017
ASIP Upgrades Increment 2 - Pre EMD	3	2014	2	2015
ASIP Upgrades Increment 2 - EMD	1	2016	1	2020

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise				<b>Project (Number/Name)</b> 675185 / Compass Bright (Airborne SIGINT Development - Compass Bright)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675185: <i>Compass Bright (Airborne SIGINT Development - Compass Bright)</i>	-	9.661	7.740	7.188	-	7.188	8.964	10.108	11.213	14.464	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

(U) The COMPASS BRIGHT program develops, demonstrates, and rapidly transitions advanced Air Force specific Signals Intelligence (SIGINT) capabilities against emerging and future target signals. The COMPASS BRIGHT program includes the newer Operational Reconnaissance (Ops Recce). This program pursues SIGINT and Ops Recce technologies for program transition, to include Communications Intelligence (COMINT), Electronic Intelligence (ELINT), Audio, Analytics, Special Signals of Interest, and Radio Frequency (RF) Measurement and Signature Intelligence (MASINT). The COMPASS BRIGHT program objective is to develop technologies for application in SIGINT and MASINT systems or subsystems. Acquisition and production of these developed technologies will occur within the appropriate platform programs. COMPASS BRIGHT projects are selected through a data call process, whereby the USAF evaluates proposals from the laboratories and industry partners, to select those projects that are most promising. This program includes total government and contractor costs for these projects.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> SIGINT Tech Development	9.661	7.740	7.188
<b>Description:</b> Develops projects in the Signals Intelligence and Radio Frequency Measurement and Signature Intelligence areas for transition to the RC-135 fleet, other ISR platforms and Operational Reconnaissance (Ops Recce).			
<b>FY 2014 Accomplishments:</b> Continued/completed various SIGINT projects to include search and intercept improvements, enhanced ELINT exploitation, and real time communications systems.			
<b>FY 2015 Plans:</b> Continues and completes various SIGINT projects to include enhanced ELINT exploitation, COMINT, Audio exploitation, Operational Reconnaissance (Ops Recce), Signals of interest prosecution, and Non-Traditional ISR (NTISR).			
<b>FY 2016 Plans:</b> Will initiate, continue, and complete various SIGINT projects to include enhanced ELINT exploitation, COMINT, Audio exploitation, Operational Reconnaissance (Ops Recce), Signals of interest prosecution, and NTISR.			
<b>Accomplishments/Planned Programs Subtotals</b>	9.661	7.740	7.188

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0304260F / Airborne SIGINT Enterprise	Project (Number/Name) 675185 / Compass Bright (Airborne SIGINT Development - Compass Bright)

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

N/A

**Remarks**

**D. Acquisition Strategy**

(U) Ongoing COMPASS BRIGHT technology development and demonstration contracts will continue through existing laboratory relationships and other existing contractual vehicles, with future development projects emphasizing 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675185 / Compass Bright (Airborne SIGINT Development - Compass Bright)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Compass Bright	Various	Multiple : Various, V	-	8.842	Jan 2014	7.243	Jan 2015	6.691	Jan 2016	-		6.691	Continuing	Continuing	-
<b>Subtotal</b>			-	8.842		7.243		6.691		-		6.691	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA	Various	Various : Dayton, OH	-	0.819	Oct 2013	0.497	Oct 2014	0.497	Oct 2015	-		0.497	Continuing	Continuing	-
<b>Subtotal</b>			-	0.819		0.497		0.497		-		0.497	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	9.661	7.740	7.188	-	7.188	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675185 / Compass Bright (Airborne SIGINT Development - Compass Bright)

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

SIGINT Technologies																												
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675185 / Compass Bright (Airborne SIGINT Development - Compass Bright)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SIGINT Technologies	1	2014	4	2020



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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675186 / Special Programs (Airborne SIGINT Development - Special Platforms)
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675186: <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>	-	-	2.222	2.930	-	2.930	3.385	4.668	4.996	7.489	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

(U) This project supports special Signals Intelligence (SIGINT) studies as well as the development and integration of advanced SIGINT capabilities for special programs including, but not limited to: Quick Reaction Capability (QRC) sensors, the Processing, Exploitation, and Dissemination (PED) associated with these systems, and other efforts approved by the USAF SIGINT Capabilities Working Group (SCWG). Development efforts will include, but are not limited to: new signal sets, antenna improvements, sensitivity upgrades, and data distribution upgrades. This project provides the warfighter with near term combat capabilities with increased capability improvements accomplished as technologies and risks achieve satisfactory levels. Sensors will be integrated and tested on various platforms including the MQ-1B/ MQ-9A Remotely Piloted Aircraft (RPA) as funding permits.

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> SIGINT Development	-	2.222	2.930
<b>Description:</b> Develop, update, and test SIGINT capabilities for QRC and normalized special programs SIGINT projects.			
<b>FY 2014 Accomplishments:</b> N/A			
<b>FY 2015 Plans:</b> Begin to modernize systems already integrated on various aircraft including the MQ-1B/9B RPA			
<b>FY 2016 Plans:</b> Continue to modernize SIGINT systems on the MQ-1B/9A RPA.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	2.222	2.930

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

N/A

**Remarks**

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / <i>Airborne SIGINT Enterprise</i>	<b>Project (Number/Name)</b> 675186 / <i>Special Programs (Airborne SIGINT Development - Special Platforms)</i>

**D. Acquisition Strategy**

(U) SIGINT capabilities will be integrated to various classified platforms using an evolutionary acquisition approach. Capabilities and prototypes will be developed by Other Government Agencies (OGA) and transitioned to select vendors as production needs develop.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675186 / Special Programs (Airborne SIGINT Development - Special Platforms)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MQ-1/9 SIGINT Upgrades	Various	Various : Various,	-	-		1.422	Jan 2015	0.700	Jan 2016	-		0.700	Continuing	Continuing	-
<b>Subtotal</b>			-	-		1.422		0.700		-		0.700	-	-	-

**Remarks**  
Upgrades the QRC sensors already on the MQ-1/9 fleet

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Test	Various	Various : Various,	-	-		0.800	Jan 2015	2.230	Jan 2016	-		2.230	Continuing	Continuing	-
<b>Subtotal</b>			-	-		0.800		2.230		-		2.230	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	2.222	2.930	-	2.930	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675186 / Special Programs (Airborne SIGINT Development - Special Platforms)

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
MQ-1/9 Sensor 1 Modernization																												
MQ-1/9 Sensor 2 Modernization																												
MQ-1/9 Sensor Upgrades																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0304260F / Airborne SIGINT Enterprise	<b>Project (Number/Name)</b> 675186 / Special Programs (Airborne SIGINT Development - Special Platforms)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
MQ-1/9 Sensor 1 Modernization	1	2015	4	2020
MQ-1/9 Sensor 2 Modernization	1	2015	4	2020
MQ-1/9 Sensor Upgrades	1	2016	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305099F / <i>Global Air Traffic Management (GATM)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	4.027	4.157	4.235	-	4.235	4.398	4.483	4.568	4.650	Continuing	Continuing
674689: <i>Global Access Architecture</i>	-	4.027	4.157	4.235	-	4.235	4.398	4.483	4.568	4.650	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

This program element funds the Air Force Life Cycle Management Center (AFLCMC) Aerospace Management System Division (AMSD), the designated Air Force (AF) Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) and Navigation Safety Center of Excellence (COE). The COE provides expertise to Headquarters Air Force, AF major commands (MAJCOM), and weapon system program offices regarding CNS/ATM system technical functions and performance standards for operation in the US National Airspace System (NAS) and international civil airspace. This centralized capability supplements the MAJCOMs and over 50 AF weapon system program offices with resident CNS/ATM technical expertise.

This funding enables the AMSD to monitor and participate in government and industry technical forums responsible for the development and assessment of international civil aviation standards for operations in worldwide airspace. Division personnel analyze civil standards as they are being developed and work to influence them to support Department of Defense (DOD) interests. CNS/ATM experts identify specific technical and engineering criteria and document them in generic performance matrices (GPMs). The COE works with MAJCOM and program office personnel to develop strategies for implementing CNS/ATM requirements on AF weapon systems. Specifically, CNS/ATM experts work with program office systems engineers to tailor the GPMs to apply civil standards to each platform's unique avionics architecture. Once CNS/ATM component integration and testing is completed, COE personnel validate platform CNS/ATM performance against the standards necessary to operate in civil airspace.

This program also funds the management of Indefinite Delivery/Indefinite Quantity (IDIQ) contracts that enable centralized procurement of CNS/ATM and navigation safety avionics equipment. These contracts are used by aircraft program offices across the DOD, among other federal agencies, and in support of foreign military sales.

This program also funds periodic audits required by civil aviation assurance standards on processes used to develop and distribute the Digital Aeronautical Flight Information File (DAFIF) to DOD users. This electronic navigation database, developed and maintained by the National Geospatial Intelligence Agency (NGA), contains critical safety of flight information used by DOD flight crews to fly instrument flight rules procedures worldwide.

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.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305099F / <i>Global Air Traffic Management (GATM)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	4.027	4.157	4.263	-	4.263
Current President's Budget	4.027	4.157	4.235	-	4.235
Total Adjustments	-	-	-0.028	-	-0.028
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.028	-	-0.028

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p><b>Title:</b> Contract Support and Administration of DOD Avionics Equipment Catalog</p> <p><b>Description:</b> Multiple contract vehicles with multiple avionics vendors that enable centralized procurement of CNS/ATM avionics equipment/components. Supports numerous DOD, US federal agency, and foreign military sales program offices. Provides preferred customer pricing and extended warranties.</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Generated \$46M in sales and \$32M in savings.</li> <li>- Facilitated DOD compliance with European aircraft surveillance (Mode S) requirements.</li> <li>- Provided growth capable equipment to meet Aircraft Dependent Surveillance - Broadcast (ADS-B), area navigation (RNAV) and required navigation perform (RNP) standards, and emerging aircraft identification transponder requirements.</li> <li>- Issued request for proposal (RFP) for follow-on 5-year option contracts.</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue administration of current contracts.</li> <li>- Evaluate proposals and award new 5-year option contracts.</li> <li>- Ensure availability of avionics components required for Federal Aviation Administration (FAA) mandated ADS-B requirements.</li> </ul> <p><b>FY 2016 Base Plans:</b></p>	0.741	0.710	0.728	-	0.728



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305099F / <i>Global Air Traffic Management (GATM)</i>				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Continue to administer the catalog and monitor industry for new CNS/ATM products which could be added to the catalog. <b>FY 2016 OCO Plans:</b> N/A						
<b>Title:</b> Digital Aeronautical Flight Information File (DAFIF) Management  <b>Description:</b> Perform periodic audits of the processes and procedures utilized by organizations involved in the development and distribution of critical safety of flight electronic databases used by aircrews to fly instrument flight rules procedures worldwide. Ensures the validity of multiple sources of information critical to implementation of international performance based navigation (PBN) standards.  <b>FY 2014 Accomplishments:</b> - Assisted the NGA to address previously identified process deficiencies and maintain their FAA approvals. - COE personnel conducted several navigation data chain audits required to ensure the data/information needed for oceanic/remote and terminal area navigation requirements is accurate and acceptable for use in worldwide airspace. The successful completion of these audits enabled flight crews on many AF platforms to use this navigation data in civil airspace.  <b>FY 2015 Plans:</b> - Continue assisting DOD agencies and the NGA to validate the accuracy of DAFIF data and investigate potential automation tools/capabilities to increase database accuracy. - Work with AF Flight Standards Agency terminal instrument approach procedure specialists to continue development and publication of Global Positioning System (GPS) based instrument procedures.  <b>FY 2016 Base Plans:</b> - Work with DOD agencies and the FAA to develop performance based procedures required to operate without restriction in the NAS and in international civil aviation environments. - Continue to publish procedures and databases with the required degree of accuracy/performance necessary to operate manned and remotely piloted aircraft in the NAS.  <b>FY 2016 OCO Plans:</b> N/A		1.846	1.800	1.818	-	1.818
<b>Title:</b> Generic Performance Matrix (GPM) Development		1.440	1.647	1.689	-	1.689

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305099F / <i>Global Air Traffic Management (GATM)</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p><b>Description:</b> Participate in technical forums to understand and influence civil aviation standards to incorporate DOD interests. Create new and/or revise the 22 existing GPMs used by AF platform program offices to ensure aircraft comply with civil aviation requirements. Tailor GPMs for program offices to apply standards to unique aircraft avionics architectures. Assist 50+ aircraft program offices with the development of CNS/ATM related test and evaluation plans, the analysis of test/performance data, and the certification of aircraft CNS/ATM performance.</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Updated nine GPMs.</li> <li>- Provided standards for platform program offices to plan for equipment upgrades needed to meet the FAA's 1 Jan 2020 ADS-B Out mandate.</li> <li>- Authored a generic ADS-B test plan to expedite AF and DOD platform office testing and fielding of ADS-B equipment.</li> <li>- Developed a test plan to evaluate currently fielded GPS equipment to meet ADS-B requirements, and conducted testing on the most widely fielded GPS system currently used on AF aircraft.</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue to engage at industry and civil authority technical working groups to influence aviation standards that benefit DOD users.</li> <li>- Continue to define the standards and assist AF and DOD program offices to plan and equip aircraft to meet CNS/ATM requirements.</li> <li>- Perform tests on additional fielded GPS systems to determine if they can meet ADS-B requirements.</li> </ul> <p><b>FY 2016 Base Plans:</b></p> <p>Continue development of performance matrices to ensure AF manned and remotely piloted aircraft are capable and certified to operate in accordance with emerging International Civil Aviation Organization performance based CNS/ATM requirements.</p> <p><b>FY 2016 OCO Plans:</b></p> <p>N/A</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	4.027	4.157	4.235	-	4.235

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

N/A

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305099F / <i>Global Air Traffic Management (GATM)</i>	
<b>D. Other Program Funding Summary (\$ in Millions)</b>		
<b>Remarks</b>		
<b>E. Acquisition Strategy</b> This program primarily supports the acquisition of contractor advisory and assistance service (A&AS) and other technical support personnel to support the major thrusts described in Section C. This program also provides for the acquisition of contractor services in support of various program management activities within the COE. All of these services are acquired via the issuance of task/delivery orders against existing contractor support contract vehicles available to the CNS/ATM COE.		
<b>F. Performance Metrics</b> 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.		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305099F / <i>Global Air Traffic Management (GATM)</i>	<b>Project (Number/Name)</b> 674689 / <i>Global Access Architecture</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technical support for CNS/ATM requirement assessments, GPM development, DAFIF navigation data chain audits/certification, and CNS/ATM ID/IQ contract management.	C/T&M	MITRE : Bedford, MA	-	2.474	Oct 2013	2.574	Oct 2014	2.612	Oct 2015	-		2.612	Continuing	Continuing	-
Technical support for operational requirement assessments, GPM development, DAFIF navigation data chain audits/certification, and CNS/ATM ID/IQ contract management.	C/CPFF	Jacobs Technology : Lincoln, MA	-	0.790	Dec 2013	0.800	Dec 2014	0.810	Dec 2015	-		0.810	Continuing	Continuing	-
Reconfigurable Cockpit Avionics Testbed Laboratory Data Link Subscription	SS/FFP	ARNIC : Annapolis, MD	-	0.023	Mar 2014	0.027	Mar 2015	0.027	Mar 2016	-		0.027	Continuing	Continuing	-
<b>Subtotal</b>			-	3.287		3.401		3.449		-		3.449	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305099F / <i>Global Air Traffic Management (GATM)</i>	<b>Project (Number/Name)</b> 674689 / <i>Global Access Architecture</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

Generic Performance Matrix Development	[REDACTED]																											
DAFIF Management	[REDACTED]																											
CNS/ATM iGATM I Contract Administration	[REDACTED]																											
CNS/ATM iGATM II Contract Proposal Evaluations	[REDACTED]																											
CNS/ATM iGATM II Contract Administration	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305099F / <i>Global Air Traffic Management (GATM)</i>	<b>Project (Number/Name)</b> 674689 / <i>Global Access Architecture</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Generic Performance Matrix Development	1	2014	4	2020
DAFIF Management	1	2014	4	2020
CNS/ATM iGATM I Contract Administration	1	2014	2	2015
CNS/ATM iGATM II Contract Proposal Evaluations	1	2014	2	2015
CNS/ATM iGATM II Contract Administration	2	2015	4	2019

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305103F / <i>Cyber Security Initiative</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	1.979	-	-	-	-	-	-	-	-	-	1.979
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	-	1.979	-	-	-	-	-	-	-	-	-	1.979
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**  
 In FY15, Project Number 671931 Tech Surveil Counter Meas Eqpt, was terminated/completed.

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

The DoD Cyber Crime Center (DC3) was created as a DoD Center of Excellence to efficiently organize, equip, train, and employ scarce resources to more effectively address the proliferation of computer crimes affecting the DoD. DC3 has a digital forensics laboratory, training program, institute, and National Cyber Investigative Joint Task Force Analytical Group. To enable its operations, through the Defense Cyber Crime Institute (DCCI), DC3 will remain on the leading edge of computer technologies and techniques through research, development, testing and evaluation applied to digital evidence processing and computer forensic analysis; and by conducting liaison and by partnering with governmental, university, and private industry computer security officials. DC3 will develop imaging tools, steganalysis and stegextraction tools, and password over-ride tools. These software tools will enable DC3 to increase the probability of data recovery that would otherwise remain undetected. The Intrusions/Intruders Signature Program (IISP) provides for the R&D of products and technologies that detect trace and profile hostile cyber adversaries. This capability provides network monitoring and the framework for sharing and automating reverse engineering techniques. Computer Incident Batch Oriented Recursive Examination (CIBORE) is used to aid the counterintelligence and law enforcement communities to respond to computer intrusions. It is also a data reduction tool that takes a large volume of data, identifies the known good and bad files and eliminates them from consideration, leaving several GBs of files as candidate malicious code files.

This program is in Budget Activity 7, Operational System Development, these budget activities includes development efforts to upgrade systems currently fielded or has received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force				<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305103F / <i>Cyber Security Initiative</i>				
<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	
Previous President's Budget	2.048	-	-	-	-	
Current President's Budget	1.979	-	-	-	-	
Total Adjustments	-0.069	-	-	-	-	
• Congressional General Reductions	-	-				
• Congressional Directed Reductions	-	-				
• Congressional Rescissions	-	-				
• Congressional Adds	-	-				
• Congressional Directed Transfers	-	-				
• Reprogrammings	-	-				
• SBIR/STTR Transfer	-0.069	-				
• Other Adjustments	-	-	-	-	-	
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>				<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Digital Forensic Tools				1.979	-	-
<b>Description:</b> Develops technologies used to aid the counterintelligence and law enforcement communities in detecting, tracing, profiling, and responding to computer intrusions due to continuously evolving tactics, techniques, and procedures. Tools are uniquely suited for consideration of both civilian generics and military specific purposes. These software tools enable the LE/CI community to increase the probability of data recovery that would otherwise remain undetected. The On-Scene Triage Tool (OTT) provides special agents with the ability to obtain information immediately from a live computer at a crime scene in order to determine media relevancy to an investigation. The TrueCrypt Detect tool is a special purpose tool for 1st responders to rapidly search thousands of files from suspected media embedded in MP4 or MOV videos using the program TCSteg.						
<b>FY 2014 Accomplishments:</b> Continued development and testing of Version 2.0 for both On-Scene Triage and Truecrypt Detect tools for LE/CI communities and NMEC.						
<b>FY 2015 Plans:</b> N/A						
<b>FY 2016 Plans:</b> N/A						
<b>Accomplishments/Planned Programs Subtotals</b>				1.979	-	-
<b>D. Other Program Funding Summary (\$ in Millions)</b> N/A						

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force Date: February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305103F / <i>Cyber Security Initiative</i>
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**D. Other Program Funding Summary (\$ in Millions)**

**Remarks**

**E. Acquisition Strategy**

In FY15, Project Number 671931 Tech Surveil Counter Meas Eqpt, was terminated/completed.

**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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0305103F / Cyber Security Initiative				671931 / TECH SURVEIL COUNTER MEAS EQPT								
<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Digital Forensic Tools	C/FFP	Lockheed Martin : Lithicum, MD	-	1.979	Dec 2014	-		-		-		-	-	1.979	1.979	
<b>Subtotal</b>			-	1.979		-		-		-		-	-	1.979	1.979	
<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Project Cost Totals</b>			-	1.979		-		-		-		-	-	1.979	1.979	
<b>Remarks</b>																

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305103F / <i>Cyber Security Initiative</i>	<b>Project (Number/Name)</b> 671931 / <i>TECH SURVEIL COUNTER MEAS EQPT</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Develop software tools	[REDACTED]																											
Evaluate software using digital evidence processing	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305103F / <i>Cyber Security Initiative</i>	<b>Project (Number/Name)</b> 671931 / <i>TECH SURVEIL COUNTER MEAS EQPT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Develop software tools	1	2014	2	2015
Evaluate software using digital evidence processing	1	2014	2	2015

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305105F / <i>DoD Cyber Crime Center</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	0.279	-	-	-	-	-	-	-	-	-	0.279
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	-	0.279	-	-	-	-	-	-	-	-	-	0.279
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
In FY15, Project Number 671931 Tech Surveil Counter Meas Eqpt, was terminated/completed.

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

Defense Cyber Crime Institute (DCCI) continues RDT&E collaboration efforts with law enforcement/counterintelligence and cyber communities to identify digital forensic technology gaps, research potential solutions and develop tools based on those solutions to address the gaps. DCCI leverage research into cutting edge investigative challenges within the digital forensics discipline to advance efforts aimed at securing networks, to include deep dive research into metamorphic and polymorphic techniques embedded in malicious code.

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>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	0.288	-	-	-	-
Current President's Budget	0.279	-	-	-	-
Total Adjustments	-0.009	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.009	-			
• Other Adjustments	-	-	-	-	-

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>
<b>Title:</b> Forensic Technology Gap	0.279	-	-

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305105F / <i>DoD Cyber Crime Center</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> Tools are developed after specific consultation with law enforcement and counterintelligence agencies after analysis of domestic and foreign intrusion attempts. Automated Malware Processor (AMP) 2.0 file processing includes extraction, carving and analysis operations which improves the efficiency of forensics examiners by automating tasks that do not require the application of human intelligence. 3GPCarver provides rapid carving of video taken from cell phones and MP4 files. The tool is also effective at reconstructing video files which are mildly fragmented.</p> <p><b>FY 2014 Accomplishments:</b> Development of AMP 4.0 and 3GPCarver 3.0.</p> <p><b>FY 2015 Plans:</b> No FY15 funding requested.</p> <p><b>FY 2016 Plans:</b> No FY16 funding requested</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.279	-	-

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

**Remarks**

**E. Acquisition Strategy**  
In FY15, Project Number 671931 Tech Surveil Counter Meas Eqpt, was terminated/completed.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305105F / DoD Cyber Crime Center	<b>Project (Number/Name)</b> 671931 / TECH SURVEIL COUNTER MEAS EQPT
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Intrusion Signature Tools	MIPR	Mitre : MA,	-	0.279	Nov 2013	-		-		-		-	-	0.279	0.279
<b>Subtotal</b>			-	0.279		-		-		-		-	-	0.279	0.279

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	0.279	-	-	-	-	-	0.279	0.279

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305105F / DoD Cyber Crime Center	<b>Project (Number/Name)</b> 671931 / TECH SURVEIL COUNTER MEAS EQPT

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

Forensic Data Extraction	[REDACTED]																											
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305105F / <i>DoD Cyber Crime Center</i>	<b>Project (Number/Name)</b> 671931 / <i>TECH SURVEIL COUNTER MEAS EQPT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Forensic Data Extraction	1	2014	2	2015

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305110F / <i>Satellite Control Network (SPACE)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	34.488	20.806	7.879	-	7.879	21.385	15.572	15.865	16.148	Continuing	Continuing
673276: <i>Satellite Control Network</i>	-	34.488	20.806	7.879	-	7.879	21.385	15.572	15.865	16.148	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Air Force Satellite Control Network (AFSCN) is a satellite ground terminal network comprised of two communication nodes and 15 antenna systems. The antennas are distributed around the globe at seven locations to ensure global coverage for 170 satellites in various orbits. The AFSCN conducts an average of 450 satellite contacts per day supporting Positioning, Navigation and Timing (PNT); Intelligence, Surveillance and Reconnaissance (ISR); Missile Warning; Communications; Weather; Launch Vehicle Support; Research and Development (R&D) in support of Department of Defense (DoD), Intelligence Community (IC), and National Aeronautics and Space Administration (NASA) operations. While most of the 450 satellite contacts/day are routine command and control activities, the AFSCN is also used for satellite emergencies (e.g. tumbling satellite) because its high power antennas are often the only earthbound assets that can contact a non-responsive satellite to re-establish command & control. In FY14 alone, the AFSCN supported 17 space vehicle emergencies resulting in the preservation of \$6B worth of satellites. In addition to routine and emergency satellite operations C2, the AFSCN provides support to launch vehicle and early orbit operations, ensuring worldwide antennas receive telemetry as the rocket travels through the atmosphere and transmit commands to a newly orbiting satellite to initiate early orbit checkout. Finally, the AFSCN provides Factory Compatibility Testing (FCT) to ensure satellites and rockets can communicate via the AFSCN before the satellite is launched. These funds are used to develop next-generation tools to improve the AFSCN and ensure the capability is available to support DoD, Intelligence, and civil users.

**MISSION PLANNING UPGRADE:** The Air Force will complete the Electronic Scheduling and Dissemination (ESD) 3.0 program, modernizing worldwide antenna system scheduling to support all 170 satellites. Satellite operators will be able to request contact time with their satellites via the shared AFSCN antennas and ESD 3.0 will deconflict overlapping requests, create a schedule, and publish real-time to all users. FY16 funds support ESD follow-on capability along with deferred network cyber security requirements.

**SATELLITE ANOMALY RECOVERY AND SUPPORT UPGRADE:** The Air Force will complete development testing of the enhanced High Power Amplifier (EHPA) first article. The AFSCN is in jeopardy of losing the emergency high power satellite contact capability due to obsolete parts used in the legacy AFSCN system. The EHPA program will develop a new high power amplifier that resolves the obsolescence issue well into the 2020's. FY16 funds support the transition and operational turn-over of the first EHPA.

**UNIFIED S-BAND UPGRADE:** The Air Force is adjusting the AFSCN for spectrum-sharing with industry and demonstrating the ability to migrate away from the current L-Band uplink / S-Band downlink spectrum to the Unified S-Band (USB) spectrum. RDT&E funds support a first article integration of USB into the AFSCN baseline to begin supporting factory compatibility testing.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305110F / <i>Satellite Control Network (SPACE)</i>
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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.

The FY2016 funding request was reduced by \$6.206 million to account for the availability of prior execution balances.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	35.657	20.806	14.085	-	14.085
Current President's Budget	34.488	20.806	7.879	-	7.879
Total Adjustments	-1.169	-	-6.206	-	-6.206
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.169	-			
• Other Adjustments	-	-	-6.206	-	-6.206

**Change Summary Explanation**

FY16: The FY2016 funding request was reduced by \$6.206 million to account for the availability of prior execution balances.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Remote Tracking Station (RTS) Block Change (RBC)	4.695	4.112	4.157
<b>Description:</b> RBC development replaces outdated, unique RTS equipment with standardized equipment and technology to reduce failures and enhance sustainability.			
<b>FY 2014 Accomplishments:</b> Began development of the Enhanced High Power Amplifier (EHPA) project in preparation for Preliminary Design Review.			
<b>FY 2015 Plans:</b> Continue Enhanced High Power Amplifier (EHPA) development through Critical Design Review and initial developmental testing. Provides Program Management Administration costs to execute the RBC upgrade effort.			
<b>FY 2016 Plans:</b> Continue Enhanced High Power Amplifier (EHPA) development through developmental testing and fielding. Provides Program Management Administration costs to execute the RBC upgrade effort. Analyze and begin development of modifications to address			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305110F / <i>Satellite Control Network (SPACE)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
highest priority deferred AFSCN requirements which include, but are not limited to, RBC cybersecurity enhancements and RBC Automation critical to the continued availability of the RBC system.				
<p><b>Title:</b> Unified S-band (USB) uplink</p> <p><b>Description:</b> Develop First Article Demonstration of USB uplink transmitter to enable commanding of satellites using USB frequency in addition to the legacy L-band frequency uplink commanding. Also provides FFRDC (Aerospace) support.</p> <p><b>FY 2014 Accomplishments:</b> Prepared for Preliminary Design and Critical Design Reviews.</p> <p><b>FY 2015 Plans:</b> Complete Preliminary and Critical Design Reviews; integrate and install hardware and software. Test USB with critical DOD users and conduct project completion and close-out.</p> <p><b>FY 2016 Plans:</b> N/A</p>		10.277	6.050	-
<p><b>Title:</b> Systems Engineering</p> <p><b>Description:</b> Provide test, Information Assurance (IA), requirements management, and system architecture support to the AFSCN. Also provides FFRDC (Aerospace) support.</p> <p><b>FY 2014 Accomplishments:</b> Provided test, IA, and work package planning for RBC electronics core activities; monitored RTS performance at RBC sites; continued future requirements development; update AFSCN architecture roadmap; perform Systems Engineering and Integration (SE&amp;I) activities in support of the AFSCN.</p> <p><b>FY 2015 Plans:</b> Provide test, IA, and work package planning for RBC electronics core activities; resolve design deficiencies; monitor RTS performance at RBC sites; continue future requirements development; update AFSCN architecture roadmap; perform Systems Engineering and Integration (SE&amp;I) activities in support of the AFSCN.</p> <p><b>FY 2016 Plans:</b> Provide test, IA, and work package planning for RBC electronics core activities; monitor RTS performance at RBC sites; continue future requirements development; update AFSCN architecture roadmap; perform Systems Engineering and Integration (SE&amp;I) activities in support of the AFSCN.</p>		1.954	1.499	2.904
<p><b>Title:</b> Electronic Scheduling and Dissemination System (ESD) 3.0</p>		17.562	9.145	0.818

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305110F / <i>Satellite Control Network (SPACE)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016
<p><b>Description:</b> Develop an upgrade for the aging, increasingly-unsustainable resource scheduling system needed to coordinate and manage satellite supports using the AFSCN antennas. Also provides FFRDC (Aerospace) support.</p> <p><b>FY 2014 Accomplishments:</b> Completed Segment Verification testing and final software builds.</p> <p><b>FY 2015 Plans:</b> Complete developmental and initiate operational testing.</p> <p><b>FY 2016 Plans:</b> Complete operational testing. Deliver ESD 3.0 to operations.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	34.488	20.806	7.879

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPAF: BA03: Line Item # 836760: <i>AF Satellite Control Network Space</i>	19.863	54.636	76.673	-	76.673	61.563	46.525	39.665	48.297	Continuing	Continuing

**Remarks**  
Procures the mission critical electronics and telecommunications equipment to upgrade the aging AFSCN Range and Network Operations segments.

**E. Acquisition Strategy**  
RDT&E efforts focus on completing upgrades as well as future architectures and studies to ensure the best use of investment funding. The SE&I contractor maintains the DoD Architecture Framework (DoDAF) architecture and requirements baseline for Government approval and may perform studies to determine Government options. Limited RDT&E will be applied to the Consolidated Air Force Satellite Control Network (AFSCN) Modifications, Maintenance, and Operations (CAMMO) contract when sustaining engineering expertise is needed to finalize Government-approved architectures. FFRDC technical depth and breadth will be leveraged to ensure AFSCN modernization efforts are compatible with mission rules and do not pose a risk to safe and cost-effective satellite contacts.

**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.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)					Project (Number/Name)						
3600 / 7				PE 0305110F / Satellite Control Network (SPACE)					673276 / Satellite Control Network						
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Satellite Control Network Contract	Various	Honeywell : Colorado Springs, CO	-	31.311	Dec 2013	17.588	Dec 2014	2.670	Dec 2015	-		2.670	Continuing	Continuing	TBD
Systems Engineering and Integration Contract	C/T&M	Leidos : El Segundo, CA	-	1.544	Dec 2013	0.980	Oct 2014	-		-		-	Continuing	Continuing	TBD
System Engineering and Intergration Contract	C/T&M	TBD : El Segundo, CA	-	-		-		2.904	Dec 2015	-		2.904	Continuing	Continuing	TBD
<b>Subtotal</b>			-	32.855		18.568		5.574		-		5.574	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
FFRDC support to program office management (PMA)	RO	Aerospace Corp : El Segundo, CA	-	1.633	Dec 2013	2.238	Oct 2014	2.305	Oct 2015	-		2.305	Continuing	Continuing	TBD
<b>Subtotal</b>			-	1.633		2.238		2.305		-		2.305	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305110F / <i>Satellite Control Network (SPACE)</i>				<b>Project (Number/Name)</b> 673276 / <i>Satellite Control Network</i>				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>		<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
<b>Project Cost Totals</b>	-	34.488	20.806		7.879	-	7.879	-	-	-	

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305110F / <i>Satellite Control Network (SPACE)</i>	<b>Project (Number/Name)</b> 673276 / <i>Satellite Control Network</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
USB Uplink first article contract award				■																								
USB Uplink Preliminary Design Review								■																				
USB Uplink Critical Design Review/integration/ test/Gov't accept												■																
ESD Segment Verification Test	■																											
ESD Integrated System Test												■																
ESD Gov't accept												■																
USB Enhancements, Range Automation and Cyber Security																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305110F / <i>Satellite Control Network (SPACE)</i>	<b>Project (Number/Name)</b> 673276 / <i>Satellite Control Network</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
USB Uplink first article contract award	4	2014	4	2014
USB Uplink Preliminary Design Review	1	2015	2	2015
USB Uplink Critical Design Review/integration/test/Gov't accept	2	2015	4	2016
ESD Segment Verification Test	1	2014	1	2014
ESD Integrated System Test	1	2016	1	2016
ESD Gov't accept	2	2016	2	2016
USB Enhancements, Range Automation and Cyber Security	1	2017	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305111F / <i>Weather Service</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	19.950	20.102	29.955	-	29.955	26.564	26.834	27.396	27.939	Continuing	Continuing
672738: <i>Weather Service</i>	-	19.950	20.102	29.955	-	29.955	26.564	26.834	27.396	27.939	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

This budget activity funds operational development necessary to acquire, sustain, and enhance segments of the Air Force Weather Weapon System (AFWWS). Activities also include studies and analysis to support both current program planning and execution and future program planning. Program Management Administration costs include Federally Funded Research and Development Centers and Advisory and Assistance Service. AFWWS provides timely, accurate, consistent and relevant space and atmospheric (a.k.a. terrestrial) weather information for global battlespace situational awareness. AFWWS supports worldwide operations of Air Force and Army warfighters, Special Operation Forces, and other government agencies with weather observing and forecasting capabilities at in-garrison, and deployed locations as well as centralized, reach-back capabilities. AFWWS activities align under four capability areas: Weather Data Collection, Weather Data Analysis and Dissemination, Weather Forecasting, and Product Tailoring/Warfighter Applications. This alignment ensures an integrated and systems-oriented approach to program management decisions.

Weather Data Collection provides automated atmospheric and space environmental sensing capabilities at fixed and deployed locations worldwide. Projects include Next Generation Radar (WSR-88D) and Upper Air Observing Follow-On. FY16 funding will enhance system technical performance based upon state-of-the-art signal processor technology for enhanced discrimination of precipitation types, severe weather detection, and rainfall amount estimations and will continue operationalizing new upper air sounding capability that uses laser technology.

Weather Data Analysis and Dissemination provides a net-centric infrastructure that assimilates worldwide sources of atmospheric and space weather data and produces decision-quality information for warfighters. Improved analysis of real-time weather information supports DoD's Warfighting and Enterprise Information Environment Mission Areas as well as DoD's role in transformation of the National Airspace System through the Next Generation Air Transportation System and enhances Air Force energy security plans. In FY16 Air Force Weather-Web Services (AFW-WEBS) moved into this capability area from Weather Forecasting to better align its function of integration of net-centric capabilities. FY16 funding will continue development of incremental software enhancements and integration of (1) improved analysis capabilities, including processing of data from new environmental sensing satellite sources and (2) Open Geospatial Consortium services, comprised of Web Map Services (WMS), Web Coverage Services (WCS), and Web Feature Services (WFS); which provide more impact-based information and are tailored towards specific missions/use cases.

Weather Forecasting provides advanced scientific numerical weather prediction capabilities for automated, high resolution forecast products for mission execution, rehearsal, and planning. Weather Forecasting includes projects for Numerical Weather Modeling; Weather Services - Live, Virtual, Constructive (WS-LVC, formerly Environmental Data Cube System Support), and the Space Weather Analysis and Forecast System. FY16 funding will continue development of software to integrate advanced atmospheric and space weather forecast capabilities to improve models for warfighter operations. Additionally, Weather Forecasting capabilities will

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305111F / <i>Weather Service</i>
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be expanded to both integrate and exploit data from new environmental sensing satellite sources and expanded weather products/services for Live, Virtual, and Constructive events for DoD Modeling and Simulation (M&S) users within Data Center 14866.

Product Tailoring/Warfighter Applications provide timely, local, and regional target-scale weather information to operational commanders for a given Area of Responsibility and at tactical levels they provide front-line weather information to warfighters, including weather forces, conducting combat operations. This supports the 'train as you fight' concept by assuring fixed and deployable systems have an equivalent operator look and feel. No FY16 funding is requested.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	20.643	25.102	34.205	-	34.205
Current President's Budget	19.950	20.102	29.955	-	29.955
Total Adjustments	-0.693	-5.000	-4.250	-	-4.250
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-5.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.693	-			
• Other Adjustments	-	-	-4.250	-	-4.250

**Change Summary Explanation**

- FY15 appropriation reduced by \$5M due to availability of prior year execution balances.
- FY16 reduction due higher Air Force priorities.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Next Generation Radar (NEXRAD)	0.189	0.191	0.200	-	0.200
<b>Description:</b> NEXRAD is a tri-agency program that manages a nation-wide doppler weather radar network to provide radar data and products for flight operations and resource protection. This effort was formerly included in "Weather Data Collection."					
<b>FY 2014 Accomplishments:</b>					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force			<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305111F / <i>Weather Service</i>				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>						
		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p>Participated with National Weather Service and Federal Aviation Administration to develop signal processing initiatives such as CLEAN-AP (Clutter Environment Analysis using Adaptive Parameters) and SPRT (Staggered Pulse Repetition Time).</p> <p><b>FY 2015 Plans:</b> Participate with National Weather Service and Federal Aviation Administration to fine tune and develop differential reflectivity (ZDR) calibration methods.</p> <p><b>FY 2016 Base Plans:</b> Will participate with National Weather Service and Federal Aviation Administration to develop hail size discriminator algorithms.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>						
<p><b>Title:</b> Upper Air Follow-On</p> <p><b>Description:</b> Will provide measurements of environmental conditions up to 40K feet, including factors such as wind speed and direction, pressure, temperature, and humidity, to support warfighter operations. This effort formerly included in "Weather Data Collection."</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> N/A</p> <p><b>FY 2016 Base Plans:</b> Will begin developmental efforts to operationalize technology to gather upper air environmental data.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>		-	-	1.000	-	1.000
<p><b>Title:</b> Weather Data Analysis (WDA)</p> <p><b>Description:</b> WDA provides a net-centric infrastructure that assimilates worldwide sources of atmospheric and space weather data and produces decision-quality information for warfighters. In FY15, this effort included AF Weather Web Services (AFW-WEBS) which was formerly included in "Weather Forecasting."</p>		5.309	5.500	9.750	-	9.750

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305111F / <i>Weather Service</i>				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p><b><i>FY 2014 Accomplishments:</i></b> Enhanced the capability to ingest, process, store, access, and disseminate a new generation of environmental satellite data via upgrades to the large-scale data processing, product generation, presentation system, user interface, and web services architecture.</p> <p><b><i>FY 2015 Plans:</i></b> Enhance the capability to ingest, process, store, access, and disseminate meteorological oceanographic data via upgrades to the web services architecture to expand the Open Geospatial Consortium services and improve the presentation system.</p> <p><b><i>FY 2016 Base Plans:</i></b> Will enhance the capability to ingest, process, store, access, and disseminate meteorological/oceanographic data via upgrades to the web services architecture to expand the Open Geospatial Consortium services and upgrade the large-scale data processing to accommodate new environmental satellite and numerical weather modeling data.</p> <p><b><i>FY 2016 OCO Plans:</i></b> N/A</p>						
<p><b><i>Title:</i></b> Numerical Weather Modeling (NWM)</p> <p><b><i>Description:</i></b> Provides advanced scientific numerical weather prediction capabilities for automated, high resolution forecast products for mission planning, rehearsal, and execution. This effort was formerly titled "Weather Forecasting" and included efforts that are now identified separately.</p> <p><b><i>FY 2014 Accomplishments:</i></b> Continued integration of advanced atmospheric and space weather forecast capabilities, including exploitation of a new generation of environmental sensing satellites.</p> <p><b><i>FY 2015 Plans:</i></b> Continue integration of advanced atmospheric and space weather forecast capabilities, including continued development and integration of the unified cloud detection capabilities and evaluation of satellite radiances for inclusion in atmospheric models.</p> <p><b><i>FY 2016 Base Plans:</i></b></p>		6.193	4.312	14.255	-	14.255



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305111F / <i>Weather Service</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Will continue integration of advanced atmospheric weather forecast capabilities to include improved cloud forecasting techniques and enhancement of aerosol modeling algorithms.  <b>FY 2016 OCO Plans:</b> N/A					
<b>Title:</b> Space Weather Analysis and Forecast System (SWAFS)  <b>Description:</b> The overall program objective for SWAFS is to enhance and sustain a single integrated space weather software baseline operating in a net-centric environment at all security levels within the AFWA enterprise architecture.  SWAFS is now in Spiral 2 development and focuses on new or improved capabilities identified through user feedback on SWAFS's operational capability, existing or planned near-term additional satellite and ground station space weather data sources, and existing and planned near-term models and science-based algorithms that have reached appropriate levels of technical validation.  Spiral 3 is currently planned to begin in FY 14 and will focus on advanced capabilities, such as the Full Physics-Global Assimilation of Ionospheric Measurements (FP-GAIM) model, to satisfy future requirements, including the development of other new models and science algorithms that do not currently exist and processing space weather data that is not currently available.  Capabilities provided:  Return to service; corrective, adaptive, and capability improvement maintenance for the operational software baseline  SWAFS accepts space weather data and uses models and/or algorithms to create and disseminate specified space weather analysis and forecast products  Users: COCOMs, MAJCOMs, SPADOC, NRO, Navy & Army  <b>FY 2014 Accomplishments:</b>	4.064	6.483	4.000	-	4.000

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305111F / <i>Weather Service</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p>- The FY14 SWAFS Development Delivery will include tasks for the Spiral 2 software development release. Spiral 2 is continued incremental development of capabilities to ingest, process, store, and disseminate space environmental data.</p> <p>- For the SWAFS Spiral 2 software release, the SWAFS program will further develop the Net-Centric capability with enhance the storing capability of all data needed to support current and anticipated SWAFS data processing. In addition, this will help SWAFS to distribute net-centric data to AFWA Web Service. Also, SWAFS will make updates to the software to ensure it can ingest new data such as RDATA and Deep Space Climate Observatory data. Finally SWAFS will investigate the feasibility of ingesting ionosphere parameter values into GAIM-FP.</p> <p><b>FY 2015 Plans:</b>                      The SWAFS program FY15 development will focus on integration of Global Assimilation of Ionospheric Measurements (GAIM-Full Physics model to improve ionospheric specifications and forecasts; add to the net centric data delivery of space weather to AFW-WEBS to ensure warfighter access to authoritative, deliverable, resilient, and timely space weather data/products.</p> <p>We will also continue to apply new data ingests of COSMIC2/SSAEM, GOES-R, RINEX, and GPS particle data to provide necessary data for scintillation/ionospheric modeling and and satellite anomaly attribution; and model upgrades for the auroral oval, HF comm coverage maps and point-to-point forecasts.</p> <p><b>FY 2016 Base Plans:</b>                      - The SWAFS program will continue with the Net-Centric data transition as well as SPOSCINDA 2.0 integration. SWAFS will also start working on GAIM-FP enhancements.                      - Provide return to service; corrective, adaptive, and capability improvement maintenance for the operational software baseline</p> <p><b>FY 2016 OCO Plans:</b>                      N/A</p>					
<p><b>Title:</b> Weather Services-Live, Virtual, and Constructive (WS-LVC)</p> <p><b>Description:</b> WS-LVC provides environmental representations to the DoD Modeling and simulation community. This effort was formerly previously called Environmental Data Cube System Support (EDCSS) and included in "Weather Forecasting."</p> <p><b>FY 2014 Accomplishments:</b></p>	0.500	0.690	0.750	-	0.750

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305111F / <i>Weather Service</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued incremental development of a correlated and realistic natural environment for use in tailorable scenarios to create specific effects for warfighter models and simulations.  <b>FY 2015 Plans:</b> Continue development of platform specific data and effects for Air Force assets integration into operational systems.  <b>FY 2016 Base Plans:</b> Will continue incremental development of Air and Space Natural Environment data and associated effects for use in tailorable scenarios within warfighter models and simulations.  <b>FY 2016 OCO Plans:</b> N/A					
<b>Title:</b> Joint Environmental Toolkit (JET)  <b>Description:</b> JET provides timely, local and regional target-scale weather information to operational commanders for a given Area of Responsibility, and at tactical levels provides weather information to front-line warfighters in support of combat operations. This effort was formerly titled "Product Tailoring/Warfighter Applications."  <b>FY 2014 Accomplishments:</b> Developed and fielded enhanced software to support weather warnings, pilot briefings, and weather forecaster continuity of operations for regional and tactical weather operations, as well as improved integration with warfighter C4I systems.  <b>FY 2015 Plans:</b> Continue software development and integration of regional and tactical weather systems and integration with warfighter command and control systems.  <b>FY 2016 Base Plans:</b> N/A  <b>FY 2016 OCO Plans:</b> N/A	3.695	2.926	-	-	-
<b>Accomplishments/Planned Programs Subtotals</b>	19.950	20.102	29.955	-	29.955

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

**Appropriation/Budget Activity**  
 3600: *Research, Development, Test & Evaluation, Air Force / BA 7: Operational Systems Development*

**R-1 Program Element (Number/Name)**  
 PE 0305111F / *Weather Service*

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

Line Item	FY 2014	FY 2015	FY 2016	FY 2016	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Cost To	
			Base	OCO	Total					Complete	Total Cost
• OPAF: BA07: Line Item # 833070: <i>Weather Observation Forecast</i>	16.171	16.309	21.561	-	21.561	20.759	23.902	21.524	21.905	Continuing	Continuing
• OPAF: BA07: Line Item # 837100: <i>Tactical C-E Equipment</i>	-	-	-	-	-	-	-	-	-	Continuing	Continuing
• OPAF: BA07: Line Item # 838010: <i>Comm Elect Mods</i>	6.912	12.075	8.492	-	8.492	11.421	10.134	8.905	9.064	Continuing	Continuing
• OPAF: BA07: Line Item # 86190A: <i>Spares and Repair Parts</i>	1.146	1.605	0.278	-	0.278	0.990	0.939	0.803	0.817	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

AF Weather employs an incremental development strategy with a series of incremental Initial Operational Capabilities (IOCs) and software releases to enable rapid development and fielding of capabilities using 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305111F / <i>Weather Service</i>	<b>Project (Number/Name)</b> 672738 / <i>Weather Service</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SWAFS, WDA, NWM. Development and integration of weather forecast software	C/CPAF	Northrop Grumman : Bellevue, NE	-	5.635	Mar 2014	-		-		-		-	Continuing	Continuing	-
SWAFS, WDA, NWM. Continued development and integration of weather forecast software	C/CPIF	Northrop Grumman : Bellevue, NE	-	-		6.579	Mar 2015	4.000	Mar 2016	-		4.000	Continuing	Continuing	-
WDA. Development and integration of weather analysis software	C/CPFF	Raytheon : Long Beach, CA	-	2.732	May 2014	2.836	Feb 2015	9.750	Dec 2015	-		9.750	Continuing	Continuing	-
JET. Integrate weather systems with warfighter C4I systems	C/CPIF	Raytheon : Omaha, NE	-	2.878	Apr 2014	1.702	Jan 2015	-		-		-	Continuing	Continuing	-
NWM. Improve numerical weather prediction	MIPR	NCAR : Boulder, CO	-	4.100	Feb 2014	1.598	Feb 2015	-		-		-	Continuing	Continuing	-
NWM. Improve weather forecast capabilities	MIPR	NASA : Greenbelt, MD	-	0.700	Feb 2014	0.670	Feb 2015	-		-		-	Continuing	Continuing	-
NWM. Enhance weather forecast output	TBD	Not specified. : ,	-	-		-		14.255	Jan 2016	-		14.255	Continuing	Continuing	-
Various	Various	Various : Various,	-	1.846	Feb 2014	3.353	Feb 2015	0.750	Feb 2016	-		0.750	Continuing	Continuing	-
<b>Subtotal</b>			-	17.891		16.738		28.755		-		28.755	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-





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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305111F / <i>Weather Service</i>	<b>Project (Number/Name)</b> 672738 / <i>Weather Service</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Collection - Next Generation Radar	1	2014	4	2020
Collection -- Upper Air Sensing	1	2014	4	2019
Analysis -- Weather Data Analysis	1	2014	1	2020
Weather Data Analysis Inc 4 Build B Delivery	4	2014	3	2015
Weather Data Analysis Inc 4 Build C Delivery	2	2015	4	2017
Weather Data Analysis Inc 4 Build D Delivery (MS C)	4	2017	1	2020
Forecasting -- Numerical Weather Modeling	1	2014	4	2020
Forecasting -- Live, Virtual, and Constructive Weather Services	1	2014	4	2020
Forecasting -- Live, Virtual, and Constructive 1.0 Delivery (MS C)	2	2014	1	2016
Forecasting -- Live, Virtual, and Constructive 1.1 Delivery	2	2015	3	2016
Forecasting -- Live, Virtual, and Constructive 1.2 Delivery	2	2016	3	2017
Forecasting -- Space Weather Anaylsis & Forecasting System	1	2014	1	2020
Forecasting--SWAFS Software Delivery Upgrade V.61	3	2015	3	2016
Forecasting--SWAFS Software Delivery Upgrade V.62	3	2016	3	2017
Product Tailoring/Warfighter Applications-- Inc 2 Build C Delivery	3	2014	4	2015



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>					<b>R-1 Program Element (Number/Name)</b> PE 0305114F / <i>Air Traffic Control, Approach, and Landing System (ATCALs)</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	-	31.920	26.087	21.485	-	21.485	9.867	6.349	6.378	6.557	Continuing	Continuing
673587: <i>Air Traffic Control Systems</i>	-	31.920	26.087	21.485	-	21.485	9.867	6.349	6.378	6.557	Continuing	Continuing
Quantity of RDT&E Articles	-	-	1	-	-	-	-	-	-	-		

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

To support the Air Force worldwide flying mission, this program element funds research, development and management of new air traffic control communications, surveillance, positioning, and precision approach and landing systems. When applicable, this includes joint efforts with the Federal Aviation Administration (FAA) and coordination with the International Civil Aviation Organization and the North Atlantic Treaty Organization (NATO). ATCALs development funding currently focuses on the Deployable Radar Approach Control (D-RAPCON) and Next Generation (NextGen) Air Transportation System (ATS) programs as described below.

Deployable Radar Approach Control (D-RAPCON). D-RAPCON will replace the 40 year old AN/MPN-14K and AN/TPN-19 Airport Surveillance Radar (ASR) and Operations Shelter (OPS) subsystems with state of the art digital systems. Modification and overhaul of the existing systems has proven to be ineffective due to diminishing manufacturing sources. On average, no more than three of the existing 17 systems are deployable at any given time. D-RAPCON will provide aircraft surveillance/sequencing, air traffic control communications, and automation capabilities for terminal area air traffic control operations. D-RAPCON will also be deployed with a fixed base or deployable Instrument Landing System and a fixed or mobile control tower to provide a complete air traffic control capability. The D-RAPCON will support tactical military and worldwide humanitarian operations and also provide a capability to support domestic disaster relief. The primary surveillance radar coverage (non-cooperative targets) is out to 60 nautical miles (nm) and the secondary surveillance radar coverage (cooperative targets) is out to 120 nm. The D-RAPCON CDD was approved by the Air Force Requirements Oversight Council on 8 Feb 11. FY16 funds will complete contractor test and developmental testing (DT) and perform any deficiency review work necessary. In FY16, the program office will also be preparing for the MS C decision which must be approved to enter Full Rate Production (FRP). Six certifications are required prior to FRP; Air Traffic Control Radar Beacon System, Identification Friend or Foe, Mark XII/Mark XIIA Systems Certification, National Air Space Certification, Shelter/Transportability Certification, Electro-Magnetic Spectrum certification and frequency allocation and authority to radiate approvals, Information Assurance Certification, and Accreditation and Interoperability and Supportability Certification. Related OPAF funds are in the PE 0305114F Weapon System Code 833010.

Next Generation (NextGen) Air Transportation System (NextGen ATS). This is an interagency effort designed to enable the transition from a ground infrastructure dominated Air Traffic Management capability for the U.S. National Airspace System (NAS) to a capability that leverages advances in Performance Based Navigation (PBN), non-radar based surveillance services, and transition from solid-state analogue voice communications to networked digital voice and data exchange. Per Deputy Secretary of Defense direction (28 Dec 07 Memo), the Air Force is the DoD lead Service for NextGen ATS implementation and architecture development. NextGen ATS will be built on key elements from existing programs and technologies and on new systems under development. As these technologies and architectures mature, ground system upgrades will be coordinated and fielded concurrently with aircraft avionics capabilities that are acquired and integrated into Air Force aircraft (manned and unmanned). These efforts are a subset of the Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM) program in PE 0305099F and

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / <i>Air Traffic Control, Approach, and Landing System (ATCALs)</i>
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will involve aircraft avionics as well as fixed based and deployable air traffic control and landing systems. FY16 efforts will continue to use the newly developed Lead Service Office (LSO) Enterprise Architecture process to develop a NextGen DoD Strategic Roadmap, Integrated Master Schedule and Command and Control Core Function Support Plan, outlining DoD and Air Force equities and required requirements documentation, via in-depth analysis of FAA Next programs and timelines. Portfolio analysis will be captured in DoD NextGen ATS charters to guide Services through a broad and complex NextGen ATS environment. To minimize integration costs, the LSO and Joint Program Offices will also assist aircraft depots, program offices, and major commands in combining military (Mode-5 Identification Friend or Foe (IFF), Global Positioning System (GPS) Military (M)-Code) and civil avionics upgrades, including Automatic Dependent Surveillance Broadcast (ADS-B), Electronic Flight Bags, DataComm and Navigation. To support program office NextGen ATS decision making, the LSO will also develop supporting infrastructure tools, such as a CNS/ATM Global Mandates Database (GAIMS) and a DoD Avionics Equipage Repository (F-WAR). The LSO is also developing a Decision Support Tool to serve as a one-stop website for DoD NextGen ATS, containing all plans and material. Further proof of concept demonstrations and analysis will also be undertaken to explore transportable and fixed-base Remotely Piloted Aircraft (RPA) Ground Based Sense and Avoid (GBSAA) capability, development/test of new Instrument Procedures Development System (IPDS) software (joint effort with FAA and Services). In total, these efforts will focus on enabling DoD aircraft to take advantage of NextGen envisioned NAS efficiencies, developing policies/procedures to avoid adverse costs while ensuring airspace access, seamlessly integrating RPAs into the NAS and other non-NAS/international airspaces, improving the display of aircraft position to air traffic controllers, determining future requirements for digital communications with manned and unmanned aircraft, and enhancing flight safety.

Activities also 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, 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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	32.894	23.516	6.654	-	6.654
Current President's Budget	31.920	26.087	21.485	-	21.485
Total Adjustments	-0.974	2.571	14.831	-	14.831
• Congressional General Reductions	-	-0.429			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	3.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.974	-			
• Other Adjustments	-	-	14.831	-	14.831

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

**Project:** 673587: *Air Traffic Control Systems*

FY 2014	FY 2015

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / <i>Air Traffic Control, Approach, and Landing System (ATCALs)</i>
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**Congressional Add Details (\$ in Millions, and Includes General Reductions)**

Congressional Add: *Ground Based Sense and Avoid (GBSAA)*

Congressional Add Subtotals for Project: 673587

Congressional Add Totals for all Projects

	FY 2014	FY 2015
	3.500	3.000
	3.500	3.000
	3.500	3.000

**Change Summary Explanation**

FY16 funding increase:

D-RAPCON increased \$11.892M to fund program to current cost estimate and move Milestone C decision from FY16 to FY17. The Milestone C move was result of only one pre-production unit (vice two) being funded for testing which extended the timeline for developmental and operational testing.

NextGen ATS increased \$2.939M to support continued implementation of Remotely Piloted Aircraft (RPA) Ground Based Sense and Avoid (GBSAA) technology, Instrument Procedures Development System (IPDS) software development, Lead Service and Joint Program Office technical assessments and development of implementation schedules/priorities for NextGen aircraft/ground system capabilities jointly with new military capabilities such as Mode-5 Identification Friend or Foe (IFF) and Global Positioning System (GPS) Military (M)-Code.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p><b>Title:</b> NextGen ATS</p> <p><b>Description:</b> Includes efforts to implement NextGen efficiencies and capabilities. Focus is on Automatic Dependent Surveillance Broadcast (ADS-B) implementation, seamlessly integrating Remotely Piloted Aircraft (RPA) into civil airspace, Instrument Procedure Development System (IPDS) software development, Lead Service Office technical support/architecture development, development of aircraft performance based navigation avionics roadmaps, and surveillance radar/automation system upgrades.</p> <p><b>FY 2014 Accomplishments:</b> Continued efforts to implement NextGen ATS efficiencies. Tasks included a capability assessment of ADS-B equipment at McGuire/Nellis AFBs, approval of an operational RPA GBSAA capability at Cannon AFB, the start of IPDS software development, continuation of Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) Initial Capabilities Document (ICD) preparation, capability mapping, preparation of implementation roadmaps, Concept of Operations, Implementation Plans, Performance Based Navigation (PBN)</p>	5.569	3.346	5.203	-	5.203

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force			<b>Date:</b> February 2015			
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>						
and ADS-B benefits/business case development, and engineering analysis to integrate Mode 5 Identification Friend or Foe (IFF) capability into the D-RAPCON surveillance radar and automation system.						
<b>FY 2015 Plans:</b>						
<ul style="list-style-type: none"> <li>- Initiate development of NextGen ATS DoD Strategic Roadmap and Integrated Master Schedule through NextGen ATS charter analysis.</li> <li>- Develop supporting infrastructure tools, such as a CNS/ATM Global Mandates (GAIMS) Database and a DoD Avionics Equipage Repository (F-WAR).</li> <li>- Continue assessment of DoD GPS suitability for ADS-B out integration.</li> <li>- Continue GBSAA solutions for Syracuse, NY ANGB in joint development with the Army (DoD GBSAA lead).</li> <li>- Continue development of IPDS software and D-RAPCON Mode 5 IFF integration.</li> </ul>						
<b>FY 2016 Base Plans:</b>						
<ul style="list-style-type: none"> <li>- Will continue assistance to program offices to combine Mode-5 Identification Friend or Foe (IFF), Global Positioning System (GPS) Military (M)-Code) and civil avionics upgrades.</li> <li>- Champion ADS-B equipage solutions through demos and outreach.</li> <li>- Execute analysis on 2-3 additional NextGen ATS programs and capture results thru charters to further develop the NextGen ATS DoD Strategic Roadmap and Integrated Master Schedule.</li> <li>- Develop solutions to integrate DataComm equipage into DoD fleets, advance electronic flight bag applications and standardization, and analyze impacts to DoD of FAA radar divestiture plans.</li> <li>- Will complete development of IPDS software, continue GBSAA transportable/scalable development at Syracuse, NY ANGB in joint effort with the Army.</li> <li>- Through the Lead Service and Joint Program Offices, will also develop implementation schedules and establish priorities for NextGen ATS aircraft and ground system capabilities. Focus will be on combining military Mode-5 IFF, GPS M-Code, and civil avionics upgrades ADS-B.</li> <li>- Complete preparation of engineering change proposal to integrate Mode-5 IFF into D-RAPCON surveillance radar and automation system.</li> </ul>						
<b>FY 2016 OCO Plans:</b>						
N/A						
<b>Title:</b> D-RAPCON		22.276	19.741	16.282	-	16.282
<b>Description:</b> Effort supports D-RAPCON engineering, manufacturing and development (EMD) effort and government developmental and operational testing of one PPU leading to a production decision in FY17.						

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force				<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305114F / <i>Air Traffic Control, Approach, and Landing System (ATCALs)</i>				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>						
		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p><b><i>FY 2014 Accomplishments:</i></b> Continued EMD effort. Tasks included completion of the Preliminary Design Review in Nov 13, completion of the Critical Design Review in Jul 14, the start of PPU fabrication, sub-contractor factory acceptance testing and preparation for contractor testing and Federal Aviation Administration certifications efforts.</p> <p><b><i>FY 2015 Plans:</i></b> Complete fabrication of the PPU and government approval of contractor test plans and procedures in support of the Test Readiness Review in Apr 15 and contractor system testing through Sep 15.</p> <p><b><i>FY 2016 Base Plans:</i></b> - Will complete contractor testing, developmental testing (DT) and deficiency review work as necessary. - In parallel, the program office will also prepare for the MS C decision for entry into Full Rate Production (FRP). Six certifications are required prior to FRP; Air Traffic Control Radar Beacon System, Identification Friend or Foe, Mark XII/Mark XIIA Systems Certification, National Air Space Certification, Shelter/Transportability Certification, Electro-Magnetic Spectrum certification and frequency allocation and authority to radiate approvals, Information Assurance Certification, and Accreditation and Interoperability and Supportability Certification.</p> <p><b><i>FY 2016 OCO Plans:</i></b> N/A</p>						
<p><b><i>Title:</i></b> D-ILS</p> <p><b><i>Description:</i></b> Supports restructure of program after termination of EMD contract on 6 Nov 13. Using an updated System Requirements Document developed from the terminated EMD contract, program now based on a Foreign Comparative Test (FCT) of a production ready system.</p> <p><b><i>FY 2014 Accomplishments:</i></b> Effort focused on proceeding with procurement under a Foreign Comparative Test program. Tasks included update of the System Requirements Document to capture lessons learned, issuance of an industry request for information, evaluation of responses, and conduct of FCT evaluation of a production ready system.</p> <p><b><i>FY 2015 Plans:</i></b> N/A</p> <p><b><i>FY 2016 Base Plans:</i></b></p>		0.575	-	-	-	-

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / <i>Air Traffic Control, Approach, and Landing System (ATCALs)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
N/A					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	28.420	23.087	21.485	-	21.485

<b>Congressional Add: Ground Based Sense and Avoid (GBSAA)</b>	<b>FY 2014</b>	<b>FY 2015</b>
<b>FY 2014 Accomplishments:</b> Proceeded with procurement under a Foreign Comparative Test program. Tasks included update of the System Requirements Document to capture lessons learned, issuance of an industry request for information, evaluation of responses, and conduct of FCT evaluation of a production ready system.  <b>FY 2015 Plans:</b> Continues development and procurement of a transportable GBSAA system for the ANG. Tasks include exercise of production option on Army contract for 3D radar, integration with Ground Control station software and displays, and test and evaluation of a pre-production system.	3.500	3.000
<b>Congressional Adds Subtotals</b>	3.500	3.000

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPAF: BA03: Line Item # 833010: <i>Air Traffic Control and Landing Systems</i>	32.118	28.400	31.823	-	31.823	87.329	74.479	87.089	773.553	Continuing	Continuing
• OPAF: BA03: Line Item # 833020: <i>National Airspace System</i>	4.381	4.114	3.628	-	3.628	-	-	-	-	-	12.179
• OPAF: BA 03: Line Item # 838010: <i>Comm Elect Mods</i>	13.912	14.568	3.980	-	3.980	12.889	5.380	1.218	1.239	Continuing	Continuing
• OPAF: BA 05: Line Item # 861900: <i>Spares and Repair Parts</i>	2.753	5.987	2.775	-	2.775	6.913	4.741	2.110	2.449	Continuing	Continuing

**Remarks**

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / <i>Air Traffic Control, Approach, and Landing System (ATCALs)</i>	
<b>E. Acquisition Strategy</b> The acquisition strategy for D-RAPCON is based on award of a competitive fixed price incentive firm contract emphasizing off-the-shelf technology and maximizing the use of non-developmental items (NDIs). The contract includes engineering, manufacturing and development and test effort with follow-on firm fixed price production options.  Procurement of a NextGen transportable GBSAA 3D radar for ANG will be thru an existing Army contract.  NextGen ATS Enterprise Architecture Implementation Tasks funded via MIPRs and Project Orders with various organizations (FAA, MITRE, Air Force Flight Standards Agency)		
<b>F. Performance Metrics</b> 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.		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / Air Traffic Control, Approach, and Landing System (ATCALs)	<b>Project (Number/Name)</b> 673587 / Air Traffic Control Systems
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NextGen ATS Instrument Procedure Development System (IPDS)	MIPR	FAA : Washington, DC	-	1.810	Apr 2014	1.397	Mar 2015	1.000	Apr 2016	-		1.000	Continuing	Continuing	-
D-RAPCON	C/FPIF	Raytheon : Marlborough, MA	-	17.056	Feb 2014	13.290	Feb 2015	7.728	Feb 2016	-		7.728	Continuing	Continuing	-
GBSAA ANG	MIPR	Army : Various, MA	-	3.500	Feb 2015	3.000	Jul 2015	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	22.366		17.687		8.728		-		8.728	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NextGen ATS Lead Service Office Technical Support/Requirements Documentation	MIPR	FAA : Washington, DC	-	0.550	Apr 2014	1.425	Apr 2015	2.677	Apr 2016	-		2.677	Continuing	Continuing	-
NextGen ATS GPS Assessment	WR	MITRE : Hanscom AFB, MA	-	0.535	Jan 2014	-		-		-		-	Continuing	Continuing	-
NextGen AFFSA T/E	WR	MITRE : Hanscom AFB, MA	-	0.300	Jan 2014	0.307	Jan 2015	0.300	Jan 2016	-		0.300	Continuing	Continuing	-
NextGen ATS Support Cost	WR	Various : Various,	-	0.880	Dec 2013	0.217	Dec 2014	0.664	Dec 2015	-		0.664	Continuing	Continuing	-
D-RAPCON Support Cost	MIPR	Various : Various,	-	0.290	Dec 2013	0.765	Dec 2014	0.785	Dec 2015	-		0.785	Continuing	Continuing	-
<b>Subtotal</b>			-	2.555		2.714		4.426		-		4.426	-	-	-

**Remarks**  
 Various contract types, performing activity and city/states are result of the use of Military Interdepartmental Purchase Requests, Purchase Requests, Project Orders, etc that are sent to multiple agencies in support of some tasks.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / Air Traffic Control, Approach, and Landing System (ATCALs)	<b>Project (Number/Name)</b> 673587 / Air Traffic Control Systems
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NextGen ATS RPA GBSAA Demo	WR	MITRE : Bedford, MA	-	1.251	Jan 2014	-		-		-		-	Continuing	Continuing	-
NextGen ATS Surveillance Radar/Automation System Upgrades	WR	Various : Various,	-	0.243	Jun 2014	-		0.562	Jun 2016	-		0.562	Continuing	Continuing	-
D-RAPCON	WR	Various : Various,	-	0.930	Mar 2014	0.780	Mar 2015	1.316	Mar 2016	-		1.316	Continuing	Continuing	-
<b>Subtotal</b>			-	2.424		0.780		1.878		-		1.878	-	-	-

**Remarks**  
Various contract types, performing activity and city/states are result of the use of Military Interdepartmental Purchase Requests, Purchase Requests, Project Orders, etc that are sent to multiple agencies in support of some tasks.

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA) - D-RAPCON	WR	AFCLCMC/HBA : Bedford, MA	-	4.000	Apr 2014	4.906	Apr 2015	6.453	Mar 2016	-		6.453	Continuing	Continuing	-
Program Management Administration (PMA) - D-ILS	WR	AFCLCMC/HBA : Bedford, MA	-	0.575	Oct 2013	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	4.575		4.906		6.453		-		6.453	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	31.920	26.087	21.485	-	21.485	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / Air Traffic Control, Approach, and Landing System (ATCALs)	<b>Project (Number/Name)</b> 673587 / Air Traffic Control Systems

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
NextGen ATS ADS-B McGuire/Nellis AFB	██████████																											
NextGen ATS GBSAA Cannon/AFSOC IOC	██																											
NextGen ATS GBSAA Cannon/AFSOC Operations/Sustainment																												
NextGen ATS GBSAA Syracuse/ANG CA					██																							
NextGen ATS GBSAA Syracuse/ANG Test									██																			
NextGen ATS GBSAA Syracuse/ANG Cert									██████████																			
NextGen ATS GBSAA Syracuse/ANG IOC													██															
NextGen ATS Instrument Procedure Development System (IPDS) Software Dev	██████████																											
NextGen ATS IPDS Test					██████████																							
NextGen LSO/JPO Enterprise Architecture Implementation	██████████				██████████				██████████				██████████				██████████				██████████							
NextGen ATS Surveillance Radar and Automation System Upgrade Mode 5 IFF Int	██████████				██████████				██████████				██████████				██████████				██████████							
NextGen ATS Terminal Flight Data Management Sys OUE Vance/Altus													██████████				██████████				██████████							
D-RAPCON	██████████				██████████				██████████				██████████				██████████				██████████							
D-RAPCON PDR	██																											
D-RAPCON CDR	██████████																											
D-RAPCON CT					██████████																							
D-RAPCON DT									██████████																			
D-RAPCON DR													██															
D-RAPCON Milestone C													██															
D-RAPCON OT													██████████															
D-RAPCON OT Quick Look Report													██															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / Air Traffic Control, Approach, and Landing System (ATCALs)	<b>Project (Number/Name)</b> 673587 / Air Traffic Control Systems
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
D-RAPCON Prod Dec																												
D-RAPCON IOC																												
D-ILS Restructure																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / Air Traffic Control, Approach, and Landing System (ATCALs)	<b>Project (Number/Name)</b> 673587 / Air Traffic Control Systems

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NextGen ATS ADS-B McGuire/Nellis AFB	1	2014	4	2014
NextGen ATS GBSAA Cannon/AFSOC IOC	1	2014	1	2014
NextGen ATS GBSAA Cannon/AFSOC Operations/Sustainment	2	2014	4	2020
NextGen ATS GBSAA Syracuse/ANG CA	2	2015	2	2015
NextGen ATS GBSAA Syracuse/ANG Test	4	2015	4	2015
NextGen ATS GBSAA Syracuse/ANG Cert	1	2016	2	2016
NextGen ATS GBSAA Syracuse/ANG IOC	3	2016	3	2016
NextGen ATS Instrument Procedure Development System (IPDS) Software Dev	2	2014	3	2015
NextGen ATS IPDS Test	3	2015	2	2016
NextGen LSO/JPO Enterprise Architecture Implementation	1	2014	4	2020
NextGen ATS Surveillance Radar and Automation System Upgrade Mode 5 IFF Int	2	2014	4	2016
NextGen ATS Terminal Flight Data Management Sys OUE Vance/Altus	1	2017	3	2018
D-RAPCON	1	2014	4	2020
D-RAPCON PDR	1	2014	1	2014
D-RAPCON CDR	2	2014	4	2014
D-RAPCON CT	3	2015	4	2015
D-RAPCON DT	1	2016	3	2016
D-RAPCON DR	4	2016	4	2016
D-RAPCON Milestone C	4	2016	4	2016
D-RAPCON OT	1	2017	2	2017
D-RAPCON OT Quick Look Report	2	2017	2	2017
D-RAPCON Prod Dec	2	2017	2	2017

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305114F / <i>Air Traffic Control, Approach, and Landing System (ATCAL)</i>	<b>Project (Number/Name)</b> 673587 / <i>Air Traffic Control Systems</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
D-RAPCON IOC	3	2018	3	2018
D-ILS Restructure	1	2014	3	2014

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	10.616	8.639	2.515	-	2.515	3.081	2.357	1.460	1.519	Continuing	Continuing
675136: <i>Target Systems Development</i>	-	2.477	3.869	0.842	-	0.842	1.934	1.933	1.460	1.519	Continuing	Continuing
675366: <i>QF-16</i>	-	8.139	4.770	1.673	-	1.673	1.147	0.424	-	-	-	16.153

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

Full-scale and subscale targets assure warfighter's weapon systems will perform effectively against real-world enemy fighters and cruise missiles. Aerial Targets provide adherence to Public Law Title 10, Section 2366 "Live Fire/Lethality" developmental/operational test requirements. Target drones are used to validate operational missile/weapon system effectiveness and fighter Operational Flight Program (OFP) updates. Target drones are essential for development testing/operational testing for all air-to-air and surface-to-air missiles, and for the F-22A, F-35, F-18, F-16, F-15, etc., aircraft. The objective is to provide realistic targets for missile testing to enable the development of offensive counter-air systems (air-to-air and surface-to-air) capable of defeating changing enemy airborne threats. This program element funds development, improvements, and updates of full-scale/subscale aerial targets and target control systems to ensure aerial targets represent enemy threat airborne systems. Specialized target payload subsystems are developed for requirements to include but not limited to missile scoring, electronic attack, electronic countermeasures and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing 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.

The FY2016 funding request was reduced by \$2.350 million to account for the availability of prior execution balances.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	17.773	8.639	8.483	-	8.483
Current President's Budget	10.616	8.639	2.515	-	2.515
Total Adjustments	-7.157	-	-5.968	-	-5.968
• Congressional General Reductions	-	-	-	-	-
• Congressional Directed Reductions	-	-	-	-	-
• Congressional Rescissions	-	-	-	-	-
• Congressional Adds	-	-	-	-	-
• Congressional Directed Transfers	-	-	-	-	-
• Reprogrammings	-6.893	-	-	-	-
• SBIR/STTR Transfer	-0.264	-	-	-	-
• Other Adjustments	-	-	-5.968	-	-5.968

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force Date: February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>
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**Change Summary Explanation**

FY14: -\$6.893 million reprogrammed in the FY14 OMNIBUS for higher Air Force priorities.

FY16: \$3.618 million reprogrammed in support of higher Air Force priorities, escalation.

\$2.350 million reduced to better align funding with the development schedule.



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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675136 / <i>Target Systems Development</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675136: <i>Target Systems Development</i>	-	2.477	3.869	0.842	-	0.842	1.934	1.933	1.460	1.519	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Full-scale aerial targets, subscale aerial targets, and companion Target Control Systems (TCS) assure the effectiveness and currency of warfighter weapon systems to combat real-world enemy fighters and cruise missiles. The BQM-167A Air Force Subscale Aerial Target (AFSAT) is a jet-powered drone aircraft measuring approximately 20 feet long with a mission to simulate threat aircraft for testing and evaluation of surface-to-air, ship-to-air, or air-to-air missiles. The target accomplishes this mission through the use of optional payloads including chaff and flare, electronic attack, and infrared devices. Funding supports continued improvement of launch phase performance and overall performance enhancement efforts. Funding supports development, improvements, and updates of target control systems and specialized target payload subsystems for requirements to include but not limited to missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems. Electronic Attack (EA) pod upgrade provides new techniques and capabilities critical to subscales to realistically emulate foreign threat systems. TCS provides a myriad of sub-systems that together delivers the capability to control and track mission aerial targets (full scale and subscale) and to track a mix of other critical mission participants (to include relay platforms, shooters, and the missile system under test). In this role, TCS ensures an optimum integrated aerial target environment that enhances both weapon system assessments and companion aircrew skills, all the while assuring the full safety of mission participants throughout the conduct and fulfillment of T&E objectives. Funding supports continued improvement (modernization) of TCS capabilities to effectively meet the multi-service T&E demands of current and future warfighter weapon systems.

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> BQM-167A Development	0.587	0.447	0.049
<b>Description:</b> Provide enhancements to the radar cross section and infrared signature with accompanying test and integration. Begin development activities for an alternate launch system.			
<b>FY 2014 Accomplishments:</b> Continued RCS implementation and BQM-167A improvement efforts. Conducted research and analysis on potential affordable, subscale aerial target platform concepts that represent 4th and 5th generation threat capabilities/characteristics and support user requirements generation and acquisition actions to procure a follow-on vehicle and alternate launch capabilities to the current AFSAT platform.			
<b>FY 2015 Plans:</b> Continue RCS implementation and BQM-167A improvement efforts. Conduct research and analysis on potential affordable, subscale aerial target platform concepts that represent 4th and 5th generation threat capabilities/characteristics and support user			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675136 / <i>Target Systems Development</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>requirements generation and acquisition actions to procure a follow-on vehicle and alternate launch capabilities to the current AFSAT platform. Begin development activities and improve target endurance.</p> <p><b>FY 2016 Plans:</b> Continue RCS implementation and BQM-167A improvement efforts. Conduct research and analysis on potential affordable, subscale aerial target platform concepts that represent 4th and 5th generation threat capabilities/characteristics and support user requirements generation and acquisition actions to procure a follow-on vehicle and alternate launch capabilities to the current AFSAT platform. Continue development activities and improve target endurance.</p>				
<p><b>Title:</b> Target Control System</p> <p><b>Description:</b> Provide system modernization enhancements to Target Control System (Gulf Range Drone Control System, GRDCS) for command and control and tracking of Aerial Targets.</p> <p><b>FY 2014 Accomplishments:</b> Continued system modernization enhancements to Target Control System to include but not limited to GRDCS Modernization, Advanced Command Destruct System RF capabilities upgrade for command and control and tracking of Aerial Targets, Loss of Carrier (LOC) Waypoint, and completed data link system - replacement (DLS-r) prototype development.</p> <p><b>FY 2015 Plans:</b> Continue system modernization enhancements to include but not limited to Target Control System for command and control, tracking of Aerial Targets, Utah Test and Training Range (UTTR) Upgrade, and Loss of Carrier (LOC) Waypoint.</p> <p><b>FY 2016 Plans:</b> Continue system modernization enhancements to include but not limited to Target Control System for command and control, tracking of Aerial Targets, Utah Test and Training Range (UTTR) Upgrade, and Loss of Carrier (LOC) Waypoint.</p>		1.890	2.922	0.699
<p><b>Title:</b> Digital Radio Frequency Memory (DRFM)</p> <p><b>Description:</b> Upgrade existing and develop new electronic attack (EA) pod hardware and software used on QF-4, QF-16, and subscales to emulate adversary EA tactics and techniques.</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> Upgrade existing and develop new EA pod hardware and software used on QF-4, QF-16, and subscales to emulate adversary EA tactics and techniques.</p> <p><b>FY 2016 Plans:</b></p>		-	0.500	0.094

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675136 / <i>Target Systems Development</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016
Upgrade existing and develop new electronic attack (EA) pod hardware and software used on QF-4, QF-16, and subscales to emulate adversary EA tactics and techniques.			
<b>Accomplishments/Planned Programs Subtotals</b>	2.477	3.869	0.842

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APAF:BA04: Line Item # 10TRGT: <i>Target Drones</i>	123.669	98.576	132.028	-	132.028	138.541	142.208	137.931	141.175	Continuing	Continuing
• APAF: BA06: Line Item # 000999: <i>Initial Spares/Repair Parts</i>	1.750	0.653	0.558	-	0.558	0.600	0.600	0.589	0.599	Continuing	Continuing
• APAF: BA07: Line Item # 000074: <i>War Consumables</i>	-	5.212	4.427	-	4.427	4.500	4.590	4.674	4.753	Continuing	Continuing
• APAF: BA07: Line Item # 000075: <i>Other Production Charges</i>	13.515	21.307	7.969	-	7.969	13.655	13.264	11.862	12.029	Continuing	Continuing
• OPAF: BA03: Line Item # 834190: <i>Combat Training Ranges</i>	2.492	3.054	-	-	-	-	-	-	-	-	-

**Remarks**

**D. Acquisition Strategy**  
The AFSAT acquisition strategy is sole source follow-on with fixed price and time and materials contracts. The Target Control System acquisition strategy includes several small projects to provide enhancements to Target Control System (to include GRDCS) and will be accomplished with other government agencies and contracts as needed.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675136 / <i>Target Systems Development</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Air Force Subscale Aerial Target (AFSAT) Product Improvements	SS/FFP	NAWC : Pt Mugu, CA	-	0.587	Jan 2014	0.447	Jan 2015	0.049	Jan 2016	-		0.049	Continuing	Continuing	-
Target Control System	Various	Various : ,	-	1.430	Jan 2014	2.478	Jan 2015	0.479	Jan 2016	-		0.479	Continuing	Continuing	-
Digital Radio Frequency Memory (DRFM)	Various	Various : Pt Mugu, CA	-	-		0.500	Jan 2015	0.094	Jan 2016	-		0.094	Continuing	Continuing	-
<b>Subtotal</b>			-	2.017		3.425		0.622		-		0.622	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Target Control System Program Management Administration (PMA)	Various	Various : Eglin AFB, FL	-	0.460		0.444		0.220		-		0.220	Continuing	Continuing	-
<b>Subtotal</b>			-	0.460		0.444		0.220		-		0.220	-	-	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675136 / <i>Target Systems Development</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020											
	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								
BQM-167A: RCS Implementation																																				
BQM-167A: Alternate Launch Activity																																				
TCS: Modernization																																				
Utah Test and Training Range (UTTR) Upgrade																																				
Loss of Carrier (LOC) Waypoint																																				
TCS: Advanced Command Destruct Systems (ACDS) Development																																				

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675136 / <i>Target Systems Development</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BQM-167A: RCS Implementation	1	2014	2	2016
BQM-167A: Alternate Launch Activity	3	2017	4	2020
TCS: Modernization	1	2014	4	2020
Utah Test and Training Range (UTTR) Upgrade	1	2015	2	2016
Loss of Carrier (LOC) Waypoint	2	2014	2	2016
TCS: Advanced Command Destruct Systems (ACDS) Development	1	2014	3	2015

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>				<b>Project (Number/Name)</b> 675366 / <i>QF-16</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675366: <i>QF-16</i>	-	8.139	4.770	1.673	-	1.673	1.147	0.424	-	-	-	16.153
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Full-scale targets assure warfighters weapon systems perform effectively against real-world enemy fighters and cruise missiles. Aerial Targets support adherence to Public Law Title 10, Section 2366, which requires major systems and munitions programs to conduct survivability and lethality testing before full-rate production. The Aerial Targets program provides drones to satisfy "Live Fire/Lethality" developmental/operational test requirements. Target drones are used to validate operational missile/weapon system effectiveness and fighter operational flight program (OFP) updates. Target drones are required for developmental/operational testing for all air-to-air and surface-to-air missiles, and for the F-22A, F-35, F-18, F-16, F-15, etc., aircraft. The United States Air Force's (USAF) Air Superiority Modernization/ Mission Area Plan has identified aerial targets as a capability shortfall; the QF-16 program will fulfill this requirement. Funding supports continued development of the follow-on full-scale aerial target (QF-16) and simulators, development, improvements, and updates of target control systems and specialized target payload subsystems for requirements such as: missile scoring, electronic attack and infrared (IR) countermeasures, radar and IR signature augmentation, and chaff and flare dispensing systems. Electronic Attack (EA) pod upgrade provides new techniques and capabilities critical to QF-16s to realistically emulate foreign threat systems.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> QF-16 Development Program</p> <p><b>Description:</b> QF-16 Development Program</p> <p><b>FY 2014 Accomplishments:</b> Finalized EMD development contract, drone package integration, and DT/OT. Conducted studies and analysis, including two seater effort, Electronic Flight Termination System / Loss of Carrier (EFTS/LOC), and Future F-16 Block Studies and Development .</p> <p><b>FY 2015 Plans:</b> Continue threat realism improvements to include but not limited to radar cross section (RCS) reduction and upward/forward firing IR countermeasures. Conduct studies and analysis, including Future F-16 Block Studies and Development .</p> <p><b>FY 2016 Plans:</b> Preliminary development of two seat trainer and continue threat realism improvements. Conduct studies and analysis, including Future F-16 Block Studies and Development .</p>	4.281	4.770	1.673
<p><b>Title:</b> F-16 Regeneration (QF-16)</p> <p><b>Description:</b> F-16 Regeneration</p> <p><b>FY 2014 Accomplishments:</b></p>	3.858	-	-



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675366 / <i>QF-16</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Completed support of Government DT/OT & programmatic efforts in support of QF-16 development program.			
<b>FY 2015 Plans:</b> N/A			
<b>FY 2016 Plans:</b> N/A			
<b>Accomplishments/Planned Programs Subtotals</b>	8.139	4.770	1.673

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF: BA 04: Line Item # 10TRGT: <i>Target Drones</i>	123.669	98.576	132.028	-	132.028	138.541	142.208	137.931	141.175	Continuing	Continuing
• APAF: BA 06: Line Item # 000999: <i>Initial Spares/Repair Parts</i>	1.750	0.653	0.558	-	0.558	0.600	0.600	0.589	0.599	Continuing	Continuing
• APAF: BA 07: Line Item # 000074: <i>War Consumables</i>	-	5.212	4.427	-	4.427	4.500	4.590	4.674	4.753	Continuing	Continuing
• APAF: BA 07: Line Item # 000075: <i>Other Production Charges</i>	13.515	21.307	7.969	-	7.969	13.655	13.264	11.862	12.029	Continuing	Continuing
• OPAF: BA 03: Line Item # 834190: <i>Combat Training Ranges</i>	2.492	3.054	-	-	-	-	-	-	-	-	-

**Remarks**

**D. Acquisition Strategy**

The QF-16 acquisition strategy is a fixed price incentive firm, time and materials development contract with fixed price production options (Lots 1-5).

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675366 / <i>QF-16</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development of Drone Peculiar Equipment	C/Various	The Boeing Company : Saint Louis, MO	-	6.990		4.770	Mar 2015	1.673	Dec 2015	-		1.673	Continuing	Continuing	-
<b>Subtotal</b>			-	6.990		4.770		1.673		-		1.673	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
QF-16 Program Support	Various	AAC/EBYA: Eglin AFB, FL; AMARG: Tucson, AZ; 162d ANG: Tucson, AZ; OO-ALC: Hill AFB, UT : Various,	-	0.858		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.858		-		-		-		-	-	-	-

**Remarks**  
The funds for the DRFM Electronic Attack Pods will be sent via MIPR to Pt Mugu for obligation and execution.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
QF-16 Program Mangement Administration (PMA)	Various	Various : Eglin AFB, FL	-	0.291		-		-		-		-	Continuing	Continuing	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675366 / <i>QF-16</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Development Testing/Operational Testing (DT/OT)																												
Threat Realism Improvements																												
2-Seater Trainer Study																												
2-Seater Trainer Preliminary Development																												
Electronic Flight Termination System / Loss of Carrier																												
Future F-16 Block Studies and Development																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305116F / <i>Aerial Targets</i>	<b>Project (Number/Name)</b> 675366 / <i>QF-16</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Development Testing/Operational Testing (DT/OT)	1	2014	4	2014
Threat Realism Improvements	3	2014	4	2018
2-Seater Trainer Study	3	2014	3	2015
2-Seater Trainer Preliminary Development	3	2016	4	2017
Electronic Flight Termination System / Loss of Carrier	4	2014	3	2017
Future F-16 Block Studies and Development	3	2015	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305128F / <i>Security and Investigative Activities</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	0.189	-	0.472	-	0.472	0.409	0.418	0.425	0.432	Continuing	Continuing
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	-	0.189	-	0.472	-	0.472	0.409	0.418	0.425	0.432	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Air Force Office of Special Investigations (AFOSI) conducts specialized investigative activities and force protection support for Air Force (AF) commanders worldwide. This assists AF commanders in protecting their people and resources. AFOSI's mission includes investigating criminal matters affecting AF personnel, contract fraud and economic crimes involving AF weapons systems and spare parts, the investigation of environmental crime, counterdrugs, computer intrusion detection and forensic media analysis of computer crimes. This element supports Technical Surveillance Countermeasures (TSCM), Computer Crime Investigations (CCI), and technical support to criminal and counterintelligence investigations and operations conducted by AFOSI. AFOSI's TSCM mission conducts counterintelligence investigations for both AF and DoD facilities and programs in order to deter and detect technical surveillance operations conducted by Foreign Intelligence Services to compromise classified or sensitive information. The purpose of CCI research is to improve AF and DoD Information Operations capability by enhancing AFOSI's ability to deter or prevent spies, hackers, or saboteurs from manipulating, damaging, or stealing sensitive war fighting data or systems. Failing that, to investigate, identify, and prosecute those who do. While most research to meet operational requirements is Operational System Development, there is also research in the category of Engineering and Manufacturing Development due to a need for modifications to present technology. The equipment required to provide technical support to investigations is unique and complex. This equipment must be continually updated to provide state-of-the-art capabilities to detect and neutralize criminal activities targeted against the AF and DoD. In an era of advancing technology, reduced manning, and increasingly high level fraud, environmental crime and computer crime investigations, technical investigative equipment must be continuously updated to enable AFOSI special agents to have the most cost effective and best possible means of thwarting criminal acts. The evolution of a new wave of computer crimes has made AFOSI responsible for the collection, investigative analysis, national level law enforcement coordination, and dissemination of hacker activity and intrusion incidents for the Air Force. AFOSI's computer crime equipment must stay on the leading edge of technology to collect criminal information as well as pursue and apprehend criminals through a global medium. AFOSI must continually update its existing high tech computer surveillance equipment to support ongoing and future investigative operations to identify hackers and hacker groups, as well as potential hostile government activities targeting Air Force communication and control systems. Critical Infrastructure Protection identifies weaknesses in the Air Force Critical infrastructure, highlights critical countermeasures and acquires and deploys cost-effective solutions. The intent is to provide an Air Force-wide review of current infrastructure vulnerabilities; prioritize AF protection planning and integrate with existing programs; identify gaps based on AF needs; direct studies to refine AF 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.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305128F / <i>Security and Investigative Activities</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	0.195	0.498	0.475	-	0.475
Current President's Budget	0.189	-	0.472	-	0.472
Total Adjustments	-0.006	-0.498	-0.003	-	-0.003
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.006	-			
• Other Adjustments	-	-0.498	-0.003	-	-0.003

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> TSCM</p> <p><b>Description:</b> Next Generation Technical Surveillance Countermeasures (TSCM) receiver. TSCM detects, deters and neutralizes traditional and emerging technical collection efforts of foreign intelligence entities and insider threats while identifying physical security vulnerabilities in sensitive information processing facilities. Developments in technologies provide for increased frequency spectrum and information network awareness and advanced automated analytical tools in a man-portable form factor. Additionally, the potential increased speed and resolution reduces man hours and time on target resulting in inherent efficiencies as related to human and capital resources.</p> <p><b>FY 2014 Accomplishments:</b> Continued development of Next Generation Technical Surveillance Countermeasures (TSCM) receiver. Support on-going efforts to identify, develop and test and evaluate receivers against state-of-the-art commercial and state-sponsored technical collection tools and capabilities. Evaluation and acceptance testing facilitated the objective and technical evaluation towards meeting validated requirements prior to full-rate acquisition.</p> <p><b>FY 2015 Plans:</b> Continue development of Next Generation Technical Surveillance Countermeasures (TSCM) receiver. FY15 activities (based on FY14 results) will transition into more robust activities to identify, develop and test and evaluate receivers against state-of-the-art commercial and state-sponsored technical collection tools and capabilities. Evaluation and acceptance testing will facilitate the objective and technical evaluation towards meeting validated requirements prior to full-rate acquisition.</p> <p><b>FY 2016 Plans:</b></p>	0.109	-	0.472



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305128F / <i>Security and Investigative Activities</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016
Further research and develop tools to exploit cyberspace, digital media and mobile devices for the collection of evidence and counterintelligence information and methods of neutralizing threats from intrusions and insider threats.			
<b>Title:</b> CCI	0.080	-	-
<b>Description:</b> Continue development of Computer Crimes Investigative (CCI) Equipment & Software			
<b>FY 2014 Accomplishments:</b> Furthered research and developed tools to exploit cyberspace, digital media and mobile devices for the collection of evidence and counterintelligence information and methods of neutralizing threats from intrusions and insider threats.			
<b>FY 2015 Plans:</b> Further research and develop tools to exploit cyberspace, digital media and mobile devices for the collection of evidence and counterintelligence information and methods of neutralizing threats from intrusions and insider threats.			
<b>FY 2016 Plans:</b> N/A			
<b>Accomplishments/Planned Programs Subtotals</b>	0.189	-	0.472

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

**Remarks**

**E. Acquisition Strategy**  
Market Research is accomplished jointly within the DoD, Counterintelligence, and Law Enforcement communities with the various government laboratories and major defense contractors to identify locations with the ability to develop investigative tools unique to our mission needs. These technologies, capabilities, and limitations of current and future investigative tools is sometimes highly sensitive or classified. Market Research also allows inter-agency coordination and deconfliction to occur, reducing or eliminating duplicitous development efforts. Annually, stakeholders meet to discuss initiatives, challenges and organizational goals to coordinate or consolidate requirements to increase efficiency. Once Market Research and any applicable coordination/deconfliction is completed, acquisition channels are analyzed and selected based on the ability to meet operational and technical security 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305128F / Security and Investigative Activities	<b>Project (Number/Name)</b> 671931 / TECH SURVEIL COUNTER MEAS EQPT
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
TSCM R/D #1	MIPR	HQ AFOSI : Quantico, VA	-	-		-		-		-		-	Continuing	Continuing	TBD
TSCM R/D #2	MIPR	HQ AFOSI : Quantico, VA	-	-		-		-		-		-	Continuing	Continuing	TBD
TSCM R/D #3	MIPR	HQ AFOSI : Quantico, VA	-	-		-		-		-		-	Continuing	Continuing	TBD
TSCM R/D #4	MIPR	HQ AFOSI : Quantico, VA	-	0.189	Dec 2014	-	Dec 2015	0.472	Dec 2015	-		0.472	Continuing	Continuing	-
TSCM R/D #5	MIPR	HQ AFOSI : Quantico, VA	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.189		-		0.472		-		0.472	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>							<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305128F / <i>Security and Investigative Activities</i>			<b>Project (Number/Name)</b> 671931 / <i>TECH SURVEIL COUNTER MEAS EQPT</i>					
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>		
<b>Project Cost Totals</b>	-	0.189	-	0.472	-	0.472	-	-	-		

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305128F / <i>Security and Investigative Activities</i>	<b>Project (Number/Name)</b> 671931 / <i>TECH SURVEIL COUNTER MEAS EQPT</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
TSCM Receiver	[REDACTED]																											
CCI Software/Equipment	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305128F / <i>Security and Investigative Activities</i>	<b>Project (Number/Name)</b> 671931 / <i>TECH SURVEIL COUNTER MEAS EQPT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TSCM Receiver	1	2014	4	2020
CCI Software/Equipment	1	2014	4	2015

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305145F / <i>Arms Control Implementation</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	1.430	13.222	12.137	-	12.137	4.892	-	-	-	Continuing	Continuing
675063: <i>OC-135 Open Skies Sensors</i>	-	1.430	13.222	12.137	-	12.137	4.892	-	-	-	Continuing	Continuing

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

This budget line funds the Strategic Stability and CWMD Policy Division (AF/A10-S) Mission which develops future national security strategy concepts including those involving space systems, nuclear weapons and other strategic and high consequence capabilities. Directs, integrates and synchronizes advances in USAF capability to counter Weapons of Mass Destruction. Focal point for USAF arms control policy, implementation and compliance with international treaties and agreements, diplomatic clearances and airspace/aircraft sovereignty issues. Defines and defends the USAF role in ballistic missile defense. Represents USAF in international, interagency, DoD, Joint, inter-Service, COCOM and MAJCOM forums and implementation groups on matters involving national security policy and strategy.

Open Skies Sensors - This budget line funds upgrades to the sensors aboard the OC-135B Open Skies aircraft used for the Treaty on Open Skies observation flights. The Open Skies Treaty allows signatories to conduct observation flights over each other's territory using fixed-wing, unarmed observation aircraft. Mission equipment on the OC-135B includes wet film optical framing and panoramic cameras. Open Skies Sensors program addresses the requirements in the Presidential Policy Directive-15 (PPD-15), which states, "The United States shall begin budgeting no later than FY14 to upgrade the sensors on the current aircraft by replacing film-based cameras with available electro-optical sensors. (U)" Additionally, current cameras are nearly obsolete, unreliable, hard and increasingly expensive to maintain, and repair parts must be individually manufactured. In addition, the web film manufacturers are discontinuing production of the film stock.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	1.430	13.222	8.569	-	8.569
Current President's Budget	1.430	13.222	12.137	-	12.137
Total Adjustments	-	-	3.568	-	3.568
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	3.568	-	3.568

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force Date: February 2015

**Appropriation/Budget Activity**  
3600: *Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development*

**R-1 Program Element (Number/Name)**  
PE 0305145F / *Arms Control Implementation*

**Change Summary Explanation**

FY16 funding increased based on updated program office estimate to ensure full funding of program



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305145F / <i>Arms Control Implementation</i>				<b>Project (Number/Name)</b> 675063 / <i>OC-135 Open Skies Sensors</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675063: <i>OC-135 Open Skies Sensors</i>	-	1.430	13.222	12.137	-	12.137	4.892	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The OC-135B aircraft supports the implementation of the United States Government (USG) Open Skies Treaty. This program addresses the requirements in the Presidential Policy Directive-15 (PPD-15). The Open Skies Treaty allows signatories to conduct observation flights over each other's territory using fixed-wing, unarmed observation aircraft. The aircraft can use optical cameras, video cameras, sideways-looking synthetic aperture radar, and infrared line scanning devices. There are 34 participating states to the Open Skies Treaty. The Air Force is required to allow over flight of USAF bases per multilateral request; to acquire, operate, and maintain the aircraft and equipment utilized during over flights of partner countries; to provide required sensor media and initial media processing; and to provide airfield servicing, logistics, and maintenance for foreign over flights of the US.

Open Skies Sensors - Mission equipment on the OC-135B includes wet film optical framing and panoramic cameras. Open Skies Sensors program addresses the requirements in the Presidential Policy Directive-15 (PPD-15), which states, "The United States shall begin budgeting no later than FY14 to upgrade the sensors on the current aircraft by replacing film-based cameras with available electro-optical sensors. (U)" Additionally, current cameras are nearly obsolete, unreliable, hard and increasingly expensive to maintain, and repair parts must be individually manufactured. In addition, the web film manufacturers are discontinuing production of the film stock. Furthermore, the ultimate imagery product customer desires digital format products. This camera replacement program will replace the wet film cameras with modern, digital cameras. Modern, digital cameras will be more reliable, maintainable and cost effective. The customer will be able to more readily use the imagery products. Equipment service life will be extended significantly.

Test articles will be procured for the purpose of developmental testing and to support Treaty certification of the sensors.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Open Skies Sensors	1.430	13.222	12.137
<b>Description:</b> Replace existing Open Skies aircraft wet film sensors with digital sensors.			
<b>FY 2014 Accomplishments:</b> Developed requirements for the new digital camera system.			
<b>FY 2015 Plans:</b> Conduct research supporting design and intergration of the new digital cameras.			
<b>FY 2016 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305145F / <i>Arms Control Implementation</i>	<b>Project (Number/Name)</b> 675063 / <i>OC-135 Open Skies Sensors</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Procure and install prototype sensor system.			
<b>Accomplishments/Planned Programs Subtotals</b>	1.430	13.222	12.137

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF:BA05: Line Item #1900: <i>Open Skies</i>	-	-	-	-	-	4.537	5.015	5.109	5.201	-	19.952

**Remarks**

**D. Acquisition Strategy**

Compete the development and integration of a new digital camera system on the OC-135B and update the Open Skies Medial Processing Facility (OSMPF).

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305145F / Arms Control Implementation	<b>Project (Number/Name)</b> 675063 / OC-135 Open Skies Sensors
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Open Skies Sensors Engineering, Development and Prototype Subtotal Product Development	C/FFP	Various : Various,	-	-		12.704	Aug 2015	10.707		-		10.707	Continuing	Continuing	23.985
<b>Subtotal</b>			-	-		12.704		10.707		-		10.707	-	-	23.985

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Sub Total Support	Various	Various : Various,	-	1.408	Sep 2014	0.364		0.696		-		0.696	Continuing	Continuing	3.202
<b>Subtotal</b>			-	1.408		0.364		0.696		-		0.696	-	-	3.202

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Open Skies Sensor development ground and flight testing for imagery collection	PO	Various : Various,	-	-		-		0.685		-		0.685	Continuing	Continuing	4.219
<b>Subtotal</b>			-	-		-		0.685		-		0.685	-	-	4.219

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Open Skies Sensors PMA SubTotal Management Services	Various	Various : Various,	-	0.022	Sep 2014	0.154	Sep 2015	0.049		-		0.049	Continuing	Continuing	0.275
<b>Subtotal</b>			-	0.022		0.154		0.049		-		0.049	-	-	0.275

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force								<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0305145F / <i>Arms Control Implementation</i>				<b>Project (Number/Name)</b> 675063 / <i>OC-135 Open Skies Sensors</i>			
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>		<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
<b>Project Cost Totals</b>	-	1.430	13.222		12.137	-	12.137	-	-	31.681	

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305145F / Arms Control Implementation	<b>Project (Number/Name)</b> 675063 / OC-135 Open Skies Sensors

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Milestone B								■																				
Contract Award								■																				
Critical Design Review												■																
Test/Certification																■												
Milestone C																				■								
Initial Operational Capability																				■								
Final Operational Capability																												■

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305145F / <i>Arms Control Implementation</i>	<b>Project (Number/Name)</b> 675063 / <i>OC-135 Open Skies Sensors</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B	4	2015	4	2015
Contract Award	4	2015	4	2015
Critical Design Review	4	2016	4	2016
Test/Certification	4	2017	4	2018
Milestone C	4	2018	4	2018
Initial Operational Capability	4	2018	4	2018
Final Operational Capability	4	2019	4	2019

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305146F / <i>Defense Joint Counterintelligence Activities</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	0.010	0.040	0.361	-	0.361	0.362	0.369	0.376	0.383	Continuing	Continuing
671931: <i>TECH SURVEIL COUNTER MEAS EQPT</i>	-	0.010	0.040	0.361	-	0.361	0.362	0.369	0.376	0.383	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Technical Surveillance Countermeasures (TSCM) develops future technologies capable of thwarting advanced, hostile force technical capabilities. The technologies will provide secure environments for austere mission planning locations and theater commander centers, and will collect information for counterthreat operations in support of DoD and AF 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)**

	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	0.010	0.360	0.363	-	0.363
Current President's Budget	0.010	0.040	0.361	-	0.361
Total Adjustments	-	-0.320	-0.002	-	-0.002
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-0.320	-0.002	-	-0.002

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> Defense Joint Counterintelligence Program	0.010	0.040	0.361
<b>Description:</b> TSCM will develop future technologies capable of thwarting advanced, hostile force technical capabilities. They will be developed to provide secure environments to austere mission planning locations, theater commander centers, and will collect information for counterthreat operations in support of DoD and AF requirements.			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305146F / <i>Defense Joint Counterintelligence Activities</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b><i>FY 2014 Accomplishments:</i></b>                      Researched and developed tools and equipment to exploit cyberspace, digital media and mobile devices for the collection of evidence and counterintelligence information and methods of neutralizing threats from intrusions and insider threats.</p> <p><b><i>FY 2015 Plans:</i></b>                      Continue developement of Next Generation Technical Surveillance Countermeasures (TSCM).</p> <p><b><i>FY 2016 Plans:</i></b>                      Continue research and developement of advanced systems to provide support to counterthreat operations and other austere and contingency areas as needed.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.010	0.040	0.361

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

N/A

**Remarks**

**E. Acquisition Strategy**

Contracts will be awarded based on 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.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0305146F / Defense Joint Counterintelligence Activities				671931 / TECH SURVEIL COUNTER MEAS EQPT							
<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Naval Research Lab	MIPR	Navy/Air Force : Williamsburg, VA	-	0.010	Dec 2014	0.040	Dec 2015	0.361	Dec 2015	-		0.361	Continuing	Continuing	-
<b>Subtotal</b>			-	0.010		0.040		0.361		-		0.361	-	-	-
<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
<b>Project Cost Totals</b>			-	0.010		0.040		0.361		-		0.361	-	-	-
<b>Remarks</b>															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305146F / <i>Defense Joint Counterintelligence Activities</i>	<b>Project (Number/Name)</b> 671931 / <i>TECH SURVEIL COUNTER MEAS EQPT</i>

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

TSCM activity.	[REDACTED]																											
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305146F / <i>Defense Joint Counterintelligence Activities</i>	<b>Project (Number/Name)</b> 671931 / <i>TECH SURVEIL COUNTER MEAS EQPT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
TSCM activity.	1	2014	3	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305173F / <i>Space and Missile Test and Evaluation Center</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	3.584	3.674	3.162	-	3.162	4.028	3.993	3.858	3.926	Continuing	Continuing
67A014: <i>R&amp;D Space and Missile Operations</i>	-	3.584	3.674	3.162	-	3.162	4.028	3.993	3.858	3.926	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Research and Development Space and Missile Operations (RDSMO) program, executed by the Advanced Systems and Development Directorate at Kirtland AFB, NM, conducts space and missile Research and Developmental Test and Evaluation (RDT&E) and Initial Operational Test and Evaluation (IOT&E) in support of experimental, demonstration, and operational satellites. The program develops, acquires, and operates satellite command and control (C2) and fixed/deployable telemetry, tracking, and commanding (TT&C) antenna systems in support of AF and DoD missions. The RDSMO program is responsible for the design, development, integration, testing, sustainment, and operations of the Multi-Mission Satellite Operations Center (MMSOC) C2 systems installed in the RDT&E Support Complex (RSC) at Kirtland AFB, NM and at the Satellite Operations Center 11 (SOC 11) located at Schriever AFB, CO.

FY16 funds include incremental development and establishment of new capabilities for the MMSOC, systems engineering, special studies, integration and test efforts in support of demonstrations and operational architectures designed to increase operations and maintenance affordability, efficiency and resiliency for global satellite command and control through military and commercial capabilities.

The main objective of MMSOC is to develop the capability to rapidly support R&D and operational systems and to transition R&D space vehicle technology with residual military utility to operational status for immediate warfighter support. MMSOC is a multiple mission operation system that uses standard software to (1) perform satellite command and control (C2) in support of launch requirements; (2) develop and test tactics, techniques, procedures and concepts to conduct satellite operations; (3) provide a satellite C2 incremental block evolution resource for RDT&E of new systems and concepts; and (4) deliver operational flexibility for new and currently flying assigned satellites.

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.

The FY2016 funding request was reduced by \$0.524 million to account for the availability of prior execution balances.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305173F / <i>Space and Missile Test and Evaluation Center</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	3.696	3.674	3.708	-	3.708
Current President's Budget	3.584	3.674	3.162	-	3.162
Total Adjustments	-0.112	-	-0.546	-	-0.546
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.112	-	-0.546	-	-0.546

**Change Summary Explanation**

The FY2016 funding request was reduced by \$0.524 million to account for the availability of prior execution balances.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> MMSOC Development	3.584	3.674	3.162
<b>Description:</b> Multi-Mission Satellite Operations Center (MMSOC) development/integration/test			
<b>FY 2014 Accomplishments:</b> Completed hardware virtualization and continued implementation of new service bus architecture command and control capability. Supported operations of multiple satellites and enhanced automation. Continued program office support and related support activities such as, but not limited to, mission support, special studies, Systems Engineering and Technical Assistance (SETA), Federally Funded Research and Development Centers (FFRDC), etc.			
<b>FY 2015 Plans:</b> Provide capability to AFSPC for reduced cost of operations through use of MMSOC architecture. Continue to support operations of multiple satellites and enhance automation capability. Continue program office support and related support activities such as, but not limited to, mission support, special studies, Systems Engineering and Technical Assistance (SETA), Federally Funded Research and Development Centers (FFRDC), etc.			
<b>FY 2016 Plans:</b> Continue providing capability to AFSPC for reduced cost of operations and maintenance through evolution of MMSOC architecture and automated processes. Refine and continue to support operations of multiple satellites and enhance automation capability. Continue program office support and related support activities such as, but not limited to, mission support, special			

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305173F / <i>Space and Missile Test and Evaluation Center</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
studies, Systems Engineering and Technical Assistance (SETA), Federally Funded Research and Development Centers (FFRDC), etc.			
<b>Accomplishments/Planned Programs Subtotals</b>	3.584	3.674	3.162

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

<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE:BA07:PE 0305173F: <i>General Information Technology</i>	1.038	1.683	1.435	-	1.435	1.993	1.962	1.872	1.905	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**  
The AF uses the competitively awarded Engineering, Development, and Sustainment (EDS) Contract, managed by Space and Missile System Center, Advanced Systems and Development Directorate, to modernize and sustain MMSOC.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305173F / <i>Space and Missile Test and Evaluation Center</i>	<b>Project (Number/Name)</b> 67A014 / <i>R&amp;D Space and Missile Operations</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering, Development, and Sustainment (EDS) Follow-on Contract (MMSOC)	C/CPAF	Lockheed Martin : Santa Maria, CA	-	1.493	Oct 2013	1.648	Oct 2014	1.162	Oct 2015	-		1.162	Continuing	Continuing	TBD
Naval Research Lab	MIPR	Naval Research Lab : Washington, DC	-	1.000	Oct 2013	0.696	Oct 2014	0.450	Oct 2015	-		0.450	Continuing	Continuing	TBD
Service Bus Architecture Standards	MIPR	NASA Goddard : Greenbelt, MD	-	0.200	Oct 2013	0.050	Oct 2014	0.050	Oct 2015	-		0.050	Continuing	Continuing	TBD
<b>Subtotal</b>			-	2.693		2.394		1.662		-		1.662	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Information Assurance Support (MMSOC)	Various	Various : ,	-	0.300	Oct 2013	0.300	Oct 2014	0.310	Oct 2014	-		0.310	Continuing	Continuing	TBD
<b>Subtotal</b>			-	0.300		0.300		0.310		-		0.310	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Test and Engineering (STEC) Contract (MMSOC)	C/CPAF	LINQUEST : Kirtland, AFB, NM	-	0.256	Oct 2013	0.290	Oct 2014	0.300	Oct 2015	-		0.300	Continuing	Continuing	TBD
<b>Subtotal</b>			-	0.256		0.290		0.300		-		0.300	-	-	-







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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305173F / <i>Space and Missile Test and Evaluation Center</i>	<b>Project (Number/Name)</b> 67A014 / <i>R&amp;D Space and Missile Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RDSMO Systems Upgrades	1	2014	4	2020
MMSOC Block II	1	2014	4	2020
MMSOC Information Assurance	1	2014	4	2020
MMSOC STP-2 Supt	1	2014	4	2015
MMSOC ORS-1 Supt	1	2014	4	2019
MMSOC C/NOFS Supt	1	2014	2	2015
MMSOC CloudSat Supt	1	2014	4	2020
MMSOC STPSat-3 Supt	1	2014	4	2017
MMSOC SENSE Supt	1	2014	1	2015
MMSOC ANGELS Supt	3	2014	4	2015
MMSOC EAGLE Supt	1	2015	4	2019
MMSOC GPIM Supt	1	2014	3	2017
MMSOC WFOV Supt	1	2014	4	2018
MMSOC DSX Supt	4	2015	4	2019
MMSOC Poseidon Supt	1	2014	4	2020
MMSOC ORS-5 Supt	4	2014	4	2020
AFSCN Support	1	2014	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305174F / <i>Space Innovation, Integration and Rapid Technology Development</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	2.409	2.071	1.543	-	1.543	3.129	2.985	2.649	2.697	Continuing	Continuing
67A011: <i>Space Analysis and Application Development</i>	-	2.409	2.071	1.543	-	1.543	3.129	2.985	2.649	2.697	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Located at Peterson AFB, Colorado, the Space Innovation, Integration and Rapid Technology Development program develops and modifies modeling and simulation tools that Air Force Space Command's Space Analysis Center uses for operations research, military utility analyses, tradeoff studies, and other evaluations of space mission areas to guide planning, programming, requirements generation, analyses of alternatives, and other activities. Development activities incorporate changes in fielded and projected space operational capabilities, as well as technical improvements, into the group's software tools to ensure their data and technology remain current. Its innovation, education, and training activities foster solutions to operational deficiencies and enhance the integration of space systems into Air Force operations, thereby enabling service and joint warfighters to realize the full potential of existing and planned space capabilities.

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.

The FY2016 funding request was reduced by  $-\$.917M$  to account for the availability of prior execution balances.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	2.469	2.480	2.525	-	2.525
Current President's Budget	2.409	2.071	1.543	-	1.543
Total Adjustments	-0.060	-0.409	-0.982	-	-0.982
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.409			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.060	-			
• Other Adjustments	-	-	-0.982	-	-0.982

**Change Summary Explanation**

The FY2016 funding request was reduced by  $\$.917$  million to account for the availability of prior execution balances.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305174F / <i>Space Innovation, Integration and Rapid Technology Development</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Model Development/Modification		1.156	0.994	0.741
<p><b>Description:</b> Develops, verifies, and validates new models for space mission areas and modifies existing models to portray new capabilities. Models used by the Air Force Space Command's (AFSPC) Space Analysis Center for military utility analyses, trade studies, and other evaluations of space programs supporting program offices at the Space and Missile Center, HQ AFSPC and other activities with a space focus. Develop and modify several models and tools in support of space and cyber analysis, including, but not limited to the following: Space Surveillance Network Analysis Model (SSNAM), System Effectiveness Analysis Simulation (SEAS), System CONOPS and Requirements Environment (SCORE), Simulation of Locations and Attack of Mobile Enemy Missiles (SLAMEM), Scintillation Error Model (SCINTERR), Extended Air Defense Simulation (EADSIM), and Synthetic Theatre Operations Research Model (STORM).</p> <p><b>FY 2014 Accomplishments:</b>            Developed and modified several models and tools in support of space and cyber analysis.            SSNAM - Simulating SSN used on launch folder issues for COBRA DANE. Run for analysis of space fence effects on the SSN.            SEAS - Update tool to support Warfighter Vignette Analysis efforts providing AFSPC leadership insights into the impact of space and cyberspace capabilities on military operations.            SCORE - Upgrade to support Protected comm and ITW/AA analysis            SLAMEM - Support upcoming AOAs and studies for OPIR, DSP, SBIRS, ITW/AA C2.            SCINTERR Model - Integrate Ionospheric scintillation forecast accuracy modifications into mission models like GIANT, SCORE, SLAMEM, EADSIM and various communications analysis tools.</p> <p><b>FY 2015 Plans:</b>            Develop and modify several models and tools in support of space and cyber analysis. Continue building on FY 2014 activities.            SCORE - Upgrade to support Protected comm and ITW/AA analysis            SSNAM - Simulate SSN used on launch folder issues            STORM - Improve space/cyber representation in STORM. Enhance STORM non-lethal effects modeling            SLAMEM - Continue modifications to support upcoming AOAs and studies.            SCINTERR Model - Continue integration of Ionospheric scintillation forecast accuracy modifications into mission models and various communications analysis tools.            Other model modifications as needed based on leadership questions</p> <p><b>FY 2016 Plans:</b>            Develop and modify several models and tools in support of space and cyber analysis. Continue building on FY 2014 activities.            SCORE - Upgrade to support Protected comm and ITW/AA analysis            SSNAM - Simulate SSN used on launch folder issues</p>				

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305174F / <i>Space Innovation, Integration and Rapid Technology Development</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
STORM - Improve space/cyber representation in STORM. Enhance STORM non-lethal effects modeling SLAMEM - Continue modifications to support upcoming AOAs and studies. SCINTERR Model - Continue integration of Ionospheric scintillation forecast accuracy modifications into mission models and various communications analysis tools. Other model modifications as needed based on leadership questions			
<b>Title:</b> Model Verification <b>Description:</b> Verification of model changes.  <b>FY 2014 Accomplishments:</b> Verified model changes resulting from Model Development and Modification efforts.  <b>FY 2015 Plans:</b> Verification of model changes resulting from Model Development and Modification efforts.  <b>FY 2016 Plans:</b> Verification of model changes resulting from Model Development and Modification efforts.	0.506	0.435	0.324
<b>Title:</b> Model Validation <b>Description:</b> Validated model change results.  <b>FY 2014 Accomplishments:</b> Validation of model changes resulting from Model Development and Modification efforts.  <b>FY 2015 Plans:</b> Validation of model changes resulting from Model Development and Modification efforts.  <b>FY 2016 Plans:</b> Validation of model changes resulting from Model Development and Modification efforts.	0.747	0.642	0.478
<b>Accomplishments/Planned Programs Subtotals</b>	2.409	2.071	1.543

<b>D. Other Program Funding Summary (\$ in Millions)</b>											<b>Cost To</b>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>	
• OPAF: BA03: Line Item # 834010: <i>General Information Technology</i>	0.919	1.289	1.221	-	1.221	1.664	1.637	1.561	1.588	Continuing	Continuing	

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305174F / <i>Space Innovation, Integration and Rapid Technology Development</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**  
Funding and content procures equipment for the SIIRTD distributed communications architecture and computing equipment supporting analysis capabilities.

**E. Acquisition Strategy**  
Any new projects funded in this program 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.



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)					Project (Number/Name)							
3600 / 7				PE 0305174F / Space Innovation, Integration and Rapid Technology Development					67A011 / Space Analysis and Application Development							
<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Develop/modify software tools/models	C/FP	Various : Various,	-	0.940	Sep 2014	0.808	Nov 2014	0.602	Nov 2015	-		0.602	Continuing	Continuing	TBD	
Develop/modify software tools and models	C/FP	Various : Various,	-	1.469	Jan 2014	1.263	Nov 2014	0.941	Nov 2015	-		0.941	Continuing	Continuing	TBD	
<b>Subtotal</b>			-	2.409		2.071		1.543		-		1.543	-	-	-	
<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Project Cost Totals</b>			-	2.409		2.071		1.543		-		1.543	-	-	-	
<b>Remarks</b>																

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305174F / <i>Space Innovation, Integration and Rapid Technology Development</i>	<b>Project (Number/Name)</b> 67A011 / <i>Space Analysis and Application Development</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

Model development/modification, verification, and validation

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305174F / <i>Space Innovation, Integration and Rapid Technology Development</i>	<b>Project (Number/Name)</b> 67A011 / <i>Space Analysis and Application Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Model development/modification, verification, and validation	1	2014	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305179F / <i>Integrated Broadcast Service (IBS)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	6.954	8.592	7.860	-	7.860	8.921	8.806	8.712	8.869	Continuing	Continuing
674779: <i>Integrated Broadcast Service</i>	-	6.954	8.592	7.860	-	7.860	8.921	8.806	8.712	8.869	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Integrated Broadcast Service (IBS) fulfills the warfighter's requirements for worldwide threat warning and situational awareness information with timely production and simultaneous dissemination of Intelligence, Surveillance, and Reconnaissance (ISR) derived combat information. It also provides target tracking data to support threat avoidance, targeting, force protection, and situational awareness. This information is continually refined in near real time by strategic, operational and tactical sensors.

IBS is comprised of the following:

- A Common Interactive Broadcast (CIB) on UHF satellite channel using a Common Message Format (CMF) and a MIL-STD Demand Assigned Multiple Access (DAMA) compliant waveform and Line of Sight (LOS) using the Wideband Networking Waveform (WNW) and Joint Tactical Terminal (JTT).
- IBS-Network Services (IBS-NS) includes two Global IBS Network Servers (GINS) and four Theater Interface Nodes (TINs) to support the geographic Combatant Commanders, all built to validated warfighter requirements.
- Two GINS receive data from each theater and integrate this data into a worldwide picture available to all network/broadcast users.
- Four regional TINs allow local and out-of-theater users (not directly receiving IBS broadcast) to receive the CIB information broadcast. Additionally, the TIN will receive and inject data into the CIB for producers without access to the theater CIB.

This PE funds:

- Completion of Advanced Development for IBS-NS, providing increased throughput capabilities
- Modernization of IBS (IBS-NS, CIB, and CMF)

This project will identify and implement an open, scalable system architecture that will accommodate growth as the virtual world grows and cyber operations change.

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.

The FY2016 funding request was reduced by \$0.643M to account for the availability of prior execution balances.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305179F / <i>Integrated Broadcast Service (IBS)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	6.954	8.592	8.556	-	8.556
Current President's Budget	6.954	8.592	7.860	-	7.860
Total Adjustments	-	-	-0.696	-	-0.696
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.696	-	-0.696

**Change Summary Explanation**

The FY2016 funding request was reduced by \$0.696M to account for the availability of prior execution balances (\$0.643M) and for inflation (\$0.053M).

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> Advanced Development - Integrated Broadcast Service (IBS) - Network Services (NS)</p> <p><b>Description:</b> Continue Advanced Development of IBS-NS.</p> <p><b>FY 2014 Accomplishments:</b> Completed Advanced Development of IBS-NS.</p>	0.648	-	-
<p><b>Title:</b> Modernization of Integrated Broadcast Service (IBS-NS, CIB, and CMF)</p> <p><b>Description:</b> Modernizes IBS (IBS-NS, CIB, and CMF).</p> <p><b>FY 2014 Accomplishments:</b> Initiated providing resiliency for IBS CIB UHF Satellite Communications (SATCOM) Broadcast and development of equipment to monitor health and welfare of CIB.</p> <p><b>FY 2015 Plans:</b> Enabling SCI-level dissemination of data, continuing MIL-STD compliant implementation in IBS-NS, continue providing resiliency to IBS CIB UHF Broadcast, providing resiliency to the CIB by utilizing the Mobile User Objective System (MUOS) Wideband Code Division Multiple Access (WCDMA) SATCOM payload, connecting COCOM CIB and Integrated Waveform (IW) Planning functions to automate planning codes across security domains, and integrating new CMF data fields into enterprise components.</p> <p><b>FY 2016 Plans:</b></p>	4.866	7.192	6.660

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305179F / <i>Integrated Broadcast Service (IBS)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Will initiate development of the IBS ISR Cloud Interface which provides a long term searchable data store for IBS information, initiate integration of the CIB Planning Tool and IBS-NS capability at the COCOMs to allow automated planning to occur for active producers, and continue CMF Updates.			
<b>Title:</b> Enterprise Systems Engineering <b>Description:</b> Enterprise Systems Engineering/CMF Integration/CIB Integration.  <b>FY 2014 Accomplishments:</b> Continued Enterprise Systems Engineering/CMF Integration/CIB Integration.  <b>FY 2015 Plans:</b> Continuing Enterprise Systems Engineering/CMF Integration/CIB Integration.  <b>FY 2016 Plans:</b> Will continue Enterprise Systems Engineering/CMF Integration/CIB Integration.	0.578	0.700	0.700
<b>Title:</b> Test & Evaluation <b>Description:</b> Tests & Evaluates the IBS system.  <b>FY 2014 Accomplishments:</b> Tested & evaluated the IBS system.  <b>FY 2015 Plans:</b> Testing & evaluating the IBS system.  <b>FY 2016 Plans:</b> Will test & evaluate the IBS system.	0.862	0.700	0.500
<b>Accomplishments/Planned Programs Subtotals</b>	6.954	8.592	7.860

<b>D. Other Program Funding Summary (\$ in Millions)</b>											<b>Cost To</b>	
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Complete</u>	<u>Total Cost</u>	
• OPAF: BA03: Line Item # 832070: <i>Intelligence Comm Equipment</i>	14.121	14.949	11.411	-	11.411	16.588	17.249	16.545	16.839	Continuing	Continuing	
<b>Remarks</b>												

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305179F / <i>Integrated Broadcast Service (IBS)</i>
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**E. Acquisition Strategy**  
The IBS acquisition continued with a Sole Source Award to L-3 National Security Solutions for the Advanced Development and its transition to sustainment in the FY14 timeframe. For Modernization efforts, another Sole Source contract was awarded to L-3 National Security Solutions.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305179F / <i>Integrated Broadcast Service (IBS)</i>	<b>Project (Number/Name)</b> 674779 / <i>Integrated Broadcast Service</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
IBS-NS Advanced Development of Spiral 4 release of GINS/TINs	SS/CPIF	L-3 National Security Solutions : Reston, VA	-	0.209	Jan 2014	-		-		-		-	-	0.209	-
IBS (IBS-NS, CIB, and CMF) Modernization	Various	L-3 National Security Systems/L-3 Comm, IS/Other Government Agency : Various,	-	4.866	Oct 2013	6.892	Oct 2014	6.360	Oct 2015	-		6.360	-	18.118	-
<b>Subtotal</b>			-	5.075		6.892		6.360		-		6.360	-	18.327	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Interoperability and Development Testing	MIPR	JITC : Ft Huachuca, AZ	-	0.479	Oct 2013	0.574	Oct 2014	0.410	Oct 2015	-		0.410	-	1.463	-
Responsible Test Organization (RTO)	PO	46th Test Squadron : Eglin AFB, FL	-	0.383	Oct 2013	0.126	Oct 2014	0.090	Oct 2015	-		0.090	-	0.599	-
<b>Subtotal</b>			-	0.862		0.700		0.500		-		0.500	-	2.062	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SPO/Professional Acquisition Support	C/FP	Various : Bedford, MA	-	0.439	Jan 2014	-		-		-		-	-	0.439	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>											<b>Date:</b> February 2015					
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305179F / <i>Integrated Broadcast Service (IBS)</i>					<b>Project (Number/Name)</b> 674779 / <i>Integrated Broadcast Service</i>						
<b>Management Services (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>				
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
Services (PASS) and Engineering and Technical Acquisition Support Service (ETASS)																
Program Management/ Engineering Support	C/FFP	Creedence : Warner Robins, GA	-	-		0.300	Apr 2015	0.300	Nov 2015	-		0.300	-	0.600	-	
Enterprise Engineering/ CMF Integration/CIB Integration	SS/CPFF	L3 Comm, IS : Greenville, TX	-	0.578	Mar 2014	0.700	Jan 2015	0.700	Jan 2016	-		0.700	-	1.978	-	
<b>Subtotal</b>			-	1.017		1.000		1.000		-		1.000	-	3.017	-	
			<b>Prior Years</b>	<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
<b>Project Cost Totals</b>			-	6.954		8.592		7.860		-		7.860	-	23.406	-	
<b>Remarks</b>																



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305179F / <i>Integrated Broadcast Service (IBS)</i>	<b>Project (Number/Name)</b> 674779 / <i>Integrated Broadcast Service</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
IBS (IBS-NS, CIB, and CMF) IOC	1	2014	1	2014
Advanced Development - IBS-NS Integrated Test #4	3	2014	3	2014
Advanced Development - IBS-NS MDA Program Review	4	2014	4	2014
Advanced Development - IBS-NS Transition to Sustainment	4	2014	4	2014
IBS (IBS-NS, CIB, and CMF) FOC	4	2019	4	2019
Modernization of IBS (IBS-NS, CIB, and CMF)	1	2014	4	2020
Enterprise Systems Engineering of IBS (IBS-NS, CIB, and CMF)	1	2014	4	2020
Testing and Evaluation of IBS (IBS-NS, CIB, and CMF)	1	2014	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305182F / <i>Spacelift Range System (SPACE)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	11.909	13.318	6.902	-	6.902	12.521	10.620	10.819	11.011	Continuing	Continuing
674137: <i>Launch and Test Range System (LTRS) Modernization</i>	-	11.909	13.318	6.902	-	6.902	12.521	10.620	10.819	11.011	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Eastern Range at Patrick AFB/Cape Canaveral AFS, FL and the Western Range at Vandenberg AFB, CA make up the Spacelift Range System (SLRS), also known as the Launch and Test Range System (LTRS). The SLRS provides the capability to track and destroy an errant rocket in flight to protect the public, which enables national security, civil, and commercial spacelift operations to be conducted safely. SLRS is also a test range, supporting intercontinental and sea-launched ballistic missile test launches, national missile defense tests, and aeronautical tests.

SLRS is comprised of twelve subsystems (2000 assets) that together provide this capability to the ranges. The Range Safety and Command Destruct subsystems provide the capability to destroy an errant rocket, if necessary. These subsystems rely on the Telemetry, Radar, and Optics subsystems to provide tracking data to the Mission Flight Control Officer (MFCO), who is certified to determine if a rocket in flight is on course. The Weather and Surveillance subsystems provide the MFCO information about the surroundings to determine if conditions are safe for launch. The Communications, Data Handling, and Timing & Sequencing subsystems ensure critical data is expeditiously routed from remote sensors (e.g. radars, optics, etc.) to the MFCO. Finally, the Planning and Scheduling subsystem ensures all assets are available when needed for a launch or test operation. Because aging range systems are exhibiting decreasing reliability, leading to higher operations and maintenance costs and increasing the risk of launch delays, the Air Force requires RDT&E funds to conduct architecture analyses to optimize investment planning.

BA 7 - This program activity 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.

The FY2016 funding request was reduced by \$2.164 million to account for the availability of prior execution balances.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305182F / <i>Spacelift Range System (SPACE)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	12.312	13.462	9.066	-	9.066
Current President's Budget	11.909	13.318	6.902	-	6.902
Total Adjustments	-0.403	-0.144	-2.164	-	-2.164
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.403	-			
• Other Adjustments	-	-0.144	-2.164	-	-2.164

**Change Summary Explanation**

FY16: The FY2016 funding request was reduced by \$2.164 million to account for the availability of prior execution balances.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> Range Modernization (SLRSC)</p> <p><b>Description:</b> SLRSC managed the fielded baseline (all 2000+ assets) via systems engineering to include configuration management, requirements, analysis, and special studies. In FY 15 this activity will transition to the LISC contract with associated cost savings. Provides program management support, to include System Program Office operations, Systems Engineering and Technical Assistance (SETA), and Federally Funded Research and Development Centers (FFRDC).</p> <p><b>FY 2014 Accomplishments:</b> SLRSC managed the fielded baseline (2000+ assets) via systems engineering to include configuration management, requirements, analysis, and special studies. In FY 15 this activity will transition to the LISC contract.</p>	4.550	-	-
<p><b>Title:</b> Systems Engineering Support to Operational Baseline</p> <p><b>Description:</b> LTRS Integrated Support Contract (LISC) manages the fielded baseline (all twelve subsystems) to include configuration management of all range assets, requirements analyses, and special studies. Provides program management support, to include System Program Office operations, Systems Engineering and Technical Assistance (SETA), and Federally Funded Research and Development Centers (FFRDC).</p> <p><b>FY 2014 Accomplishments:</b></p>	-	7.461	2.058

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305182F / <i>Spacelift Range System (SPACE)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
N/A				
<p><b>FY 2015 Plans:</b> Manage the baseline (all twelve subsystems) to include configuration management of all range assets, requirements, analysis, and special studies.</p> <p><b>FY 2016 Plans:</b> Manage the baseline (all twelve subsystems) to include configuration management of all range assets, requirements, analysis, and special studies.</p>				
<p><b>Title:</b> Systems Engineering and Integration to Support Government-Controlled Baseline</p> <p><b>Description:</b> SE&amp;I manages the government controlled system and subsystem level baseline requirements including analysis of future changes to the fielded baseline. SE&amp;I provides "government as the intergrator" engineering support to ensure multiple separate modernizations and the sustainment baseline are synchronized. SE&amp;I will develop and recommend investment strategies to keep the Eastern and Western Ranges operating well beyond the FYDP.</p> <p><b>FY 2014 Accomplishments:</b> Continued independent SE&amp;I efforts to integrate modernization and sustainment efforts into future ranges. Provide systems and subsystem level definition, baseline, architecture, integration planning and support for future systems.</p> <p><b>FY 2015 Plans:</b> Continue independent SE&amp;I efforts as required to integrate modernization and sustainment efforts into future ranges. Provide systems and subsystem level definition, baseline, architecture, integration planning and support for future ranges.</p> <p><b>FY 2016 Plans:</b> Continue independent SE&amp;I efforts as required to integrate modernization and sustainment efforts into future ranges. Provide systems and subsystem level definition, baseline, architecture, integration planning and support for future ranges.</p>		3.034	1.383	4.844
<p><b>Title:</b> Standard Space Trainer</p> <p><b>Description:</b> Develops the Standard Space Trainer (SST) and other trainer applications for the spacelift ranges. SST is the AFSPC/CC directed training system for all Combat Mission Ready (CMR) space systems. It provides a common platform for all space operational training systems for both AFSPC and AETC. The Spacelift Range SST will be developed to support CMR training for the Ranges Aerospace Control Officer, Range Control Officer (RCO)/ Range Operations Commander (ROC), Mission Flight Control Officer (MFCO) and Launch Weather Officer (LWO) positions.</p> <p><b>FY 2014 Accomplishments:</b></p>		4.325	4.474	-

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305182F / <i>Spacelift Range System (SPACE)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016
Awarded contract and began development of the SST. Concluded requirements analysis and applied lessons learned from previous developments.			
<b>FY 2015 Plans:</b> Conclude development and procurement of the Standard Space Trainer.			
<b>FY 2016 Plans:</b> N/A			
<b>Accomplishments/Planned Programs Subtotals</b>	11.909	13.318	6.902

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF: BA03: Line item # 836770: <i>Spacelift Range System Space</i>	90.806	65.674	113.275	-	113.275	116.108	105.446	107.320	109.222	Continuing	Continuing
• OPAF: BA05: Line Item # 86190A: <i>Spares and Repair Parts</i>	2.617	3.136	-	-	-	-	-	-	-	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

Due to the fielded LTRS age and obsolescence issues, many systems need to be replaced (e.g. communications systems at ER & WR). These major modifications will be competed, typically among small business contractors, and selected through best value source selections. The competitively-selected SE&I contractor will manage government-controlled requirements and processes as well as provide support to the "government as the integrator" between LISC and separately competed modernization projects. FFRDC provides mission assurance oversight to ensure capabilities meet operational need.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305182F / Spacelift Range System (SPACE)	<b>Project (Number/Name)</b> 674137 / Launch and Test Range System (LTRS) Modernization
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Spacelift Range System Contract (SLRSC)	C/CPAF	ITT Exelis : Cape Canaveral, FL	-	4.156	Nov 2013	1.019	Nov 2014	-		-		-	Continuing	Continuing	TBD
Standard Space Trainer	SS/CPFF	Sonalysts, Inc : Waterford, CT	-	4.325	Dec 2013	4.474	Jan 2015	-		-		-	Continuing	Continuing	TBD
Systems Engineering and Integration Contract	C/CPIF	Booz Allen Hamilton : McLean, VA	-	3.034	Dec 2013	1.383	Aug 2015	4.844	Aug 2016	-		4.844	Continuing	Continuing	TBD
LISC Systems Engineering and Tech Support	C/Various	Range Generation Next, LLC : Waltham, MA	-	-		6.036	May 2015	1.640	May 2016	-		1.640	Continuing	Continuing	-
<b>Subtotal</b>			-	11.515		12.912		6.484		-		6.484	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Support (FFRDC)	RO	Aerospace : El Segundo, CA	-	0.394	Jan 2014	0.406	Nov 2014	0.418	Nov 2015	-		0.418	Continuing	Continuing	TBD
<b>Subtotal</b>			-	0.394		0.406		0.418		-		0.418	-	-	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305182F / <i>Spacelift Range System (SPACE)</i>	<b>Project (Number/Name)</b> 674137 / <i>Launch and Test Range System (LTRS) Modernization</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

LISC Systems Engineering and Tech Support	[REDACTED]																											
Systems Engineering and Integration Contract	[REDACTED]																											
SLRSC Range Modernization	[REDACTED]																											
- Standard Space Trainer Reqts Analysis and Development	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305182F / <i>Spacelift Range System (SPACE)</i>	<b>Project (Number/Name)</b> 674137 / <i>Launch and Test Range System (LTRS) Modernization</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
LISC Systems Engineering and Tech Support	1	2015	4	2020
Systems Engineering and Integration Contract	1	2014	1	2019
SLRSC Range Modernization	1	2014	4	2015
- Standard Space Trainer Reqts Analysis and Development	1	2014	4	2015

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305202F / <i>Dragon U-2</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	13.700	5.511	34.471	-	34.471	17.414	6.942	1.487	-	-	79.525
674820: <i>Sensor Development</i>	-	13.700	5.511	34.471	-	34.471	17.414	6.942	1.487	-	-	79.525
Quantity of RDT&E Articles	-	-	-	-	-	-	1	-	-	-	-	-

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

In the 2013 PB, the Air Force decided to retain the U-2 weapon system instead of retiring it. At that time sustainment efforts and capability upgrades to the platform and sensors were pursued to support National and Combatant Commander requirements.

In the 2015 PB, the Air Force decided to retire the U-2 in 2016. In accordance with 10 U.S.C. 2244a, the U-2 weapon system is identified as Equipment Scheduled For Retirement Or Disposal: Limitation On Expenditures For Modifications, stating that modification to any aircraft (i.e., a given tail number, weapon, or item of equipment that the SECAF plans to retire or otherwise dispose of within 5 years after the date on which the modification would be completed) are prohibited.

In the 2016 PB, the Air Force re-phases U-2 divestiture to begin in FY2019 and to complete no later than FY2020. In accordance with 10 U.S.C. 2244a, the Secretary of the Air Force may waive the prohibition on modifications if the Secretary determines that carrying out the modification is in the national security interest of the United States. Therefore, modifications required to address sustainment issues (diminishing manufacturing sources, vanishing vendor items) or operational utility may be submitted to the Secretary for approval to ensure operational effectiveness and to comply with guidance received in previous and current NDAs for the timeframe of phased divestiture.

The U-2 Program will continue to address reliability, maintainability, sustainability, and safety issues and support U-2 integration of payloads and capabilities by taking prudent acquisition actions to meet operational requirements, comply with previous NDAA guidance, and IAW 10 U.S.C. Prudent acquisition 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 as well as studies supporting analysis and investment in future U-2 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.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305202F / <i>Dragon U-2</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	13.700	5.511	-	-	-
Current President's Budget	13.700	5.511	34.471	-	34.471
Total Adjustments	-	-	34.471	-	34.471
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	34.471	-	34.471

**Change Summary Explanation**

FY16 increase due to AF decision to rephrase U-2 divestiture to FY19

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> U-2 Aircraft Update Block 20.1	4.725	5.011	-
<b>Description:</b> Aircraft sustainment and/or enhancement development includes activities such as, but not limited to, trade studies, analysis, preliminary system engineering, system and subsystem testing or demonstrations, sensor specification development, Avionics Processor (AVP) upgrades, mission planning Joint Mission Planning System (JMPS) migration, Inertial Navigation System (INS) / Global Positioning System (GPS) stellar tracker initiatives, GPS tech Refresh, and tactical data link (L-16, IBS, IFDL, MADL, etc.) design and integration.			
<b>FY 2014 Accomplishments:</b> FY14 Supported aircraft and sensor sustainment efforts such as, sensor designs through critical design review and airframe/ systems sustainment plans, designs, and demonstrations of aircraft avionics, mission planning systems, and airframe sensors.			
<b>FY 2015 Plans:</b> FY15 Supports aircraft sustainment activities such as, but not limited to, sensor sustainment and/or enhancements, avionics, mission planning, and airframe sustainment.			
<b>FY 2016 Plans:</b> No efforts are planned.			
<b>Title:</b> U-2 Payload Update Block 20.1	8.975	0.500	34.471

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305202F / <i>Dragon U-2</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> Aircraft payload development supports sustainment and/or enhancement development includes activities such as, but not limited to, trade studies, analysis, preliminary system engineering, system and subsystem testing or demonstrations, sensor specification development, Advanced Synthetic Aperture Radar System (ASARS) development, integration and test, defensive systems, strategic and tactical data link (L-16, IBS, IFDL, MADL, etc.) design and integration.</p> <p><b>FY 2014 Accomplishments:</b>                      FY14 supported aircraft and sensors sustainment and/or enhancement activities such as, but not limited to, Advanced Synthetic Aperture Radar System (ASARS) design and development, Avionics Processor (AVP), mission planning Joint Mission Planning System (JMPS) migration, and airframe sustainment.</p> <p><b>FY 2015 Plans:</b>                      FY15 supports aircraft and sensors sustainment and/or enhancement activities such as, but not limited to, Advanced Synthetic Aperture Radar System (ASARS) design and development, Avionics Processor (AVP), mission planning Joint Mission Planning System (JMPS) migration, and airframe sustainment.</p> <p><b>FY 2016 Plans:</b>                      FY16 will support sensor sustainment and/or enhancement activities such as, but not limited to, Advanced Synthetic Aperture Radar System (ASARS) development, integration and test, defensive systems, and datalinks.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	13.700	5.511	34.471

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA05: Line Item # 11U200: <i>U-2 Mods</i>	49.547	-	22.095	-	22.095	36.396	26.803	7.535	-	Continuing	Continuing
• OPAF: BA02: Line Item # 821800: <i>Passenger Carrying Vehicles</i>	0.126	0.064	-	-	-	-	-	-	-	-	0.313
• RDT&E: BA07: 0305206F: <i>Airborne Reconnaissance Systems</i>	9.739	20.172	19.450	-	19.450	15.769	15.730	14.007	14.257	Continuing	Continuing

**Remarks**  
 A portion of funds in Airborne Reconnaissance Systems will be used to support sensor refurbishment and development.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305202F / <i>Dragon U-2</i>	
<b>E. Acquisition Strategy</b> Modifications to existing platform and associated ground control equipment via Engineering Change Proposals (ECPs)/Task Orders on existing USAF contracts. There is associated procurement funding tied to this development activity.		
<b>F. Performance Metrics</b> 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.		



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305202F / <i>Dragon U-2</i>	<b>Project (Number/Name)</b> 674820 / <i>Sensor Development</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ASARS	SS/CPFF	Raytheon/Lockheed Martin : El Sugunda, CA	-	8.975	Aug 2014	0.500		34.471		-		34.471	Continuing	Continuing	TBD
Mission Planning System (JMPS)	SS/CPFF	Lockheed Martin Aeronautics : Palmdale, CA	-	0.200	Jun 2014	-		-		-		-	Continuing	Continuing	TBD
Avionics AVP Upgrade/ OMS Analysis	SS/CPFF	Lockheed Martin Aeronautics : Palmdale, CA	-	4.525	Jul 2014	-		-		-		-	-	4.525	TBD
Airframe Sustainment Sensors (LESS)	SS/CPFF	Lockheed Martin Aeronautics : Palmdale, CA	-	-		5.011		-		-		-	-	5.011	TBD
<b>Subtotal</b>			-	13.700		5.511		34.471		-		34.471	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA: Other Gov't Cost	SS/T&M	Spectrum : Warner Robins, GA	-	-		-		-		-		-	-	-	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305202F / <i>Dragon U-2</i>	<b>Project (Number/Name)</b> 674820 / <i>Sensor Development</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

Advanced Synthetic Aperture Radars System (ASARS)	
Mission Planning	

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305202F / <i>Dragon U-2</i>	<b>Project (Number/Name)</b> 674820 / <i>Sensor Development</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Advanced Synthetic Aperture Radars System (ASARS)	1	2014	4	2018
Mission Planning	1	2014	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	1.000	20.000	-	-	-	-	-	-	-	-	21.000
675372: <i>Integrated Sensor IS Structure</i>	-	1.000	-	-	-	-	-	-	-	-	-	1.000
67A026: <i>MAGIC</i>	-	-	20.000	-	-	-	-	-	-	-	-	20.000

**Note**

In FY 2015, 675372, Integrated Sensor IS Structure, was completed.

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

This PE focuses USAF efforts on long endurance platforms that provide days or months of endurance and their associated sensors and communications suites. Efforts include, but are not limited to, optionally piloted airships, Remotely Piloted Aircraft (RPAs), or more standard aircraft platforms flown as manned or unmanned.

The Integrated Sensor Is Structure (ISIS) project intended to develop a radar that is fully integrated into a station-keeping, stratospheric airship. ISIS intended to support the nation's need for persistent wide-area surveillance, tracking, and engagement of time-critical air and ground targets. Automated surveillance and tracking included air targets to the radar horizon of 600 km and all ground targets to a range of 300 km. The radar aperture intended to provide track data directly to users in-theater. After program restructure, the effort was reduced to radar and airship material risk reductions. The program efforts complete in FY 2015.

The Medium Altitude Global ISR and Communications (MAGIC) project is developing a multiple-day, medium altitude ISR unmanned aircraft system (UAS) to provide long endurance surveillance with a multiple sensor payload. This concept was initiated by the Office of the Secretary of Defense (OSD) as a Joint Capabilities Technology Demonstration (JCTD) in the 3rd Quarter FY 2010 with a competition between five defense industry partners. Aurora Flight Sciences' Orion Remotely Piloted Aircraft (RPA) concept was chosen as the JCTD candidate by OSD/Director of Defense, Research and Engineering (DDR&E) per the recommendation of the Combatant Commands (COCOMs). The MAGIC/Orion RPA initiative was subsequently released from the JCTD process and transitioned to the Air Force as the sponsor of this developmental initiative in the 3rd Quarter FY 2011. Aurora completed the first flight test series from 24 August to 16 November 2013 (5 sorties, 10.4 hours) and the second flight test series from 1 June to 7 August 2014 (8 sorties, 35.9 hours). A third flight test series is underway and has accomplished a maximum sortie duration of 80.0 hours.

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.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	1.000	-	-	-	-
Current President's Budget	1.000	20.000	-	-	-
Total Adjustments	-	20.000	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	20.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-	-	-

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

**Project:** 67A026: *MAGIC*

Congressional Add: *MAGIC*

	<b>FY 2014</b>	<b>FY 2015</b>
	-	20.000
Congressional Add Subtotals for Project: 67A026	-	20.000
Congressional Add Totals for all Projects	-	20.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>				<b>Project (Number/Name)</b> 675372 / <i>Integrated Sensor IS Structure</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675372: <i>Integrated Sensor IS Structure</i>	-	1.000	-	-	-	-	-	-	-	-	-	1.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2015, 675372, Integrated Sensor Is Structure, was completed.

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

The Integrated Sensor Is Structure (ISIS) Program intended to develop a radar fully integrated into a station-keeping stratospheric airship. ISIS intended to support the nation's need for persistent wide-area surveillance, tracking, and engagement of time-critical air and ground targets. Automated surveillance and tracking objectives included air targets to the radar horizon of 600 km and all ground targets to a range of 300 km. The radar aperture also intended to provide track data directly to users in-theater. The objective system was planned to launch from CONUS locations with a multi-year operational life.

DARPA funded development of the prototype in FY09-12. Air Force contributed funding from FY10-FY14 to this joint DARPA/Air Force project. This project included completion of the designs for the radar, propulsion, power systems, and the airframe, but was focused on demonstrating the ability to manufacture and demonstrate performance objectives of the radar and material objectives of the airship. The radar element and airship materials demonstrations will be completed in FY2015, using prior year funding.

Funds also covered studies and analysis to support current program planning and execution and future program planning.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> ISIS	1.000	-	-	-	-
<b>Description:</b> Design, develop, and demonstrate radar technologies involving large apertures and low power. Design and demonstrate power generation and airship materiel technologies.					
<b>FY 2014 Accomplishments:</b> Conducted selected radar demonstration and air ship risk reduction activities.					
<b>FY 2015 Plans:</b> N/A					
<b>FY 2016 Base Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 675372 / <i>Integrated Sensor IS Structure</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
N/A					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	1.000	-	-	-	-

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

**Remarks**

**D. Acquisition Strategy**

This was a Cost-Plus-Fixed-Fee contract with a total value of \$462M. The project was funded with a cost sharing agreement between the Air Force and DARPA under a Memorandum of Agreement. Air Force funds intended for the contract were provided to DARPA via a Military Interdepartmental Purchase Request (MIPR) for obligation. The Air Force Research Laboratory acted as the Contracting Officer's Technical Representative for DARPA. The prime contractor is Lockheed Martin Aeronautics of Palmdale, CA and the radar sub is Raytheon Space and Airborne Systems, El Segundo, CA.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 675372 / <i>Integrated Sensor IS Structure</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Report Finalization and Closeout	C/CPFF	Lockheed Martin : Palmdale, CA	-	0.400	Dec 2013	-		-		-		-	-	0.400	462.000
<b>Subtotal</b>			-	0.400		-		-		-		-	-	0.400	462.000

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Closeout Support	Various	AFRL : WPAFB, OH	-	0.500		-		-		-		-	Continuing	Continuing	-
Program Support	Allot	645th AESG : WPAFB, OH	-	0.100		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.600		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	1.000	-	-	-	-	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 675372 / <i>Integrated Sensor IS Structure</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Radar Element Integration/Demo	[REDACTED]																											
Air Ship Risk Reduction	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 675372 / <i>Integrated Sensor IS Structure</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Radar Element Integration/Demo	1	2014	2	2015
Air Ship Risk Reduction	1	2014	2	2015

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 67A026 / <i>MAGIC</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
67A026: <i>MAGIC</i>	-	-	20.000	-	-	-	-	-	-	-	-	20.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	

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

The Medium Altitude Global ISR and Communications (MAGIC) project is an Air Force led technology and concept development to demonstrate the ability for a Remotely Piloted Aircraft (RPA) to stay aloft in the medium altitude structure for a multiple day duration mission with a minimum of 1,000 pounds payload capacity of intelligence, surveillance and reconnaissance sensor systems. The MAGIC concept was initiated by OSD/DDR&E in FY 2010 in response to the COCOMs ranking this type of initiative as the highest priority for a Joint Concept and Technology Demonstration (JCTD). In FY 2011, the Air Force accepted this initiative as the sponsor and MAGIC was subsequently removed from consideration as a JCTD and transitioned into the Air Force as a developmental project.

Persistent ISR supports both regular and irregular warfare. The MAGIC project will provide the USAF with critically needed data regarding sensor and aircraft performance parameters at a multiple day duration at medium altitude flight. The objectives laid out in the JCTD competition and selection of Aurora Flight Sciences' Orion RPA is being honored by the Air Force.

In FY 2010, OSD/DDR&E (now ASD/R&E) provided \$5M of initial funding to AFRL to initiate the MAGIC project. In FY 2011, ASD/R&E provided an additional \$5M to keep the MAGIC project development moving forward. The Air Force followed suit and provided \$10M of FY 2011 Below Threshold Reprogramming (BTR) to allow the Aurora Flight Sciences' Orion RPA development team to set up an operational endurance engine bench test and software integrations lab in preparation for a future long duration flight demonstration of the Orion RPA. Congressional Adds of \$19M in FY 2012 and \$50M in FY 2013 provided the Endurance UAV program manager with the funding needed for the continuation of the Orion RPA development and initiation of the three phase flight testing series.

In January 2012, Aurora Flight Sciences (AFS) at their Manassas, VA headquarters facility initiated their testing profile by performing a 123 hour duration endurance engine bench test. Flight Test Series #1 (FT1, Basic Performance) was accomplished with five flights totaling 10.4 flight hours between 24 August and 16 November 2013. Basic automated take-off and landing procedures plus basic flight maneuvers were the test objectives for FT1. FT2, Envelope Expansion, was accomplished with eight flights totaling 35.9 flight hours between 1 June and 7 August 2014. Operating at increasingly higher altitudes and varying airspeeds to collect fuel flow data in determining best endurance airspeed, increasingly heavier take-off gross weights and landing energies plus continuing inflight maneuvers were the test objectives of FT2. FT3, Payload Integration, began in November 2014 and is projected to complete in March 2015. The objective of FT3 operates increasingly longer durations with nominal payloads representative of operational requirements and will prove the concept of multiple day endurance.

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

<b>Congressional Add:</b> MAGIC	<b>FY 2014</b>	<b>FY 2015</b>
	-	20.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 67A026 / <i>MAGIC</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>
<b>FY 2014 Accomplishments:</b> N/A		
<b>FY 2015 Plans:</b> Payload integration and test		
<b>Congressional Adds Subtotals</b>	-	20.000

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

N/A

**Remarks**

**D. Acquisition Strategy**

The MAGIC project is being executed by the 645 AESG (BIG SAFARI SPO) to develop a COCOM requested long endurance remotely piloted aircraft (RPA) to address urgent and emerging operational needs for long dwell, persistent ISR requirements. The acquisition strategy for the Air Force to develop a long endurance, persistent ISR capability for the COCOMs was an outgrowth of a Joint Capabilities Technology Demonstration (JCTD) started in FY 2010. Efforts concerning this initiative, contracted with Aurora Flight Sciences and their Orion RPA, include: completion of studies analysis, development of a prototype air vehicle, bench testing of engines and other aircraft components, ground continuity testing of select avionics, flight controls, and engine components, slow and high speed ground taxiing and a full flight series testing of the Orion RPA capabilities with a culmination of a long duration flight demonstration. Concurrent efforts will continue in FY 2015 between the Aurora Flight Sciences production and management teams and the BIG SAFARI SPO to identify best of breed sensor systems and the availability of government furnished equipment (GFE) to fulfill the proposed payload configurations and continue hardware and software development and integration to meet operational airworthiness standards and mission requirements.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 67A026 / <i>MAGIC</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Design and Development	SS/CPFF	Aurora : Manassas, VA	-	-		10.800	Jan 2015	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		10.800		-		-		-	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test	SS/CPFF	Aurora : Manassas, VA	-	-		7.600	Jan 2015	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		7.600		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA	SS/FFP	multiple : ,	-	-		1.600	Jan 2015	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		1.600		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	20.000	-	-	-	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 67A026 / <i>MAGIC</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Basic Performance Flights -- Flight Test Series 1	■																											
Retrofit Schedule A -- Component Design and Integration	■	■																										
Envelope Expansion Flights -- Flight Test Series 2			■	■																								
Retrofit Schedule B -- Component Design and Integration			■	■																								
Long Endurance Flights -- Flight Test Series 3, First Half							■																					
Sensor Payload Integration							■																					
Payload Flights -- Flight Test Series 3, Second Half							■																					

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305205F / <i>Endurance Unmanned Aerial Vehicles</i>	<b>Project (Number/Name)</b> 67A026 / <i>MAGIC</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Basic Performance Flights -- Flight Test Series 1	1	2014	1	2014
Retrofit Schedule A -- Component Design and Integration	1	2014	2	2014
Envelope Expansion Flights -- Flight Test Series 2	3	2014	4	2014
Retrofit Schedule B -- Component Design and Integration	3	2014	1	2015
Long Endurance Flights -- Flight Test Series 3, First Half	1	2015	1	2015
Sensor Payload Integration	2	2015	2	2015
Payload Flights -- Flight Test Series 3, Second Half	2	2015	2	2015



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**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / <i>Airborne Reconnaissance Systems</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	47.059	37.652	50.154	-	50.154	45.886	61.291	60.028	61.105	Continuing	Continuing
674818: <i>Imaging and Targeting Support</i>	-	9.739	20.172	19.450	-	19.450	15.769	15.730	14.007	14.257	Continuing	Continuing
675092: <i>JTC/SIL MUSE</i>	-	2.472	3.934	3.475	-	3.475	3.880	3.452	3.513	3.576	Continuing	Continuing
675148: <i>Common-Airborne Sense and Avoid (C-ABSAA)</i>	-	-	-	19.735	-	19.735	21.931	37.423	38.129	38.811	Continuing	Continuing
675291: <i>Gorgon Stare</i>	-	10.000	10.000	-	-	-	-	-	-	-	-	20.000
675292: <i>Hyperspectral Sensors</i>	-	1.156	3.546	2.691	-	2.691	2.841	3.192	2.857	2.908	Continuing	Continuing
676025: <i>Data Compression</i>	-	-	-	4.803	-	4.803	1.465	1.494	1.522	1.553	Continuing	Continuing
676031: <i>Dismount Detection RADAR</i>	-	23.692	-	-	-	-	-	-	-	-	-	23.692

**Note**

In FY 2016, PE 0305220F, RQ-4, Project 675148, Common Airborne Sense and Avoid (C-ABSAA), efforts transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148, Common Airborne Sense and Avoid (C-ABSAA), in order to provide greater visibility into this capability and prepare for expanded applications.

In FY 2016, PE 0305208F, Distributed Common Ground Station (DCGS), Project 676025, Data Compression, efforts transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 676025, Data Compression, in order to provide greater visibility into this capability.

In FY 2015, Project 676031, the Dismount Detection Radar effort, was completed.

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

The Airborne Reconnaissance Systems (ARS) program coordinates the development of advanced technologies (sensors, data links, targeting networks and products, and quick reaction capabilities) in support of multiple airborne reconnaissance platforms, both manned and unmanned. Its objectives are to develop, demonstrate, and rapidly transition advanced, interoperable, multi-platform solutions to reduce the find, fix, target, and track kill chain timeline, and to provide safe separation and collision avoidance for Remotely Piloted Aircraft (RPAs). It provides for modeling/simulation, training and systems engineering. This program also coordinates the development of common collection, processing, and dissemination solutions for near-real time Intelligence, Surveillance, and Reconnaissance (ISR).

Funds in any project can also cover activities to include studies and analysis to support both current program planning and execution and future program planning.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / <i>Airborne Reconnaissance Systems</i>
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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.

The FY2016 funding request was reduced by \$0.983 million to account for the availability of prior execution balances.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	47.155	28.113	31.408	-	31.408
Current President's Budget	47.059	37.652	50.154	-	50.154
Total Adjustments	-0.096	9.539	18.746	-	18.746
• Congressional General Reductions	-	-0.461			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-0.096	-	18.746	-	18.746

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

**Project:** 675291: *Gorgon Stare*

Congressional Add: *NVDF/WAMI Integration, Adaptive Compression, and Processing*

Congressional Add Subtotals for Project: 675291

Congressional Add Totals for all Projects

	<b>FY 2014</b>	<b>FY 2015</b>
	10.000	10.000
	10.000	10.000
	10.000	10.000

**Change Summary Explanation**

FY14 changes are because funding was taken to cover a Department voucher.

FY 2016 changes are due to the transfer of two projects, Common Airborne Sense and Avoid and Data Compression, into Airborne Reconnaissance Systems, as well as the removal of \$5.6M for higher Department priorities.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems				<b>Project (Number/Name)</b> 674818 / Imaging and Targeting Support			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
674818: <i>Imaging and Targeting Support</i>	-	9.739	20.172	19.450	-	19.450	15.769	15.730	14.007	14.257	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The purpose of the Imaging and Targeting Support (I&TS) program is to develop and demonstrate next-generation, persistent, wide area surveillance, aircraft avoidance, and common imagery reconnaissance sensor capabilities (radar and electro-optical systems), including sensor data processing, for multiple airborne platforms, as well as sensor products to aid in rapid targeting (geolocation models, sensor-based exploitation tools, sensor networking capabilities).

Developmental efforts pursued are: improved sensor capabilities such as hyperspectral imagery (HSI), measurement and signature intelligence (MASINT), polarimetric imaging, ground moving target indication(GMTI), foliage penetration (FOPEN), and additional radar, electro-optical, and other modalities; increased geolocation accuracy; increased dismount detection capability; advanced sensor data correlation; automated target detection; network centric warfare; and other Intelligence, Surveillance, and Reconnaissance (ISR) and associated Tasking, Processing, Exploitation, and Dissemination (TPED) capabilities. These efforts are intended to reduce both target search and kill chain timelines as well as supporting traditional intelligence activities. This project will also increase interoperability among developed systems by developing common standards and tools.

The funds in this project, less Congressional adds and Quick Reaction Capabilities (QRCs), are distributed in priority order for the goal of building a comprehensive Geospatial Intelligence (GEOINT) capability for the USAF. On an annual basis, developmental technologies are reviewed against warfighter capabilities and requirements based on strategic roadmaps. Projects advancing the technological maturity of promising sensors and processing capabilities are reviewed and prioritized into a recommended list for senior executive direction to implement in the coming year.

Traditional focus areas include, but are not limited to: development and demonstration of common radar and electro-optical sensors (Synthetic Aperture Radar (SAR), Low Frequency SAR, and antenna, Electro-Optical(EO), Infrared (IR), HSI, Low Light, Laser Radar (LADAR), Light Detection And Ranging (LIDAR) and their operational modes (High Resolution Imagery, Ground and Dismount Moving Target Indication(GMTI/DMTI), Persistent Surveillance, Wide Area Motion Imagery (WAMI), Spectral Identification) for multiple airborne platforms, including medium and high altitude platforms; development and demonstration of advanced tactical sensor and associated TPED processing algorithms and tools (automatic registration, automatic and assisted target detection, network centric warfare). Development of integrated multi-sensor capabilities to detect and identify obscured targets (OT); development and implementation of imagery standards (Common Ground/Dismount Moving Target Indicator (GMTI/DMTI), National Imagery Transmission Format (NITF); and monitoring and enhancement of Imagery Intelligence (IMINT) product quality (radar and EO/IR imagery, GMTI data, and spectral information) and timeliness throughout the image chain (from sensor to user). These efforts focus on reducing the find, fix and track elements of the time critical targeting kill-chain timeline while improving operator and decision-maker efficiency and effectiveness.

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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 674818 / Imaging and Targeting Support

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p><b>Title:</b> Imaging &amp; Targeting Support (I&amp;TS)</p> <p><b>Description:</b> Develop/demonstrate and advance technical maturity of promising sensors and processing capabilities (ex: radar improvement, next-generation hyperspectral imaging (HSI), laser radar/light detection and ranging (LADAR/LIDAR), and data mitigation technologies).</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Developed advanced radar sensor algorithms, multiband EO/IR sensors, other GEOINT sensor modalities, high volume on-board data storage, and near real time onboard processing.</li> <li>- Continued SAR and HSI sensor developments in support of high-altitude platforms.</li> <li>- Completed sensor library.</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue to develop/demonstrate advanced HSI focal plane array material, sensors, and detection algorithms, multiband longer range EO/IR sensors, other GEOINT sensor modalities for cueing and future data fusion, improved on-board data processing, improved/ advanced radar sensor algorithms and capabilities, polarimetric imaging, and high volume on-board data storage. Enhance capabilities of airborne LIDAR.</li> <li>- Develop and modernize advanced SAR sensors for future high-altitude applications, Anti-Access Area Denial, and foliage penetration (FOPEN).</li> </ul> <p><b>FY 2016 Base Plans:</b></p> <p>Will continue development, modernization, and demonstration of advanced sensors and detection and processing algorithms, hyperspectral imaging technologies, multiband EO/IR and SAR sensor systems, enhanced lidar capabilities, polarimetric imaging, and other GEOINT sensing modalities for Anti-Access Area Denial, FOPEN, and littoral environments.</p> <p><b>FY 2016 OCO Plans:</b></p> <p>N/A</p>	7.335	20.172	19.450	-	19.450
<p><b>Title:</b> Advanced Synthetic Aperture Radar System (ASARS) 2B/2C</p> <p><b>Description:</b> Update Advanced Synthetic Aperture Radar System (ASARS) due to Diminishing Manufacturing Sources (DMS) issues and user identified capability gaps. Includes total government and contractor costs for this project.</p> <p><b>FY 2014 Accomplishments:</b></p>	2.404	-	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 674818 / Imaging and Targeting Support

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Completed ASARS next generation updates to the ASARS 2B/2C Phase 1 to CDR. <i><b>FY 2015 Plans:</b></i> N/A <i><b>FY 2016 Base Plans:</b></i> N/A <i><b>FY 2016 OCO Plans:</b></i> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	9.739	20.172	19.450	-	19.450

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE: BA07: PE 0305202F: <i>Dragon U-2 (JMIP)</i>	13.700	5.511	-	-	-	-	-	-	-	-	-

**Remarks**  
A portion of the funding within the U-2 RDTE line will be used to advance ASARS refurbishment and modernization.

**D. Acquisition Strategy**  
Acquisition strategy is to maximize commercial and national development efforts and investment through multiple contracting methods, including the use of Engineering Change Proposals (ECP) to modify existing contracts and new contracts that were awarded both competitively or on a sole source basis.

**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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0305206F / Airborne Reconnaissance Systems				674818 / Imaging and Targeting Support							
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
MB-SAR	C/CPFF	Northrop Grumman : Columbia, MD	-	0.307	Jun 2014	-		-		-		-	Continuing	Continuing	19.357
Lidar-HSI Data Fusion	C/CPFF	MIT LL : Lexington, MA	-	-		2.280	Feb 2015	2.220	Feb 2016	-		2.220	Continuing	Continuing	4.500
GOTCHA Motion Imagery SAR	C/CPFF	Various : Various,	-	0.978	Jun 2014	-		-		-		-	Continuing	Continuing	4.924
HALO	C/CPFF	DRS Sensors & Targeting Systems : Cypress, CA	-	1.870	Jul 2014	-		-		-		-	Continuing	Continuing	1.870
HEIRS	C/CPAF	Lockheed Martin, Leidos, UTC Aerospace Systems : Various,	-	2.041	Aug 2014	3.100	Jan 2015	-		-		-	Continuing	Continuing	5.000
KeyRadar	C/CPFF	KEYW : Severn, MD	-	-		2.000	Feb 2015	1.800	Mar 2016	-		1.800	Continuing	Continuing	3.800
SlimSAR Multi-INT	C/CPFF	Artemis, BAE : Hauppauge, NY	-	-		1.790	Mar 2015	2.370	Apr 2016	-		2.370	Continuing	Continuing	4.160
LWIR PI	C/CPFF	Raytheon : El Segundo, CA	-	-		1.000	Dec 2014	1.000	Feb 2016	-		1.000	Continuing	Continuing	2.000
Compressive Sensing HD Lidar	C/CPFF	Raytheon : El Segundo, CA	-	-		1.460	Mar 2015	1.190	Mar 2016	-		1.190	Continuing	Continuing	2.650
HPC Processing	C/CPFF	BAE, Leidos, KEYW : Dayton, OH	-	-		2.250	Nov 2014	2.250	Nov 2015	-		2.250	Continuing	Continuing	4.500
Common Module Spectrometer	C/CPFF	Raytheon : El Segundo, CA	-	-		4.000	Jan 2015	-		-		-	Continuing	Continuing	7.381
ASARS 2B/2C	C/CPAF	Raytheon : El Segundo, CA	-	2.500	Sep 2014	-		-		-		-	Continuing	Continuing	-
Other Tech Efforts (prioritized by GCWG)	Various	Various : Various,	-	0.815	Aug 2014	0.992	Dec 2014	7.170	Mar 2016	-		7.170	Continuing	Continuing	-
<b>Subtotal</b>			-	8.511		18.872		18.000		-		18.000	-	-	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 674818 / Imaging and Targeting Support
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<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA: Other Govt Cost	SS/T&M	Various : Dayton, OH	-	1.228	Jan 2014	1.300	Jan 2015	1.450	Jan 2016	-		1.450	Continuing	Continuing	-
<b>Subtotal</b>			-	1.228		1.300		1.450		-		1.450	-	-	-

			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	9.739		20.172		19.450		-		19.450	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 674818 / Imaging and Targeting Support

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
	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				
Advanced SAR Development	[Redacted]																															
- Gotcha MI-SAR	[Redacted]																															
-- Flight Demo (Gotcha MI-SAR)																																
- Key Radar																																
-- Flight Demo (Key Radar)																																
- SLIM SAR																																
-- System Demos (SLIM SAR)																																
- HPC Processing																																
-- Ground-based Demo (HPC Processing)																																
-- On-board Demo (HPC Processing)																																
Advanced Hyperspectral Development	[Redacted]																															
- Common Module	[Redacted]																															
-- CDR (Common Module)																																
-- Flight Demo (Common Module)																																
- Si:Ga																																
-- Prototype Delivery (Si:Ga)																																
- HALO																																
EO/IR	[Redacted]																															
- HEIRS																																
-- Flight Test (HEIRS)																																
- LWIR PI																																
- VICCI																																
-- Flight Demo (VICCI)																																
LIDAR	[Redacted]																															



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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 674818 / Imaging and Targeting Support
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
- Lidar/HSI Data Fusion																												
-- Flight Demos (Lidar/HSI Data Fusion)																												
- Compressive Sensing HD Lidar																												
-- Ground Testing (CS HD Lidar)																												
Sensor Studies & Analysis																												
Other Technology Efforts (Prioritized by GCWG)																												
- PETRA																												
-- Data Storage Demo (PETRA)																												
ISR Innovations																												
- DB-110 Demo - Report																												
- ISR Testbed 1st Customer Flight																												
- ASARS 2B/2C																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 674818 / Imaging and Targeting Support

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Advanced SAR Development	1	2014	4	2020
- Gotcha MI-SAR	1	2014	4	2015
-- Flight Demo (Gotcha MI-SAR)	3	2015	3	2015
- Key Radar	3	2015	3	2017
-- Flight Demo (Key Radar)	1	2017	1	2017
- SLIM SAR	3	2015	3	2017
-- System Demos (SLIM SAR)	4	2016	3	2017
- HPC Processing	1	2015	1	2017
-- Ground-based Demo (HPC Processing)	3	2015	2	2016
-- On-board Demo (HPC Processing)	2	2016	1	2017
Advanced Hyperspectral Development	1	2014	4	2020
- Common Module	1	2014	3	2016
-- CDR (Common Module)	2	2015	2	2015
-- Flight Demo (Common Module)	4	2016	4	2016
- Si:Ga	1	2014	4	2015
-- Prototype Delivery (Si:Ga)	4	2015	4	2015
- HALO	1	2015	2	2016
EO/IR	1	2014	4	2020
- HEIRS	2	2015	4	2016
-- Flight Test (HEIRS)	4	2016	4	2016
- LWIR PI	1	2015	4	2016
- VICCI	1	2014	2	2015

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 674818 / Imaging and Targeting Support
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Events	Start		End	
	Quarter	Year	Quarter	Year
-- Flight Demo (VICCI)	1	2015	2	2015
LIDAR	1	2014	4	2020
- Lidar/HSI Data Fusion	3	2015	3	2017
-- Flight Demos (Lidar/HSI Data Fusion)	4	2015	3	2017
- Compressive Sensing HD Lidar	3	2015	2	2017
-- Ground Testing (CS HD Lidar)	1	2017	2	2017
Sensor Studies & Analysis	1	2014	4	2020
Other Technology Efforts (Prioritized by GCWG)	1	2014	4	2020
- PETRA	1	2014	3	2015
-- Data Storage Demo (PETRA)	2	2015	2	2015
ISR Innovations	1	2014	4	2020
- DB-110 Demo - Report	1	2014	1	2014
- ISR Testbed 1st Customer Flight	3	2014	3	2014
- ASARS 2B/2C	1	2014	4	2015

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems				<b>Project (Number/Name)</b> 675092 / JTC/SIL MUSE			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675092: JTC/SIL MUSE	-	2.472	3.934	3.475	-	3.475	3.880	3.452	3.513	3.576	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Joint Technology Center/Systems Integration Laboratory (JTC/SIL) is a center of technical excellence to support Unmanned Aircraft Systems (UAS) and Remotely Piloted Aircraft (RPA) programs within the services. The mission includes Service-specific and Joint Command, Control, Communications, Computers and Intelligence, Surveillance, and Reconnaissance (C4ISR) programs throughout DoD. The JTC/SIL provides a Government testbed for interoperability, rapid prototyping, technology insertion and transition, systems engineering, modeling/simulation, training and C4ISR optimization. The cornerstone of JTC/SIL's diverse tool set is the Multiple Unified Simulation Environment (MUSE), which is the DoD simulation/training system of choice for many UAS, RPA and ISR systems. The MUSE is also known as the Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) in its Air Force application. The MUSE/AFSERS simulates Air Vehicles, Sensors, Datalinks, Takeoff and Landing Systems, and to some degree, surrogate UAS and RPA ground stations, when actual ground stations are unavailable.

The Services and combatant commanders have a requirement for the capability to train with a system that provides a real-time simulation environment containing multiple intelligence systems that can be integrated with larger force-on-force simulations. The MUSE creates a realistic operational environment which supports the ability to assess military utility, architecture and concept of employment development, and Tactics, Techniques, and Procedures (TTP) refinement, conduct emerging concepts experimentation, and optimize C4ISR within warfighting exercises and experiments. It is the preferred simulation system used by the combatant commanders and Joint Services to support command and battle staff C4ISR training.

The MUSE/AFSERS also creates a realistic operational environment that supports: an embedded training capability for multiple Program Managers; tools to minimize acquisition and life cycle cost and schedule impacts; ability to conduct emerging concepts experimentation, future systems exploration, systems integration, and technology insertion; applications for Joint and Service-specific warfighting exercises; and C4ISR optimization.

MUSE/AFSERS is currently in use within all Services and most unified commands simulating MQ-1, MQ-9, RQ-4, MQ-1C, M/RQ-5, RQ-7, national and commercial satellite collectors, P-3, E-8, and the U-2. During warfighting exercises, the JTC/SIL integrates imagery simulations with associated C4ISR systems to support the execution of critical imagery processes. For those assets normally not available for training, the JTC/SIL provides surrogate systems and interfaces. Distributed training environments, virtually linking participants from various locations worldwide, are routinely supported within the MUSE architecture. The MUSE/AFSERS is also used as a mission rehearsal tool for current, on-going military combat operations.

The JTC/SIL supports the OSD UAS Task Force staff and the Standards and Interoperability Integrated Product Team, as well as the joint team working the Ground Segment Interface. The JTC/SIL is the primary custodian of this interface and in that role performs various supporting tasks including development of tools for helping the definition and execution of open architecture for joint service ground control systems, developing and maintaining standardization agreement (STANAG) 45 joint interoperability tasks to be defined on an annual basis.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675092 / JTC/SIL MUSE
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Activities also include studies and analysis supporting current and future program planning and project execution.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p><b>Title:</b> Air Force Synthetic Environment for Reconnaissance and Surveillance (AFSERS) Development</p> <p><b>Description:</b> DoD's simulation/training system of choice for ISR systems, sensors, and platforms. Includes AFSERS, Common Ground Station Interface, and infrastructure support.</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Developed AFSERS for MQ-9.</li> <li>- Provided improvements to simulations of existing and emerging platforms and sensors.</li> <li>- Improved integration of AFSERS into other networks.</li> <li>- Supported Intel Simulation Training at Goodfellow Air Force Base.</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue to enhance the Multiple Unified Simulation Environment (MUSE) mission planning training software to facilitate ease of use, concurrency and interoperability with current mission planning application capabilities.</li> <li>- Enhance MUSE Service Oriented Architecture to support Cloud computing for US Air Force military exercises, to include Distributed Mission Operations Network (DMON) certification.</li> <li>- Enhance MUSE interoperability with Air Force federations such as Air, Space, and Cyberspace Constructive Environment; joint, live, virtual, constructive training, and specific federated interfaces with the Air Force intelligence-operations simulation.</li> <li>- Develop new ISR sensor simulation training capabilities to reflect service emerging assets, such as multi-sensor platforms.</li> <li>- Develop and port applicable training software for hosting on portable devices. Continue Intel Simulation Training support at Goodfellow Air Force Base.</li> </ul> <p><b>FY 2016 Base Plans:</b></p> <ul style="list-style-type: none"> <li>- Will redesign the Vignette Planning and Rehearsal Software by implementing a Service Oriented Architecture (SOA) to facilitate external users developing generic solutions and to optimize the software baseline to maintain pace with the training audience's requirements, thereby reducing the costs of travel and training.</li> <li>- Will redesign MUSE/AFSERS U2/RQ-4 (FFI - Fixed Frame Imagery) simulation Capability.</li> <li>- Will design and implement a Heads Up Display (HUD) wizard.</li> <li>- Will complete the full virtualization of MUSE/AFSERS.</li> <li>- Will implement Web enabled MUSE/AFSERS that will allow users to train, via a web browser, without needing the MUSE/AFSERS software installed on their systems.</li> </ul>	1.172	1.934	3.475	-	3.475

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675092 / JTC/SIL MUSE

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
- Will implement ports management into the MUSE/AFSERS baseline to better facilitate Information Assurance guidance and to be in accordance with the upcoming RMF (Risk Management Framework) that will replace DIACAP (Department of Defense Information Assurance and Accreditation Process). Will provide Exercise Support for Unified Endeavor, Key Resolve (KASC & KBSC - Korean Air Simulation Center & Korean Battle Simulation Center) & Ulchi Freedom Guardian (KASC & KBSC). - Will continue Intel Simulation Training support at Goodfellow Air Force Base.  <b>FY 2016 OCO Plans:</b> N/A					
<b>Title:</b> OSD Interoperability Support  <b>Description:</b> Joint Technology Center (JTC)/Systems Integration Laboratory (SIL) support to OSD interoperability requirements. Air Force portion of joint funding requirement.  <b>FY 2014 Accomplishments:</b> Provided service support to OSD interoperability efforts.  <b>FY 2015 Plans:</b> Complete Air Force support to OSD interoperability efforts, including support and configuration management of architecture products.  <b>FY 2016 Base Plans:</b> N/A  <b>FY 2016 OCO Plans:</b> N/A	1.300	2.000	-	-	-
<b>Accomplishments/Planned Programs Subtotals</b>	2.472	3.934	3.475	-	3.475

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE: BA07: PE 0305204A: <i>Tactical Unmanned Aerial Vehicles</i>	3.283	4.695	4.516	-	4.516	4.141	4.760	4.867	5.004	Continuing	Continuing
• RDTE: BA07: PE 0603261N: <i>Tactical Airborne Reconnaissance</i>	2.000	2.000	-	-	-	-	-	-	-	Continuing	Continuing

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675092 / JTC/SIL MUSE

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**

**D. Acquisition Strategy**

This is an enterprise services effort, jointly funded and centrally managed by the US Army. AFLCMC/WIN MIPRs funds in support of UAS modeling and simulation efforts.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675092 / JTC/SIL MUSE
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFSERS Development	MIPR	Redstone Arsenal : Huntsville, AL	-	1.172	Jan 2014	1.934	Jan 2015	3.475	Jan 2016	-		3.475	Continuing	Continuing	-
<b>Subtotal</b>			-	1.172		1.934		3.475		-		3.475	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
OSD Interoperability Support	MIPR	Redstone Arsenal : Huntsville, AL	-	1.300	Jan 2014	2.000	Feb 2015	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	1.300		2.000		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	2.472	3.934	3.475	-	3.475	-	-	-

**Remarks**



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675092 / JTC/SIL MUSE

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
AFSERS Development	[REDACTED]																											
Interoperability Support	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675092 / JTC/SIL MUSE

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AFSERS Development	1	2014	4	2020
Interoperability Support	1	2014	4	2015

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems				<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense and Avoid (C-ABSAA)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675148: Common-Airborne Sense and Avoid (C-ABSAA)	-	-	-	19.735	-	19.735	21.931	37.423	38.129	38.811	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2016, PE 0305220F, RQ-4, Project 675148, Common Airborne Sense and Avoid (C-ABSAA), efforts transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148, Common Airborne Sense and Avoid (C-ABSAA), in order to provide greater visibility into this capability and prepare for expanded applications.

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

C-ABSAA is an analysis and developmental effort in the pre-Material Development Decision phase of the acquisition lifecycle which supports emerging warfighter requirements to fully integrate Group 4-5 RPA into the National Airspace System (NAS), international airspace, other nations' sovereign airspace, and operational combat airspace to conduct the entire range of military operations across all mission environments. C-ABSAA also supports the "Worldwide Operations" Key Performance Parameter (KPP) in larger Remotely Piloted Aircraft (RPA) requirement documents, and Public Law 112-239 directing DoD collaboration with the Federal Aviation Administration (FAA) and the National Air and Space Administration (NASA) to safely integrate RPA in the NAS. Funding in this project supports the development of a Sense and Avoid (SAA) capability set for Group 4-5 RPA and covers analysis, research, and developmental activities as well as infrastructure and other government costs. Ongoing activities include support to the development of warfighter requirements and analysis of possible solution alternatives, the collaboration with the FAA, NASA, and Office of the Secretary of Defense (OSD) to develop national policy and standards, and SAA related studies, analysis, modeling and simulation, program planning and project execution. RPA platform specific integration and testing is not included.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> SAA-Related Requirements Development and Analysis, National Policy Standards Development, and Technology Development and Demonstration	-	-	19.735	-	19.735
<b>Description:</b> Support development and analysis of warfighter requirements and analysis of possible solution alternatives. Develop Sense and Avoid (SAA) technology and capabilities for Group 4-5 RPA. Collaborate with the FAA, NASA, and OSD to develop national policy and standards. Conduct SAA-related studies, analysis, modeling and simulation, demonstrations, program planning and project execution.					
<b>FY 2014 Accomplishments:</b> Efforts prior to FY 2016 reported under PE 0305220F.					
<b>FY 2015 Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense and Avoid (C-ABSAA)
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Efforts prior to FY 2016 reported under PE 0305220F.					
<b>FY 2016 Base Plans:</b> - Will continue to support Air Combat Command with Analysis of Alternatives study. - Will continue to collaborate with FAA and NASA on national policy and standards, and to build and exercise modeling and simulation capabilities to support requirements, policy/standards, and technology development. - Will continue SAA science and technology research and development with the AFRL.					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	19.735	-	19.735

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

**Remarks**

**D. Acquisition Strategy**  
C-ABSAA will integrate Better Buying Power 3.0 initiatives throughout its acquisition lifecycle and rely upon acquisition of government data rights to maximize contractor competition from Technology Development through Production. The program uses an incremental acquisition strategy to provide the warfighter with SAA capability for Group 4-5 RPA with increased, time-phased capability improvements as technology and risks achieve satisfactory levels. Group 4-5 RPA platforms will be expected to integrate the C-ABSAA provided capability into their unique systems via retrofit or in production.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense and Avoid (C-ABSAA)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C-ABSAA Technology Development	C/Various	Various : Various,	-	-		-		18.583	Oct 2015	-		18.583	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		18.583		-		18.583	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	Various	Various : Dayton, OH	-	-		-		1.152	Oct 2015	-		1.152	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		1.152		-		1.152	-	-	-

**Remarks**  
The Target supports multiple technology development contracts.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
<b>Project Cost Totals</b>		-	-	-	19.735	-	19.735	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305206F / <i>Airborne Reconnaissance Systems</i>			<b>Project (Number/Name)</b> 675148 / <i>Common-Airborne Sense and Avoid (C-ABSAA)</i>				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

**Remarks**  
The Target Value supports multiple technology development contracts.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense and Avoid (C-ABSAA)

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Analysis of Alternatives (AoA)																												
Capabilities Development Document (CDD)																												
National Policy and Standards Development																												
Modeling and Simulation Planning, Development, and Use																												
Material Solution Analysis																												
Milestone A (MS-A)																												
Technology Development & Risk Reduction																												
Milestone B (MS-B)																												
Engineering & Manufacturing Development																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / <i>Airborne Reconnaissance Systems</i>	<b>Project (Number/Name)</b> 675148 / <i>Common-Airborne Sense and Avoid (C-ABSAA)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Analysis of Alternatives (AoA)	1	2016	2	2017
Capabilities Development Document (CDD)	2	2017	3	2019
National Policy and Standards Development	1	2016	2	2018
Modeling and Simulation Planning, Development, and Use	1	2016	4	2020
Material Solution Analysis	1	2016	4	2017
Milestone A (MS-A)	4	2017	4	2017
Technology Development & Risk Reduction	4	2017	4	2019
Milestone B (MS-B)	4	2019	4	2019
Engineering & Manufacturing Development	4	2019	4	2020



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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675291 / Gorgon Stare
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675291: Gorgon Stare	-	10.000	10.000	-	-	-	-	-	-	-	-	20.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	

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

Gorgon Stare provides city-sized wide area airborne surveillance for Combatant Commanders and is managed by the 645th Aeronautical Systems Group, Intelligence, Surveillance, and Reconnaissance and Special Operations Forces (ISR&SOF) Directorate. The Gorgon Stare system provides a podded wide area airborne sensor suite integrated on specially-modified MQ-9 Reaper Remotely Piloted Aircraft (RPA). The Air Force Requirements Oversight Council (AFROC) approved Air Combat Command's recommendation to transition Gorgon Stare from a Quick Reaction Capability to an Air Force Enduring Capability in November 2014. Gorgon Stare's requirements are documented in the Gorgon Stare Wide Area Airborne Sensor Capabilities Production Document (draft). The acquisition strategy for this Air Force podded sensor suite solution is sustainment of the currently fielded capabilities with any upgrades implemented via validated -1067s or Urgent Operational Needs. Provisions to consider pre-planned product improvements (P3I) and/or multi-INT enhanced capabilities to address evolving and emerging technology advancements are within the scope of the acquisition strategy.

Development efforts conducted with FY14 Congressionally added RDT&E funds include software integration lab testing of Near Vertical Direction Finding (NVDF) with Gorgon Stare Inc 2 Wide Area Motion Imagery (WAMI) sensors. Funds spent on NVDF will provide a ramp for future airborne integration efforts as required. RDT&E efforts conducted with FY15 Congressionally added funds include development efforts focused on adaptive compression and processing to enable more efficient and timely reachback.

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 2014	FY 2015
<b>Congressional Add:</b> NVDF/WAMI Integration, Adaptive Compression, and Processing	10.000	10.000
<b>FY 2014 Accomplishments:</b> - Conducted demo integrating a fielded near vertical direction finding (NVDF) capability with an existing Gorgon Stare Wide Area Motion Imagery (WAMI) - Equipped MQ-9. - Demonstrated SIGINT sensor and Gorgon Stare WAMI sensors' integration in a software integration lab.		
<b>FY 2015 Plans:</b> Further develop adaptive compression and processing solutions to enable data dissemination via "reachback".		
<b>Congressional Adds Subtotals</b>	10.000	10.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675291 / Gorgon Stare

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

Line Item	FY 2014	FY 2015	FY 2016	FY 2016	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Cost To	Total Cost
			Base	OCO	Total					Complete	
• APAF: BP16: Line Item # PRDTB3: MQ-9 UAS Payloads (Spares)	8.256	6.790	5.554	-	5.554	3.575	0.218	-	-	-	-

**Remarks**

**D. Acquisition Strategy**

The wide area airborne surveillance requirement is being delivered via the Gorgon Stare podded wide area motion imagery sensor suite integrated on dedicated, specially-modified MQ-9 Reaper RPAs. Gorgon Stare transitioned from a Quick Reaction Capability to an Air Force Enduring Capability under AFROC authority in November 2014. The program is executed by the 645th AESG as a post-MS C program. The sensor suite will be sustained in its current configuration. Any future capability upgrades will be fielded as a result of validated -1067s or Urgent Operational Needs.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675291 / Gorgon Stare
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Near Vertical Direction Finding (NVDF) Integration Demo	SS/CPFF	Sierra Nevada Corporation : Sparks, NV	-	10.000	Feb 2015	-		-		-		-	Continuing	Continuing	-
Adaptive Compression and Processing	SS/CPFF	Sierra Nevada Corporation : Sparks, NV	-	-		10.000	Mar 2015	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	10.000		10.000		-		-		-	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	10.000	10.000	-	-	-	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305206F / <i>Airborne Reconnaissance Systems</i>			<b>Project (Number/Name)</b> 675291 / <i>Gorgon Stare</i>				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

**Remarks**  
 FY14 and FY15 funds are Congressional adds

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / <i>Airborne Reconnaissance Systems</i>	<b>Project (Number/Name)</b> 675291 / <i>Gorgon Stare</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Capability Transition Decision																												
Increment 2: final 3 podsets and ground equipment delivery																												
Pre-planned Product Improvement (airborne system, C2, tactical dissemination, processing)																												
NVDF / WAMI integration																												
Adaptive Compression and Processing for Data Dissemination																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / <i>Airborne Reconnaissance Systems</i>	<b>Project (Number/Name)</b> 675291 / <i>Gorgon Stare</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Capability Transition Decision	1	2015	1	2015
Increment 2: final 3 podsets and ground equipment delivery	4	2015	4	2015
Pre-planned Product Improvement (airborne system, C2, tactical dissemination, processing)	1	2014	1	2015
NVDF / WAMI integration	2	2015	1	2016
Adaptive Compression and Processing for Data Dissemination	2	2015	2	2016

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675292 / Hyperspectral Sensors
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675292: Hyperspectral Sensors	-	1.156	3.546	2.691	-	2.691	2.841	3.192	2.857	2.908	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Hyperspectral Sensors project develops Hyperspectral Imagery (HSI) sensors and capabilities for MQ-1 Remotely Piloted Aircraft (RPA) and other manned or unmanned aircraft. Within this project, the Airborne Cueing & Exploitation System-Hyperspectral (ACES HY) program helps to fulfill a portion of the sponsoring combatant command and Central Command's current HSI requirements. The ACES HY program developed sensors for the MQ-1B Predator Block 15 and included development of the required training, maintenance and fielding plans to support a working architecture.

Activities within this project also include studies and analysis supporting current and future program planning and tech development for advanced HSI sensors and capabilities, including high altitude HSI sensor developments per the HSI strategic roadmap.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<b>Title:</b> Airborne Cueing & Exploitation System - Hyperspectral (ACES HY)	1.156	3.546	2.691	-	2.691
<b>Description:</b> Develop capability enhancements and perform technical refresh on the ACES HY sensor system. Provide support data to accompany sensors and modifications. Tech development supporting sensor improvements and possible integration on other platforms.					
<b>FY 2014 Accomplishments:</b>					
- Developed ACES HY upgrades, including the qualification and integration of the ACES HY Rapid Innovation Fund (RIF) processor.					
- Completed the ACES HY MQ-9 Integration study.					
- Finalized pod selection.					
- Completed preliminary design studies.					
- Completed contractor integration laboratory testing at General Atomics.					
<b>FY 2015 Plans:</b>					
- Continue ACES HY upgrades, to include design development					
- Test a new ACES HY high resolution camera to resolve image interpretability findings from Operational Test and Evaluation (OT&E).					
- Conduct preliminary and critical design reviews					
- Build two prototype systems					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675292 / Hyperspectral Sensors

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
- Qualify the resulting design to the ACES HY system specification.					
<b>FY 2016 Base Plans:</b> - Will complete high resolution camera development and test and prepare for camera production effort. - Design develop and test replacement ACES HY GPS/INS system element in response to supportability issues and operational requirements. - Conduct preliminary and critical design reviews and build two units to support qualification testing.					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	1.156	3.546	2.691	-	2.691

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # PRDT01: MQ-1 Mods	4.272	2.755	-	-	-	-	-	-	-	-	-

**Remarks**  
A portion of the Predator modification funding listed above is used to support ACES HY integration.

**D. Acquisition Strategy**  
ACES HY production sensor deliveries were completed in July of 2014, using the Advanced Technology Support Program process developed by Office of the Secretary of Defense (OSD)'s Defense MicroElectronics Activity (DMEA) at McClellan AFB, CA. Sensors are currently managed at AFLCMC/WIILR, the MQ-1 Predator sustainment program office, Warner-Robbins AFB GA.

ACES HY utilizes a sole source Basic Ordering Agreement with Raytheon (McKinney, TX) for system modifications.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 675292 / Hyperspectral Sensors
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Processor Integration	SS/CPFF	Raytheon : McKinney, TX	-	0.555	Feb 2014	-		-		-		-	Continuing	Continuing	1.632
HRI Upgrade	SS/CPFF	Raytheon : McKinney, TX	-	-		2.892	Apr 2015	0.691	Mar 2016	-		0.691	Continuing	Continuing	4.587
GPS Update	SS/CPFF	Raytheon : McKinney, TX	-	-		-		1.540	Dec 2015	-		1.540	Continuing	Continuing	1.540
Other Tech Efforts	Various	Various : Various,	-	0.017	May 2014	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.572		2.892		2.231		-		2.231	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Support	SS/CPFF	MIT/LL : Cambridge, MA	-	0.195	May 2014	0.195	May 2015	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.195		0.195		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA: Other Govt Cost	SS/T&M	Various : Dayton, OH	-	0.389	Jan 2014	0.459	Jan 2015	0.460	Jan 2016	-		0.460	Continuing	Continuing	-
<b>Subtotal</b>			-	0.389		0.459		0.460		-		0.460	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force									Date: February 2015		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0305206F / Airborne Reconnaissance Systems			Project (Number/Name) 675292 / Hyperspectral Sensors				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract		
<b>Project Cost Totals</b>	-	1.156	3.546	2.691	-	2.691	-	-	-		

Remarks



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / <i>Airborne Reconnaissance Systems</i>	<b>Project (Number/Name)</b> 675292 / <i>Hyperspectral Sensors</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Production Deliveries	1	2014	3	2014
MQ-9 HSI Study	1	2014	3	2014
Capability Upgrades	1	2014	4	2020
Enhanced HSI Processor Retrofit	4	2014	1	2016
HRI Camera Upgrade	3	2015	4	2016
GPS Upgrade Effort	2	2016	2	2017

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 676025 / Data Compression
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
676025: Data Compression	-	-	-	4.803	-	4.803	1.465	1.494	1.522	1.553	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2016, PE 0305208F, Distributed Common Ground Station (DCGS), Project 676025, Data Compression, efforts transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 676025, Data Compression, in order to provide greater visibility into this capability.

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

The DCGS Data Compression effort provides the warfighter a capability to efficiently compress and decompress airborne ISR sensor data and transmit near realtime to tactical users through current and future bandwidth limited commercial satellite communications (SATCOM) or military SATCOM. The effort will develop, test and implement new sensor data compression and decompression algorithms for current and emerging airborne ISR sensors. Additionally, the program develops compression and decompression capabilities for manned and unmanned airborne platforms, associated ground stations, and DCGS. Outputs will meet standard certification for use within the DoD GEOINT and MASINT architectures.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<b>Title:</b> Data Compression	-	-	4.803	-	4.803
<b>Description:</b> The DCGS Data Compression effort provides the warfighter a capability to efficiently compress and decompress airborne ISR sensor data and transmit near realtime to tactical users through current and future bandwidth limited commercial satellite communications (SATCOM) or military SATCOM. The effort will develop, test and implement new sensor data compression and decompression algorithms for current and emerging airborne ISR sensors. Additionally, the program develops compression and decompression capabilities for manned and unmanned airborne platforms, associated ground stations, and DCGS. Outputs will meet standard certification for use within the DoD GEOINT and MASINT architectures.					
<b>FY 2014 Accomplishments:</b> Prior to FY 2016, efforts were reported under PE 0305208F, Distributed Common Ground Station.					
<b>FY 2015 Plans:</b> Prior to FY 2016, efforts were reported under PE 0305208F, Distributed Common Ground Station.					
<b>FY 2016 Base Plans:</b> - Increase development and testing of Persistent EO/IR and Phase History SAR data compression capabilities, LIDAR and other phenomenologies.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 676025 / Data Compression

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
- Will begin developing and testing compression and decompression algorithms for Persistent SAR and Smart Data Discrimination.  <b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	4.803	-	4.803

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

N/A

**Remarks**

**D. Acquisition Strategy**

The Data Compression acquisition approach is to design and develop compression and decompression technology hardware and software components, interfaces and standards for various airborne ISR platforms, ground stations, data storage facilities, and exploitation tools utilizing existing contracts with full and open competition where appropriate. Integration will be accomplished by the requisite program offices with data compression specific integration support provided.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 676025 / Data Compression
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technology Demonstration- Phase History	C/CPAF	TBD : TBD,	-	-		-		0.500		-		0.500	Continuing	Continuing	-
Technology Development-Phase History	C/CPAF	TBD : TBD,	-	-		-		1.500		-		1.500	Continuing	Continuing	-
Technology Development	C/CPAF	TBD : TBD,	-	-		-		1.278	Mar 2016	-		1.278	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		3.278		-		3.278	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technology Development - AFRL Support	C/Variou	Various : Various,	-	-		-		0.500	Mar 2016	-		0.500	Continuing	Continuing	-
Technology Development - Other Support	C/Variou	Various : Various,	-	-		-		0.300	Nov 2015	-		0.300	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.800		-		0.800	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various	Govt/Contractors : TBD,	-	-		-		0.725	Oct 2015	-		0.725	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		0.725		-		0.725	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems				<b>Project (Number/Name)</b> 676025 / Data Compression				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>		<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
<b>Project Cost Totals</b>	-	-	-		4.803	-	4.803	-	-	-	

**Remarks**



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 676025 / Data Compression

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Phase History SAR Phase 1																												
SAR Phase 2 Compression Demonstration																												
HSI Phase 2 Compression Demonstration																												
Phase History SAR Phase 2																												
LIDAR Development																												
Persistent EO/IR																												
Persistent SAR																												
Smart Data Discrimination																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 676025 / Data Compression

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Phase History SAR Phase 1	1	2016	3	2016
SAR Phase 2 Compression Demonstration	1	2016	3	2016
HSI Phase 2 Compression Demonstration	1	2016	4	2016
Phase History SAR Phase 2	4	2016	3	2018
LIDAR Development	3	2016	2	2020
Persistent EO/IR	1	2016	2	2018
Persistent SAR	1	2017	4	2020
Smart Data Discrimination	1	2017	4	2020

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems				<b>Project (Number/Name)</b> 676031 / Dismount Detection RADAR			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
676031: Dismount Detection RADAR	-	23.692	-	-	-	-	-	-	-	-	-	23.692
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2015, Project 676031, Dismount Detection Radar, was completed.

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

The Dismount Detection Radar (DDR) project designed, developed, integrated, and tested Ground Moving Target Indicator/Dismount Moving Target Indicator (GMTI/DMTI) and Synthetic Aperture Radar (SAR) capability for improved dismount and moving target detection, identification, tracking, and classification. DDR advanced Open Systems Architecture (OSA) in the area of sensors and mission systems. The DDR program also studied, developed, tested, and implemented new concepts, hardware and software capabilities that can be leveraged by the OSA design in the radar and associated TPED for GMTI, and various technical analysis/studies to support future advanced radar development.

Activities also included studies, analysis, and technology development, maturation, and demonstration to support current and future program planning and execution.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Dismount Detection RADAR (DDR)	23.692	-	-	-	-
<b>Description:</b> Design, develop, integrate, test, field, and sustain a persistent GMTI/DMTI capability in theater for employment on medium altitude air vehicles and various technical studies/analysis to support future advanced radar development.					
<b>FY 2014 Accomplishments:</b>					
- Completed sensor testing, integration of radar system on surrogate platform.					
- Completed flight testing and reported radar performance.					
- Completed development of third-party software mode and validated open system architecture approach.					
- Completed technical studies/analysis to support future advanced radar development.					
- Dispositioned both full and partial systems to AFLCMC/HB and to AFRL(classified)programs.					
<b>FY 2015 Plans:</b>					
NA					
<b>FY 2016 Base Plans:</b>					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 676031 / Dismount Detection RADAR

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
N/A					
<b>FY 2016 OCO Plans:</b>					
N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	23.692	-	-	-	-

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

**Remarks**

**D. Acquisition Strategy**

The acquisition strategy for Dismount Detection Radar (DDR) included a competitive source selection that began in 1QFY12 and was awarded in February 2012. After a ~100 day protest, the Government Accountability Office (GAO) denied all protest allegations allowing the Prime Contractor, Raytheon, to begin the design and development of the radar system in June 2012. The radar design included an OSA approach, which will be demonstrated when MIT/LL develops and integrates an advanced mode into the radar system. Program completed demonstration activities in FY14, and completed remaining closeout activities in FY15.

**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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0305206F / Airborne Reconnaissance Systems				676031 / Dismount Detection RADAR								
<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
DDR Development	C/CPIF	Raytheon : El Segundo, CA	-	16.822	Jan 2014	-		-		-		-	Continuing	Continuing	-	
<b>Subtotal</b>			-	16.822		-		-		-		-	-	-	-	
<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
MIT Lincoln Laboratories	SS/T&M	MIT L/L FFRDC : Lexington, MA	-	1.414	Jan 2014	-		-		-		-	Continuing	Continuing	-	
MITRE Corp FFRDC	C/T&M	MITRE Corp FFRDC : Lexington, MA	-	2.739	Oct 2013	-		-		-		-	Continuing	Continuing	-	
<b>Subtotal</b>			-	4.153		-		-		-		-	-	-	-	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
46th Test Wing, Eglin AFB	PO	46th Test Wing : Eglin AFB, FL	-	0.909	Jan 2014	-		-		-		-	Continuing	Continuing	-	
<b>Subtotal</b>			-	0.909		-		-		-		-	-	-	-	
<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
PMA (A&AS)	Various	Various : Various, MA	-	1.712	Jan 2014	-		-		-		-	Continuing	Continuing	-	

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 676031 / Dismount Detection RADAR
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<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA (MITRE FFRDC)	C/T&M	MITRE Corp FFRDC : Lexington, MA	-	-	Oct 2013	-		-		-		-	Continuing	Continuing	-
PMA (Gov't Travel/ Supplies & Equip)	Various	Various : Various, MA	-	0.096	Oct 2013	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	1.808		-		-		-		-	-	-	-

**Remarks**  
NOTE: Prior to FY 2013, Dismount Detection Radar (DDR) efforts were funded within Project 674818, Imaging and Targeting Support.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	-	23.692	-	-	-	-	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 676031 / Dismount Detection RADAR

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Sensor Design / Development	■																											
Radar System Integration & Test	■	■	■																									
System Flight Testing			■	■																								
Program Close-out Activities				■	■	■																						
Program Closure							■	■																				

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305206F / Airborne Reconnaissance Systems	<b>Project (Number/Name)</b> 676031 / Dismount Detection RADAR

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Sensor Design / Development	1	2014	1	2014
Radar System Integration & Test	1	2014	3	2014
System Flight Testing	3	2014	4	2014
Program Close-out Activities	4	2014	1	2015
Program Closure	2	2015	3	2015



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	13.491	13.516	13.245	-	13.245	14.184	14.366	14.462	14.720	Continuing	Continuing
674754: <i>RC-135 Systems</i>	-	13.491	13.516	13.245	-	13.245	14.184	14.366	14.462	14.720	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The RC-135 operational systems development and enhancement activities support the design studies, engineering analysis, non-recurring engineering, and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems, both air and ground. Extensive utilization of Commercial-Off-The-Shelf (COTS) based solutions allows rapid fielding of needed capabilities through continuous technology refresh cycles and Diminishing Manufacturing Sources (DMS)/Vanishing Vendor Items (VVI) logistics mitigation efforts. The results of these efforts provide for preliminary assessments of technical feasibility, operability, or military utility as well as specific engineering implementations for integration into the various systems baseline configurations.

These activities are managed by the Air Force through the 645th Aeronautical System Group (645 AESG). The SPO manages engineering, ground and support systems modifications, integration, flight testing, product assurance, acceptance testing, logistics, and training activities.

Aircraft, sensor systems, and associated ground support system engineering planned for FY 2016 include support for the RC-135V/W RIVET JOINT Baseline 12 and 13, the RC-135U COMBAT SENT Baseline 5, and the RC-135S COBRA BALL Baseline 5 configurations. The world-wide challenge of keeping pace against technologically agile targets used by both nation and non-nation-state adversaries and the rapid evolution of COTS technologies demands a responsive and adaptive acquisition strategy for fielding baseline capabilities that are logistically supportable at all locations. BIG SAFARI uses an incremental baseline strategy to mitigate risk, find affordable solutions and field needed capabilities on the aircraft and ground support and training systems. Obsolescence and DMS/VVI logistical concerns are addressed with each baseline upgrade strategy and annually as part of the fleet sustainment responsibilities.

RIVET JOINT Baseline 12 upgrades consist of, but are not limited to, increased digital signal exploitation, increased digital signal recorder bandwidth, enhanced spatial processing/exploitation, enhanced weather radar, digitally enhanced electronic flight instrument system (EFIS), AF-DCGS interoperability, operator work station 3-D map projection, enhanced operator reporting management tools, modernized communications security (COMSEC) protocols, and a new steerable beam antenna. RIVET JOINT Baseline 13 upgrades consist of, but are not limited to, providing a continuous recording capability, Super Wideband Compressive Receiver (SWCR) and Nyquist Folding Receiver (NYFR), global air traffic management (GATM) avionics upgrades (e.g. new autopilot), Mode 5 identify friendly or foe (IFF) system, and family of beyond-line-of-sight terminals (FAB-T) advanced extremely high frequency (AEHF) communications suite.

COMBAT SENT Baseline 5 upgrades consist of, but are not limited to, continued Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) and Required Navigational Performance (RNP) compliant cockpit avionics enhancements, active ranging and theater networked geo-location (TNG) capability, Proforma search and classification tools, cooling duct and lighting improvements, CORVUS related precision electronic intelligence (ELINT) SWCR enhancements, RJ Baseline 13 communications intelligence (COMINT), upgraded computer architecture, primary sensor measurement system (PRISMS), wideband global satellite (WGS)

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>
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communications enhanced integration, development of an airborne tracking system, and communications upgrade to include Multifunctional Information Distribution System Joint Tactical Radio System (MIDS-J).

COBRA BALL Baseline 5 upgrades consist of, but are not limited to, RJ Baseline 11 COMINT, Medium-Wave Infra-Red Acquisition (MIRA) sensor/processor upgrade, measurements and signature intelligence (MASINT) Collection System (MCS) optical upgrade, WGS communications enhanced integration, communications upgrades to include MIDS-J and an intercom system (FORCE), U-Band antenna, continued CNS/ATM and RNP compliant cockpit avionics enhancements and foreign instrumentation intelligence (FISINT) system refresh.

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

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 fielding in the current or subsequent fiscal year.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	13.491	13.516	13.767	-	13.767
Current President's Budget	13.491	13.516	13.245	-	13.245
Total Adjustments	-	-	-0.522	-	-0.522
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.522	-	-0.522

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Baseline Configuration Development	13.491	13.516	13.245
<b>Description:</b> Non-recurring engineering (NRE) for Baseline system developments and enhancements to improve mission capabilities of the RIVET JOINT Baselines 12 and 13 (BL-12 and BL-13), COMBAT SENT Baseline 5 (BL-5) and COBRA BALL Baseline 5 (BL-5)			
<b>FY 2014 Accomplishments:</b>			

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Supported design studies, engineering analysis, NRE and other efforts associated with the integration and modification of the RC-135 programs (RJ BL-12 and BL-13, CS BL-5, and CB BL-5) and their specialized mission systems for the collection of both air and ground signals.  <b>FY 2015 Plans:</b> Continue to support design studies, engineering analysis, NRE and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems for the collection of both air and ground signals.  <b>FY 2016 Plans:</b> Will continue to support design studies, engineering analysis, NRE and other efforts associated with the integration and modification of the RC-135 programs and their specialized mission systems for the collection of both air and ground signals.			
<b>Accomplishments/Planned Programs Subtotals</b>	13.491	13.516	13.245

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF: BA05: DARP01: <i>Modification of Inservice Aircraft</i>	174.513	152.746	156.165	-	156.165	199.323	202.851	186.275	189.628	Continuing	Continuing
• APAF: BA06: DARP01: <i>Aircraft Spares and Repair Parts</i>	28.280	57.119	54.106	-	54.106	48.632	49.407	50.331	51.237	Continuing	Continuing
• OPAF: BA04: 846070: <i>Defense Airborne Recce Projects (DARP) RC-135</i>	20.577	24.710	25.237	-	25.237	25.700	26.153	26.620	27.099	Continuing	Continuing
• RDT&E: BA07: PE 0304260F: <i>RC-135 Airborne SIGINT Enterprise Development</i>	29.331	15.007	28.025	-	28.025	34.436	46.972	51.864	58.852	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

The RC-135 RIVET JOINT, COBRA BALL, and COMBAT SENT configured aircraft are maintained and kept technologically relevant through a baseline or incremental upgrade acquisition strategy. Technology refresh and quick reaction capability (QRC) developments are acquired through the 645th AESG in accordance with the BIG SAFARI Program Management Directive (PMD) and Class Justification and Approval (J&A) document for acquisition of supplies and services using an "other than full and open competition" criteria. The supplies and services procured by 645 AESG satisfy National Security requirements (FAR 6.302-6) through the use of their standing J&A or address Unusual and Compelling Urgency requirements (FAR 6.302-2) through an individually prepared J&A supported by the BIG SAFARI Life Cycle

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>
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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 (COCOM) and/or Intelligence Community (IC) 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>	<b>Project (Number/Name)</b> 674754 / <i>RC-135 Systems</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aircraft Modifications	SS/ Various	L-3 Com : Greenville, TX	-	13.491	Dec 2013	13.516	Dec 2014	13.245	Dec 2015	-		13.245	Continuing	Continuing	TBD
<b>Subtotal</b>			-	13.491		13.516		13.245		-		13.245	-	-	-

**Remarks**  
All activity is based around the Programmed Depot Maintenance (PDM) airframe and missions systems schedule which includes multiple contracts and organizations with overlapping and continuous periods of performance. 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 COCOM and/or IC requirements.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	13.491	13.516	13.245	-	13.245	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>			<b>Project (Number/Name)</b> 674754 / <i>RC-135 Systems</i>				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

**Remarks**  
 RC-135 Program Manager has determined that PMA will be funded with RIVET JOINT APAF appropriation and included in the P-Doc, Mod 4263.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force	<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>
<b>Project (Number/Name)</b> 674754 / RC-135 Systems	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
RIVET JOINT Baseline 10 Fielding	█																											
RIVET JOINT Baseline 11 Integration, Test and Fielding	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
RIVET JOINT Baseline 12 Development, Integration, Test and Fielding	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
RIVET JOINT Baseline 13 Development, Integration, Test and Fielding									█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
COMBAT SENT Baseline 5 Development, Integration, Test and Fielding	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
COMBAT SENT Baseline 6 Development, Integration and Test																	█	█	█	█	█	█	█	█	█	█	█	█
COBRA BALL Baseline 4 Fielding	█	█	█	█																								
COBRA BALL Baseline 5 Development, Integration, Test and Fielding	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
COBRA BALL Baseline 6 Development, Integration and Test																	█	█	█	█	█	█	█	█	█	█	█	█
Ground Systems Baseline 11 Integration and Test	█	█	█	█																								
Ground Systems Baseline 12 Integration and Test													█	█	█	█												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305207F / <i>Manned Reconnaissance Systems</i>	<b>Project (Number/Name)</b> 674754 / <i>RC-135 Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
RIVET JOINT Baseline 10 Fielding	1	2014	1	2014
RIVET JOINT Baseline 11 Integration, Test and Fielding	1	2014	1	2017
RIVET JOINT Baseline 12 Development, Integration, Test and Fielding	1	2014	1	2020
RIVET JOINT Baseline 13 Development, Integration, Test and Fielding	3	2016	4	2020
COMBAT SENT Baseline 5 Development, Integration, Test and Fielding	1	2014	1	2018
COMBAT SENT Baseline 6 Development, Integration and Test	2	2018	4	2020
COBRA BALL Baseline 4 Fielding	1	2014	2	2014
COBRA BALL Baseline 5 Development, Integration, Test and Fielding	1	2014	3	2019
COBRA BALL Baseline 6 Development, Integration and Test	3	2018	4	2020
Ground Systems Baseline 11 Integration and Test	1	2014	2	2014
Ground Systems Baseline 12 Integration and Test	2	2017	3	2017



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	6.321	26.994	22.784	-	22.784	21.687	26.677	22.357	22.757	Continuing	Continuing
674826: <i>Common Imagery Ground / Surface Systems</i>	-	6.294	19.483	22.784	-	22.784	21.687	26.677	22.357	22.757	Continuing	Continuing
676025: <i>Data Compression</i>	-	0.027	7.511	-	-	-	-	-	-	-	Continuing	Continuing

**Note**

In FY 2016, PE 0305208F, Project 676025, Data Compression, will be transferred to PE 0305206F, the Airborne Reconnaissance System Program to better align the program with like RDT&E efforts.

The FY2016 funding request was reduced by \$1.918 million to account for the availability of prior execution balances.

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

AF Distributed Common Ground Systems (DCGS) is a network-centric weapon system capable of tasking Intelligence, Surveillance and Reconnaissance (ISR) sensors and receiving, and providing the Processing, Exploitation, and Dissemination (PED) capability for data, information and intelligence from airborne, national, and commercial platforms and sensors. The weapon system consists of numerous active duty, Air National Guard, and mission partner sites interconnected by a robust communications infrastructure that allows collaborative reach-back operations. Operators correlate collected Geospatial Intelligence (GEOINT), Signals Intelligence (SIGINT), and Measurement and Signature Intelligence (MASINT) data to provide decision-quality information to the Joint Task Force (JTF) and below, including significant support to time-critical targeting. AF DCGS is the primary PED capability for the U-2, Global Hawk, Predator, Reaper and Project Liberty (through 2015).

AF DCGS is modernizing through sustainment by integrating the necessary technologies and tools to provide increased capabilities and meet emerging and urgent operational needs. These efforts will also integrate commercial and government furnished equipment upgrades to provide current technologies and achieve necessary application services. The next series of upgrades will meet the operational need to integrate new and/or improved sensor capabilities. They will also enhance interoperability by migrating to a Service Oriented Architecture (SOA) and improving data sharing ability per DoD direction.

The DCGS Data Compression effort provides the warfighter a capability to efficiently compress and decompress airborne ISR sensor data and transmit near real-time to tactical users through current and future bandwidth limited commercial satellite communications (SATCOM) or military SATCOM. The effort will develop, test and implement new sensor data compression and decompression algorithms for current and emerging airborne ISR sensors. Additionally, the program develops compression and decompression capabilities for manned and unmanned airborne platforms, associated ground stations, and DCGS. Outputs will meet standard certification for use within the DoD GEOINT and MASINT architectures.

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

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>
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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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	6.321	27.265	24.702	-	24.702
Current President's Budget	6.321	26.994	22.784	-	22.784
Total Adjustments	-	-0.271	-1.918	-	-1.918
• Congressional General Reductions	-	-0.271			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-1.918	-	-1.918

**Change Summary Explanation**

The FY2016 funding request was reduced by \$1.918 million to account for the availability of prior execution balances.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>				<b>Project (Number/Name)</b> 674826 / <i>Common Imagery Ground / Surface Systems</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
674826: <i>Common Imagery Ground / Surface Systems</i>	-	6.294	19.483	22.784	-	22.784	21.687	26.677	22.357	22.757	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

AF Distributed Common Ground Systems (DCGS) is a network-centric weapon system capable of tasking Intelligence, Surveillance and Reconnaissance (ISR) sensors and receiving and providing the Processing, Exploitation, and Dissemination (PED) capability for data, information and intelligence from airborne, national, and commercial platforms and sensors. The weapon system consists of numerous active duty, Air National Guard, and mission partner sites interconnected by a robust communications infrastructure that allows collaborative reach-back operations. Operators correlate collected Geospatial Intelligence (GEOINT), Signals Intelligence (SIGINT), and Measurement and Signature Intelligence (MASINT) data to provide decision-quality information to the Joint Task Force (JTF) and below, including significant support to time-critical targeting. AF DCGS is the primary PED capability for the U-2, Global Hawk, Predator, Reaper and Project Liberty (through 2015).

AF DCGS is modernizing through sustainment by integrating the necessary technologies and tools to provide increased capabilities and meet emerging and urgent operational needs. These efforts will also integrate commercial and government furnished equipment upgrades to provide current technologies and achieve necessary application services. The next series of upgrades will meet the operational need to integrate new and/or improved sensor capabilities. They will also enhance interoperability by migrating to a Service Oriented Architecture (SOA) and improving data sharing ability per DoD direction.

Program actions are categorized by four distinct efforts. The GEOINT effort provides the capability for Planning, Collecting, Processing, Analysis and Dissemination (PCPAD) of imagery intelligence. The Systems Release effort provides this capability for SIGINT. The Data Links effort provides Line-of-Site (LOS) and Satellite Communications (SATCOM) capabilities that allow AF DCGS to send and receive information between airborne Intelligence, Surveillance, and Reconnaissance (ISR) assets and the AF DCGS weapon system. The Network Communications effort involves modernizing AF DCGS infrastructure to improve data ingest, transfer, and storage capabilities while migrating the network toward a cloud architecture.

AF DCGS also participates in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Geospatial Intelligence (GEOINT)	-	2.000	3.340
<b>Description:</b> Integrate new and improved sensors for exploitation and analysis of imagery and geospatial information.			
<b>FY 2014 Accomplishments:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 674826 / <i>Common Imagery Ground / Surface Systems</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Continued efforts to meet operational need to integrate new and improved sensors, increase capacity and imagery and geospatial data availability, and comply with DoD direction to improve interoperability through migration to a Service Oriented Architecture (SOA) construct.  <b>FY 2015 Plans:</b> Continuing efforts to meet operational need to integrate new and improved sensors, increase capacity and imagery and geospatial data availability, virtualize sensor processing and comply with DoD direction to improve interoperability through migration to a Service Oriented Architecture (SOA) construct. This includes integrating upgraded versions of electro-optical and synthetic aperture radar sensors.  <b>FY 2016 Plans:</b> Will continue efforts to meet operational need to integrate new and improved sensors, increase capacity and imagery and geospatial data availability, and comply with DoD direction to improve interoperability through migration to a Service Oriented Architecture (SOA) construct. This will include integrating upgraded versions of electro-optical and synthetic aperture radar sensors.				
<b>Title:</b> Systems Release (SR)  <b>Description:</b> Continue efforts to meet operational need to integrate new and improved sensors, increase capacity and signals intelligence data availability, and comply with DoD direction to improve interoperability through migration to a Service Oriented Architecture (SOA) construct.  <b>FY 2014 Accomplishments:</b> Continued efforts to meet operational need to integrate new and improved sensors, increase capacity and signals intelligence data availability, and comply with DoD direction to improve interoperability through migration to a Service Oriented Architecture (SOA) construct.  <b>FY 2015 Plans:</b> Continuing efforts to meet operational need to integrate new and improved sensors, increase capacity and signals intelligence data availability, and comply with DoD direction to improve interoperability through migration to a Service Oriented Architecture (SOA) construct. A major effort will involve beginning to virtualize the SIGINT capability throughout the weapon system.  <b>FY 2016 Plans:</b> Will continue efforts to meet operational need to integrate new and improved sensors, increase capacity and signals intelligence data availability, and comply with DoD direction to improve interoperability through migration to a Service Oriented Architecture (SOA) construct.		-	1.000	13.744
<b>Title:</b> Data Links		0.700	1.000	2.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 674826 / <i>Common Imagery Ground / Surface Systems</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> Upgrade the AF DCGS capability to transmit and receive information via data link architecture.</p> <p><b>FY 2014 Accomplishments:</b> Continued upgrading AF DCGS capability to transmit and receive information via data link architecture. This included integrating improved SATCOM terminals.</p> <p><b>FY 2015 Plans:</b> Continuing to upgrade AF DCGS capability to transmit and receive information via data link architecture. This will include integrating improved SATCOM terminals.</p> <p><b>FY 2016 Plans:</b> Will continue upgrading AF DCGS capability to transmit and receive information via data link architecture. This will include integrating improved SATCOM terminals.</p>			
<p><b>Title:</b> Network Communications (NETCOMMS)</p> <p><b>Description:</b> Upgrade and evolve the AF DCGS communications network across the various architectures.</p> <p><b>FY 2014 Accomplishments:</b> Continued to upgrade and evolve the AF DCGS communications network across the various architectures.</p> <p><b>FY 2015 Plans:</b> Continuing to upgrade and evolve the AF DCGS communications network across the various architectures establishing capabilities for remote hardware and software management. This will include initial effort to modernize the wide area network and extend the high speed data transport capability.</p> <p><b>FY 2016 Plans:</b> Will Continue to upgrade and evolve the AF DCGS communications network across the various architectures establishing capabilities for remote hardware and software management. This will include continuing efforts to modernize the wide area network and extend the high speed data transport capability.</p>	5.594	15.483	3.700
<b>Accomplishments/Planned Programs Subtotals</b>	6.294	19.483	22.784

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPAF: BA07: Line Item #: 846080: DCGS-AF	97.149	181.556	157.402	-	157.402	140.488	142.839	134.024	129.234	Continuing	Continuing

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 674826 / <i>Common Imagery Ground / Surface Systems</i>

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**

**D. Acquisition Strategy**

The Air Force has changed the AF DCGS acquisition strategy from a single block upgrade to programs that will deliver the following families of capabilities to the fielded baseline while meeting emerging operational requirements and continuing to develop and integrate new/upgraded sensors: GEOINT, Systems Release Upgrades, Data Links, and NetComms.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 674826 / <i>Common Imagery Ground / Surface Systems</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Geospatial Intelligence (GEOINT) Upgrades	C/Variou	Various : Various,	-	-		-		1.840	Feb 2016	-		1.840	-	1.840	-
System Release Upgrades	C/Variou	Various : Various,	-	-		-		13.744	Mar 2016	-		13.744	-	13.744	-
Datalink Upgrades	C/Variou	Various : Various,	-	0.700	Jan 2015	0.700	May 2015	-		-		-	-	1.400	-
Network Communications Upgrade	C/Variou	Various : Various,	-	3.022	Jan 2015	15.283	Jan 2015	3.700		-		3.700	-	22.005	-
<b>Subtotal</b>			-	3.722		15.983		19.284		-		19.284	-	38.989	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA	Variou	Various : Various,	-	2.572	Sep 2014	3.500	Sep 2015	3.500	Sep 2016	-		3.500	Continuing	Continuing	TBD
<b>Subtotal</b>			-	2.572		3.500		3.500		-		3.500	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	6.294	19.483	22.784	-	22.784	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>							<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>			<b>Project (Number/Name)</b> 674826 / <i>Common Imagery Ground / Surface Systems</i>				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

**Remarks**



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 674826 / <i>Common Imagery Ground / Surface Systems</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

Geospatial Intelligence (GEOINT) Upgrades	[Redacted]																											
Systems Release Upgrades	[Redacted]																											
Datalink Upgrades	[Redacted]																											
Network Communications upgrades	[Redacted]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 674826 / <i>Common Imagery Ground / Surface Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Geospatial Intelligence (GEOINT) Upgrades	1	2014	4	2020
Systems Release Upgrades	1	2014	4	2020
Datalink Upgrades	1	2014	4	2020
Network Communications upgrades	1	2014	4	2020

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 676025 / <i>Data Compression</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
676025: <i>Data Compression</i>	-	0.027	7.511	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2016, PE 0305208F, Project 676025, Data Compression, will be transferred to PE 0305206F, the Airborne Reconnaissance System Program to better align the program with like RDT&E efforts.

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

This initiative will provide the warfighter a capability to efficiently compress and decompress airborne ISR sensor data and transmit near real-time to tactical users through current and future bandwidth limited commercial SATCOM or military SATCOM. The effort will develop, test and implement new sensor data compression and decompression algorithms for current and emerging airborne ISR sensors. Additionally, the program develops compression and decompression for manned and unmanned airborne platforms, associated ground stations, data storage and the DCGS. The effort includes life-cycle sustainment of airborne hardware & software including updates and integration support. Algorithms will be suitable for service-wide use within the DoD GEOINT and MASINT architectures as part of ISR enterprise standards.

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> Data Compression	0.027	7.511	-
<b>Description:</b> The program began developing and testing compression and decompression algorithms for airborne ISR sensor data. The program will eventually build, integrate and test sensor specific hardware (with the algorithms embedded) for onboard data compression. The effort initially focused on compression and decompression of complex and detected Synthetic Aperture Radar (SAR) data followed by applications of compression technologies to other DoD IMINT/MASINT sensor data (Spectral, Electro-Optical/Infrared (EO/IR), Light Detection and Ranging (LIDAR), Phase History SAR) and ground architecture. Algorithms will be suitable for service-wide use as part of ISR enterprise standards.			
<b>FY 2014 Accomplishments:</b> Continued second phase development and evaluation of complex/detected SAR, spectral, LIDAR, & Persistent EO/IR sensor data compression capabilities at a reduced level of effort.			
<b>FY 2015 Plans:</b> Increase development and testing of complex/detected SAR, spectral (HSI/MSI), LIDAR, Persistent EO/IR data compression capabilities, and other phenomenologies. Will begin developing and testing compression and decompression algorithms for Phase History SAR. Will also begin technology demonstration effort and cooperative platform integration.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.027	7.511	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	Project (Number/Name) 676025 / <i>Data Compression</i>

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

N/A

**Remarks**

**D. Acquisition Strategy**

The Data Compression acquisition approach is to design and develop compression and decompression technology hardware and software components, interfaces and standards for various airborne ISR platforms, ground stations, data storage facilities, and exploitation tools utilizing existing contracts with full and open competition where appropriate. Integration will be accomplished by the requisite program offices with data compression specific integration support provided.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 676025 / <i>Data Compression</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technology Development-Phase History	C/CPAF	TBD : TBD,	-	-		2.300		-		-		-	-	2.300	-
Technolgy Development	C/CPAF	TBD : TBD,	-	-		3.721		-		-		-	-	3.721	-
<b>Subtotal</b>			-	-		6.021		-		-		-	-	6.021	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost				
Technology Development-AFRL Support	C/Variou	Various : Various,	-	-		0.500	Jun 2015	-		-		-	-	Continuing	Continuing	-
Technology Development-Other Support	C/Variou	Various : Various,	-	-		0.300	Feb 2015	-		-		-	-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		0.800		-		-		-	-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Office Support	Various	Govt/Contractors : TBD,	-	0.027	Oct 2013	0.690	Oct 2014	-		-		-	-	0.717	-
<b>Subtotal</b>			-	0.027		0.690		-		-		-	-	0.717	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>				<b>Project (Number/Name)</b> 676025 / <i>Data Compression</i>				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>			
<b>Project Cost Totals</b>	-	0.027	7.511	-	-	-	-	-	-			

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 676025 / <i>Data Compression</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Phase History SAR Phase 1																												
SAR Phase 2 Compression																												
HSI Phase 2 Compression																												
SAR Phase 2 Compression Demonstration																												
HSI Phase 2 Compression Demonstration																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305208F / <i>Distributed Common Ground/Surface Systems</i>	<b>Project (Number/Name)</b> 676025 / <i>Data Compression</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Phase History SAR Phase 1	3	2015	3	2016
SAR Phase 2 Compression	1	2014	3	2015
HSI Phase 2 Compression	2	2014	4	2015
SAR Phase 2 Compression Demonstration	3	2015	3	2016
HSI Phase 2 Compression Demonstration	4	2015	4	2016



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305219F / MQ-1 Predator A UAV
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	0.760	-	0.716	-	0.716	-	-	-	-	-	1.476
675143: <i>Predator</i>	-	0.760	-	0.716	-	0.716	-	-	-	-	-	1.476
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

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

The basic MQ-1 system consists of the aircraft, a control station, communications equipment, support equipment, simulator and training devices, Readiness Spares Packages (RSP), technical data/training, and personnel required to operate, maintain, and sustain the system. This funding supports development and enhancements to the Predator weapon system to include: aircraft and Ground Control Stations (GCS) and associated software, sensors, communication equipment, training systems and support elements. 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-1 aircraft is a single-engine, propeller-driven, remotely piloted aircraft (formerly called Unmanned Aircraft Vehicle, UAV) designed to operate over-the-horizon for long endurance sorties. The aircraft is designed to provide real-time Intelligence, Surveillance, Reconnaissance, and Target Acquisition (ISR TA), and attack capability to aggressively prosecute Time Sensitive Targets (TSTs). The aircraft is configured to carry Hellfire laser-guided missiles. The MQ-1 operates primarily at medium altitudes, integrating with joint aerospace, ground, and maritime forces as well as coalition and Allied forces, to execute combatant commander (COCOM) priority missions. The aircraft carries a Multi-spectral Targeting System (MTS) (a sensor turret that incorporates Electro-Optical (EO), Infra-Red (IR), laser designator, and IR illuminator) capable of transmitting real-time Full Motion Video (FMV) imagery throughout the operational theater.

The GCS, common with the MQ-9 Reaper, functions as the aircraft cockpit and can control the aircraft either within Line-of-Sight (LOS) or Beyond LOS (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; provide a means for manual control; allow control of multiple aircraft and payloads; allow personnel to launch, recover, and monitor aircraft, payloads, and system communications status; secure data links to receive payload sensor data and command links; monitor threats to the aircraft; display a common operational picture; and provide support functions. Additionally, GCS allows for servicing, systems checks, maintaining, launching, and recovering aircraft under LOS control for hand-off to a mobile or fixed facility GCS.

This program will address interoperability among developed systems through common standards and tools. It will continue to address reliability and maintainability, safety of flight, and warfighter needs as they arise.

The FY2016 funding request was reduced by \$0.198 million to account for the availability of prior execution balances.

In FY2016 0305219F Predator will be completed.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305219F / MQ-1 Predator A UAV
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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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	0.760	1.378	0.919	-	0.919
Current President's Budget	0.760	-	0.716	-	0.716
Total Adjustments	-	-1.378	-0.203	-	-0.203
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.378			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.203	-	-0.203

**Change Summary Explanation**

Reduction of \$1.378 million in FY15 due to FY15 Appropriation Act with comment, "Improving Funds Management: Air Force Divesting MQ-1 Fleet."  
The FY2016 funding request was reduced by \$0.198 million to account for the availability of prior execution balances.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> OGC	0.233	-	0.172	-	0.172
<b>Description:</b> Other Government Costs (OGC)					
<b>FY 2014 Accomplishments:</b> Continued OGC					
<b>FY 2015 Plans:</b> N/A					
<b>FY 2016 Base Plans:</b> Will continue OGC					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Title:</b> ST&E	0.060	-	-	-	-

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force				<b>Date:</b> February 2015	
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305219F / MQ-1 Predator A UAV			
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>					
	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Description:</b> Systems Test & Evaluation (ST&E)					
<b>FY 2014 Accomplishments:</b> Continued ST&E					
<b>FY 2015 Plans:</b> N/A					
<b>FY 2016 Base Plans:</b> N/A					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Title:</b> PMATS					
<b>Description:</b> Predator Mission Aircrew Training System (PMATS)					
<b>FY 2014 Accomplishments:</b> Completed PMATS development to keep the training system current with other MQ-1 CCI development activities					
<b>FY 2015 Plans:</b> N/A					
<b>FY 2016 Base Plans:</b> N/A					
<b>FY 2016 OCO Plans:</b> N/A					
	0.197	-	-	-	-
<b>Title:</b> CCI					
<b>Description:</b> Critical Capabilities Integration (CCI) is an overarching MQ-1 modernization activity that will integrate Hellfire R Software and Airborne Cueing and Exploitation System Hyperspectral Sensor (ACES HY).					
<b>FY 2014 Accomplishments:</b> Continued CCI Hellfire R activities					
<b>FY 2015 Plans:</b>					
	0.270	-	0.544	-	0.544

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305219F / MQ-1 Predator A UAV
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
<b>FY 2016 Base Plans:</b> Will complete CCI efforts, including integrating latest version of Hellfire (Hellfire R) software and Airborne Cueing and Exploitation System Hyperspectral Sensor (ACES HY)					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	0.760	-	0.716	-	0.716

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # PRDT01: MQ-1 MODS	6.526	4.755	3.173	-	3.173	-	-	-	-	-	43.689
• APAF: BA06: Line Item # PRDT01: INITIAL SPARES	1.420	1.821	1.469	-	1.469	0.957	0.058	-	-	-	10.932

**Remarks**

**E. Acquisition Strategy**  
 The MQ-1 Predator system will be acquired via sole-source acquisition strategies with General Atomics-ASI and Raytheon as the 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305219F / MQ-1 Predator A UAV	<b>Project (Number/Name)</b> 675143 / Predator
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMATS	Various	L3 Comm : Binghamton, NY	-	0.188	Feb 2014	-		-		-		-	-	0.188	30.273
CCI	SS/CPIF	General Atomics - ASI : Poway, CA	-	0.252	Sep 2014	-		0.544	Jan 2016	-		0.544	-	0.796	19.446
Prior Year Completed Projects	Various	Not specified. ; ,	-	-		-		-		-		-	-	-	288.238
<b>Subtotal</b>			-	0.440		-		0.544		-		0.544	-	0.984	337.957

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Support	Various	Various : Various,	-	0.060	Aug 2014	-		-		-		-	-	0.060	9.696
<b>Subtotal</b>			-	0.060		-		-		-		-	-	0.060	9.696

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Other Government Costs and PMA	Various	Various : Various,	-	0.260	Dec 2013	-		0.172	Dec 2015	-		0.172	-	0.432	6.320
<b>Subtotal</b>			-	0.260		-		0.172		-		0.172	-	0.432	6.320



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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305219F / MQ-1 Predator A UAV	<b>Project (Number/Name)</b> 675143 / Predator
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

OGC, Urgent Services	
ST&E	
Predator Mission Aircrew Training System (PMATS)	
Critical Capabilities Integration (CCI)	

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305219F / MQ-1 Predator A UAV	<b>Project (Number/Name)</b> 675143 / Predator
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
OGC, Urgent Services	1	2014	4	2016
ST&E	1	2014	2	2016
Predator Mission Aircrew Training System (PMATS)	1	2014	4	2014
Critical Capabilities Integration (CCI)	1	2014	2	2016



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV
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COST (\$ in Millions)	Prior Years <sup>(+)</sup>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	2,400.088	120.180	241.828	208.053	-	208.053	289.497	267.500	284.605	289.697	280.300	4,381.748
675145: RQ-4 Block 30	19.932	10.000	206.437	153.687	-	153.687	219.726	128.608	116.246	118.326	162.348	1,135.310
675146: RQ-4 Block 40	99.855	56.600	12.636	6.814	-	6.814	8.979	14.299	15.148	15.419	19.533	249.283
675147: RQ-4 Grnd Segment/ Comm System	31.606	22.309	-	31.460	-	31.460	53.129	112.791	141.400	143.930	86.419	623.044
675148: Common-Airborne Sense & Avoid (C-ABSAA)	19.036	17.098	11.829	-	-	-	-	-	-	-	-	47.963
67RTIP: MP-RTIP	198.282	14.173	10.926	16.092	-	16.092	7.663	11.802	11.811	12.022	12.000	294.771

**MDAP/MAIS Code:** 252  
**Other MDAP/MAIS Code(s):** 293

<sup>(+)</sup> The sum of all Prior Years is \$2031.377 million less than the represented total due to several projects ending

**Note**

In FY 2016, PE 0305220F, RQ-4, Project 675148, Common-Airborne Sense & Avoid (C-ABSAA), transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148. This transfer will provide greater visibility into this capability and prepares for expanded applications by making the capability program and platform agnostic.

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

This program element funds four (4) related Air Force projects sharing the RQ-4 platform in common: the RQ-4 Block 30 project, the RQ-4 Block 40 project, the RQ-4 Ground Segment/Communications System project, and MP-RTIP project in FY16 and forward.

Global Hawk:

The RQ-4 Remotely Piloted Aircraft (RPA) provides a high altitude, deep look, long-endurance Intelligence, Surveillance, and Reconnaissance (ISR) capability that complements space and other airborne collectors during peacetime, crisis, and war-fighting scenarios. This funding supports the development of RQ-4 aircraft, payloads, ground and support segments. The Block 20/30/40 RQ-4B RPA is the successor to the Block 10 RQ-4A, and is designed to employ 3,000 pounds of payload and enable Multi-Intelligence (multi-INT) collecting.

Block 30 (Project Number 675145) employs upgraded Synthetic Aperture Radar (SAR) and Electro-Optical/Infrared (EO/IR) sensors known as the Enhanced Integrated Sensor Suite (EISS), and the Airborne Signals Intelligence Payload (ASIP) sensor. Activities include mission planning development and testing, enhanced weather

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	
<p>capability development and testing, airspace and interoperability enhancements and updates, airframe upgrades, sensor upgrades, risk reduction and integration, ice protection system development and testing, and resolution of issues with Diminishing Manufacturing Sources (DMS).</p> <p>The Block 40 (Project Number 675146) employs the MP-RTIP radar sensor. In FY15 and beyond, this includes the Block 40 costs for the development of enhanced weather capability development and testing, maritime mode utilization, mission planning development and testing, airspace integration activities including Mode 5 Automatic Dependent Surveillance-Broadcast (ADS-B), ice protection system development and testing, airframe and sensor enhancements to the Block 40 fleet.</p> <p>The Ground Segment Modernization (GSM)/Communication System Modernization (CSM) Project Number 675147 includes the GSM project, CSM project and the Next Generation Communication System. The ground segment currently includes the Mission Control Element (MCE), the Launch and Recovery Element (LRE), and the networking resources required to simultaneously disseminate intelligence while remaining compliant with Department of Defense (DoD) cybersecurity network requirements to operate on the Global Information Grid. As a result of the reinstatement of the Block 30s in the FY15 PB, the requirement for ground stations operations significantly increased which increased the need for efforts to address DMS issues. The GSM project will initiate in FY16 in support of a 20 year operational lifecycle, and will comprise an approach that combines the functionality of legacy MCEs and LREs into a single building-based configuration. The CSM project will provide enhancements across the RQ-4 communication network.</p> <p>When judged feasible and affordable, this program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Studies and activities may be initiated to further explore the utility of incorporating the emerging architectural standards such as the USAF Unmanned Aerial System (UAS) Command and Control Initiative (UCI) or the DoD's Unmanned Control Segment standards (UCS). GSM and CSM will incorporate UCI and UCS standards.</p> <p>The RQ-4 program will maintain and upgrade interoperability for Blocks 20/30/40 with system of systems partners and continue to incorporate applicable synergies with other platforms such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation &amp; Dissemination (PED) elements. The networking capability for intelligence dissemination is required to provide the data transport interface between the Weapons System, Operations Centers, and external Intelligence Community customers.</p> <p>C-ABSAA: C-ABSAA is an analysis and developmental effort in the pre-Material Development Decision phase of the acquisition lifecycle which supports emerging warfighter requirements to fully integrate Group 4-5 RPA into the National Airspace System (NAS), international airspace, other nations' sovereign airspace, and operational combat airspace to conduct the entire range of military operations across all mission environments. C-ABSAA also supports the "Worldwide Operations" Key Performance Parameter (KPP) in larger RPA requirement documents, and Public Law 112-239 directing DoD collaboration with the Federal Aviation Administration (FAA) and the National Air and Space Administration (NASA) to safely integrate RPA in the NAS. Funding in this project supports the development of a Sense and Avoid (SAA) capability set for Group 4-5 RPA and covers analysis, research, and developmental activities as well as infrastructure and other government costs. Activities included support to the development of warfighter requirements and analysis of possible solution alternatives, the collaboration with the FAA, NASA, and Office of the Secretary of Defense (OSD) to develop national policy and standards, and SAA related studies, analysis, modeling and simulation, program planning and project execution. RPA platform specific integration and testing is not included.</p>		

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	
<p>In FY16, Project 675148, C-ABSAA, transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148, C-ABSAA, in order to provide greater visibility into this capability and prepare for expanded applications.</p> <p>MP-RTIP: The MP-RTIP sensor was designed as a family of modular, scalable sensors to provide next generation capabilities to support sustainable network centric operations with integrated Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) capability. MP-RTIP provides the RQ-4 Block 40 aircraft with advanced Synthetic Aperture Radar (SAR) and Moving Target Indicator (MTI) sensor capabilities.</p> <p>This project (67RTIP) includes all MP-RTIP design, development, test, and integration efforts for the RQ-4 Block 40 platform. Integration activities include platform integration of the MP-RTIP sensor and sustainment logistics planning support. MP-RTIP studies and development insertion include the implementation of Maritime Modes (MM), High Range Resolution (HRR) modes, electronic protection, technical refresh, product improvements and other advanced capabilities.</p> <p>Activities also include studies and analysis supporting current and future program planning and future modes development based on user requirements.</p> <p>Per direction of USD(AT&amp;L), the RQ-4 program was restructured from the original project 675144 (Baseline) into multiple projects: (1) Block 30, (2) Block 40, (3) GroundSegment/Communications System, and (4) C-ABSAA. Prior year funds in the amount of \$2031.377M were accounted for in project 675144.</p> <p>In FY 2016 and beyond, the RQ-4 Block 30 project 675145 includes budget necessary for systems engineering/program management, test and evaluation, management services and fielding support for projects 675145, 675146 (Block 40) and 675147 (Ground Segment/Comm System). This reflects contracting/acquisition strategy for these common elements within the Global Hawk program. Projects 675148 (C-ABSAA) and 67RTIP (Multi-Platform Radar Technology Insertion Program (MP-RTIP)) reflect separate costs as they are separately managed/supported programs.</p> <p>The Cost to Complete and Total Cost for Major Defense Acquisition Program (MDAP) projects in this program element are documented in the R3. Total Cost on the R2 is not reflective of the total cost for MDAP projects since the R2 does not account for prior years funding for in project 675144.</p> <p>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.</p>		

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	120.180	244.514	369.014	-	369.014
Current President's Budget	120.180	241.828	208.053	-	208.053
Total Adjustments	-	-2.686	-160.961	-	-160.961
• Congressional General Reductions	-	-2.686			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-160.961	-	-160.961

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

**Project:** 675145: *RQ-4 Block 30*

Congressional Add: *Study for Adaptation of U-2 Sensors for RQ-4 Block 30*

Congressional Add Subtotals for Project: 675145

Congressional Add Totals for all Projects

	<b>FY 2014</b>	<b>FY 2015</b>
	10.000	-
	10.000	-
	10.000	-

**Change Summary Explanation**

FY16 (-)\$52.9M decrease: Rephasing of Common-Airborne Sense & Avoid (C-ABSAA) to PE 0305206F

FY16 (-)\$108.1M decrease: Rephasing of Global Hawk program to improve execution

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675145 / RQ-4 Block 30			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675145: RQ-4 Block 30	19.932	10.000	206.437	153.687	-	153.687	219.726	128.608	116.246	118.326	162.348	1,135.310
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The RQ-4 Remotely Piloted Aircraft (RPA) provides a high altitude, deep look, long-endurance Intelligence, Surveillance, and Reconnaissance (ISR) capability that complements space and other airborne collectors during peacetime, crisis, and war-fighting scenarios. RDT&E funding in this project supports design, development, integration, and testing of capabilities needed to meet validated requirements for Block 30 aircraft, including continuing aircraft system modernization for Enhanced Integrated Sensor Suite (EISS) sensors and the Airborne Signals Intelligence Payload (ASIP).

This funding also supports aircraft systems modernization to include continuing aircraft operations surety, cybersecurity, information assurance, and mission critical repair of Government Furnished Equipment (GFE).

In FY15 and beyond, this RQ-4 Block 30 project 675145 includes budget necessary for enterprise management, test and evaluation, software integration, and fielding support for projects 675145, 675146 (Block 40) and 675147 (Ground Segment/Comm System) as well as program protection projects, studies and analysis supporting future system enhancements. This reflects the contracting/acquisition strategy for these common elements within the RQ-4 program.

The RQ-4 program will maintain capability and interoperability for Block 30 including efforts with system of systems partners and continue to incorporate applicable synergies with other platforms, such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation & Dissemination (PED) elements.

Activities include mission planning development and testing, completion of Synthetic Aperture Radar - Complex Imagery development testing, next gen sensor study, enhanced weather capability development and testing, airspace and interoperability enhancements and updates, airframe and software upgrades and deficiency report resolution across RQ-4 fleet, sensor interoperability enhancements and upgrades, upgrades to ASIP SIGINT sensor, Mode 5/ADS-B development and testing, development and testing activities associated with enhancing sensor capability and sensor integration, development and testing of ice protection system, program protection projects, and studies and analysis supporting future system enhancements.

The RQ-4 program will maintain and upgrade interoperability for Blocks 20/30/40 with system of systems partners and continue to incorporate applicable synergies with other platforms such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation & Dissemination (PED) elements. The networking capability for intelligence dissemination is required to provide the data transport interface between the Weapons System, Operations Centers, and external Intelligence Community customers.

When judged feasible and affordable, this program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Likewise, studies and activities may be initiated to further explore the utility of incorporating the emerging architectural standards such as the USAF Unmanned Aerial System (UAS) Command and Control Initiative (UCI) or the DoD's Unmanned Control Segment standards (UCS).

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675145 / RQ-4 Block 30

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p><b>Title:</b> RQ-4 Block 30 System Development and Demonstration (SDD)</p> <p><b>Description:</b> RQ-4 Development and Demonstration (includes enterprise management, test and evaluation, software integration, and fielding support for projects 675145, 675146 (Block 40) and 675147 (Ground Segment/Comm System) as well as program protection projects, studies and analysis supporting future system enhancements)</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> Development activities to support required sensor upgrades for the RQ-4 as well as completion of Synthetic Aperture Radar - Complex Imagery development testing, development of enhanced weather capabilities, mission planning, upgrades to ASIP SIGINT sensor, sensor enhancements and upgrades, airspace integration activities including Mode 5/ADS-B, integration of advanced sensors, continued system interoperability, cybersecurity and information assurance and reliability &amp; maintainability, and associated testing &amp; evaluation.</p> <p><b>FY 2016 Base Plans:</b> Continue activities to support required sensor upgrades for the RQ-4 as well as development of enhanced weather capabilities, mission planning, upgrades to ASIP SIGINT sensor, sensor enhancements and upgrades, airspace integration activities including Mode 5/ADS-B, integration of advanced sensors, continued system interoperability, cybersecurity and information assurance and reliability &amp; maintainability, and associated testing &amp; evaluation, and begin development of ice protection system.</p>	-	182.323	128.239	-	128.239
<p><b>Title:</b> Block 30 Government Test and Non-Prime Support</p> <p><b>Description:</b> Government test, non-prime technical support and Other Government Costs (OGC) -- The majority of this funding supports RQ-4 development testing at the 412 Test Wing at Edwards AFB, CA and also includes funding for incidental support from Air Force Operational Test and Evaluation Center (AFOTEC), Joint Interoperability Test Command (JITC), Distributed Common Ground System (DCGS), other interoperability partners and OGC.</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b></p>	-	24.114	25.448	-	25.448

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675145 / RQ-4 Block 30
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue government test and non-prime engineering and technical support and Other Government Costs.					
<b><i>FY 2016 Base Plans:</i></b> Continue government test and non-prime engineering and technical support and Other Government Costs.					
<b>Accomplishments/Planned Programs Subtotals</b>	-	206.437	153.687	-	153.687
	<b>FY 2014</b>	<b>FY 2015</b>			
<b><i>Congressional Add:</i></b> Study for Adaptation of U-2 Sensors for RQ-4 Block 30	10.000	-			
<b><i>FY 2014 Accomplishments:</i></b> Initiated next gen sensor study and conducted assessment for integration of U-2 sensors or alternative sensors of comparable capability onto the RQ-4B to include comparing how differences in flight performance would affect sensor performance such as enhanced weather capabilities, mission planning and airspace and sensor interoperability.					
<b>Congressional Adds Subtotals</b>	10.000	-			

<b>C. Other Program Funding Summary (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APAF: BA04: Line Item # HAEUAV: RQ-4	11.000	54.475	37.800	-	37.800	35.552	38.020	16.503	16.800	-	3,840.645
• APAF: BA04: Line Item # RQ440P: RQ-4 Block 40 Proc	1.747	-	-	-	-	-	-	-	-	-	12.438
• APAF: BA05: Line Item # HAWK00: RQ-4 Mods	9.313	21.354	50.022	-	50.022	34.493	89.248	67.265	68.477	837.540	1,562.422
• APAF: BA05: Line Item # RQ4GCM: RQ-4 GSRA/CSRA Mods	23.668	-	-	-	-	-	-	-	-	-	23.688

**Remarks**

**D. Acquisition Strategy**  
The RQ-4 program uses an evolutionary acquisition strategy to provide the warfighter with a near-term combat capability with increased time-phased capability improvements as technology and risk achieve satisfactory levels. Northrop Grumman Corporation is the prime contractor. A suite of contract vehicles is used for development efforts: primarily, an IDIQ contract covers development, modernization, production, retrofit, fielding, and sustainment efforts through FY 2020.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>	<b>Project (Number/Name)</b>
3600 / 7	PE 0305220F / RQ-4 UAV	675145 / RQ-4 Block 30

The next event is a Milestone (MS) C decision (date 2QFY15). Upon a successful MS C decision concluding the Nunn-McCurdy re-certification process, the RQ-4 program plans to transition from the Production and Deployment phase to the Operations and Support phase of the Defense Acquisition System. Future required capabilities beyond the core Acquisition Category I (ACAT) RQ-4 program are planned to be added over time as separate modification programs.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675145 / RQ-4 Block 30
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Manufacturing & Development/IDIQ Block 30	SS/ Various	Northrop Grumman Integrated Systems : San Diego, CA	18.982	10.000	Jul 2014	180.903	Jul 2015	128.139	May 2016	-		128.139	574.654	912.678	912.678
<b>Subtotal</b>			18.982	10.000		180.903		128.139		-		128.139	574.654	912.678	912.678

**Remarks**  
Target Value of the Global Hawk EMD & IDIQ Contracts is not segregated by Budget Project Number. FY15 and beyond contains budget necessary for GH fleet support with Northrop Grumman.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Non Prime Technical Support	Various	Various : Dayton, OH	0.000	-		1.420	Jan 2015	0.100	Feb 2016	-		0.100	0.500	2.020	-
<b>Subtotal</b>			0.000	-		1.420		0.100		-		0.100	0.500	2.020	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Test & Evaluation	MIPR	412 TW : Edwards AFB, CA	0.950	-		16.522	Oct 2014	17.008	Oct 2015	-		17.008	125.490	159.970	-
<b>Subtotal</b>			0.950	-		16.522		17.008		-		17.008	125.490	159.970	-

**Remarks**  
Target Value of the Global Hawk effort is not segregated by Budget Project Number. FY15 and beyond contains budget necessary for GH fleet test support.

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA: A&AS	Various	Various : Dayton, OH	0.000	-		5.270	Nov 2014	5.064	Nov 2015	-		5.064	26.662	36.996	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675145 / RQ-4 Block 30
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA: Other Government Costs	Various	Various : Dayton, OH	0.000	-		2.322	Oct 2014	3.376	Oct 2015	-		3.376	17.948	23.646	-
<b>Subtotal</b>			0.000	-		7.592		8.440		-		8.440	44.610	60.642	-

**Remarks**  
Target Value of the Global Hawk Contracts is not segregated by Budget Project Number. FY15 and beyond contains budget necessary for GH fleet management services support.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	19.932	10.000	206.437	153.687	-	153.687	745.254	1,135.310	-

**Remarks**  
Target Value of the Global Hawk EMD & IDIQ Contracts is not segregated by Budget Project Number.



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675145 / RQ-4 Block 30
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SAR Complex Imagery	2	2015	4	2015
Enhanced Weather Capability	2	2015	1	2017
Mode 5/ADS-B	4	2015	4	2017
ASIP Inc 1	2	2015	4	2016
Mission Planning	1	2015	3	2016
Next Gen Sensor Study	4	2014	3	2015
Sensor Enhancements & Upgrades	4	2015	4	2017
Ice Protection System	4	2016	4	2018
412 Test Wing Support	1	2015	4	2020

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675146: RQ-4 Block 40	99.855	56.600	12.636	6.814	-	6.814	8.979	14.299	15.148	15.419	19.533	249.283
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

1. The RQ-4 Block 40 Project was directed by an Acquisition Decision Memorandum (ADM) signed 14 Jun 2011 by USD (AT&L). At the time of the ADM signature, and subsequent designation of projects, budgets had already been finalized. Prior budgets for all projects are captured under the RQ-4 Baseline project, as its related Project (675144) was the core project for the RQ-4 program prior to the directed restructure.

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

The RQ-4 Remotely Piloted Aircraft (RPA) provides a high altitude, deep look, long-endurance Intelligence, Surveillance, and Reconnaissance (ISR) capability that complements space and other airborne collectors during peacetime, crisis, and war-fighting scenarios.

RDT&E funding in this project supports design, development, integration, and testing of items needed to meet validated requirements for Block 40 aircraft, including further development, integration and test of the Multi-Platform Radar Technology Insertion Program (MP-RTIP) sensor capabilities. The Block 40 program provides critical Synthetic Aperture Radar (SAR) and Ground Moving Target Indicator (GMTI) data to the warfighter. This funding also supports continued aircraft/communications systems modernization to include Mode 5/ADS-B, mission planning upgrade development and testing, program protection projects, enhanced weather capability, radar maritime modes, development and testing of ice protection system, and reliability and maintainability improvements. Funding continues RQ-4 unique development and integration of upgraded capabilities.

In FY15 and beyond, the RQ-4 Block 40 project 675146 includes the delta costs only for the development of above common capabilities funded with the RQ-4 Block 30 project, 675145. The RQ-4 Block 30 project, 675145, contains the budget necessary for systems engineering/program management, software integration, test and evaluation, and fielding support for the fleet.

When judged feasible and affordable, this program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Likewise, studies and activities may be initiated to further explore the utility of incorporating the emerging architectural standards such as the USAF Unmanned Aerial System (UAS) Command and Control Initiative (UCI) or the DoD's Unmanned Control Segment standards (UCS).

The RQ-4 program will maintain capability and interoperability for Block 40 including efforts with system of systems partners and continue to incorporate applicable synergies with other platforms, such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation & Dissemination (PED) elements.

Activities also include studies and analysis supporting future system enhancements, current and future program planning, and project execution.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p><b>Title:</b> RQ-4 Block 40 System Development and Demonstration (SDD)</p> <p><b>Description:</b> RQ-4 Block 40 Payload and Aircraft/Communications Development and Demonstration</p> <p><b>FY 2014 Accomplishments:</b> Continued RQ-4 unique development and integration of MP-RTIP upgraded capabilities. Continued Aircraft/Communication systems modernization to include Mode 5/ADS-B, mission planning upgrade, and program protection. Continued aircraft operations surety, cybersecurity and information assurance, and reliability &amp; maintainability and associated testing &amp; evaluation.</p> <p><b>FY 2015 Plans:</b> Plan to conduct IOT&amp;E and continue development of enhanced weather capabilities, mission planning, airspace integration activities including Mode 5/ADS-B, sensor software, integration of MP-RTIP radar maritime modes, continued enhancements to system interoperability, cybersecurity, information assurance and reliability &amp; maintainability improvements and associated testing &amp; evaluation.</p> <p><b>FY 2016 Base Plans:</b> Continue development of enhanced weather capabilities, mission planning, airspace integration activities including Mode 5/ADS-B, sensor software, utilization of radar maritime modes, continued enhancements to system interoperability, cybersecurity, information assurance and reliability &amp; maintainability improvements and associated testing &amp; evaluation, and begin development of ice protection system.</p>	37.052	12.636	6.814	-	6.814
<p><b>Title:</b> RQ-4 Block 40 Government Test and Non-Prime Support</p> <p><b>Description:</b> Government test, non-prime technical support and Other Government Costs (OGC) -- The majority of this funding supports RQ-4 development testing at the 412 Test Wing at Edwards AFB, CA and also includes funding for incidental support from Air Force Operational Test and Evaluation Center (AFOTEC), Joint Interoperability Test Command (JITC), Distributed Common Ground System (DCGS), other interoperability partners and OGC.</p> <p><b>FY 2014 Accomplishments:</b> Continued government test and non-prime engineering and technical support for Block 40 IOT&amp;E and Other Government Costs</p> <p><b>FY 2015 Plans:</b> N/A</p> <p><b>FY 2016 Base Plans:</b></p>	19.548	-	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	56.600	12.636	6.814	-	6.814

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF: BA04: Line Item # HAEUAV: RQ-4	11.000	54.475	37.800	-	37.800	35.552	38.020	16.503	16.800	-	3,840.645
• APAF: BA04: Line Item # RQ440P: RQ-4 Blk 40 Proc	1.747	-	-	-	-	-	-	-	-	-	12.438
• APAF: BA05: Line Item # HAWK00: RQ-4 Mods	9.313	21.354	50.022	-	50.022	34.493	89.248	67.265	68.477	837.540	1,562.422
• APAF: BA05: Line Item # RQ4GCM: RQ-4 GSRA/CSRA Mods	23.668	-	-	-	-	-	-	-	-	-	23.668
• RDTE: BA07: PE 0305238F: NATO AGS	221.589	232.851	197.486	-	197.486	39.292	-	-	-	-	825.015

**Remarks**

**D. Acquisition Strategy**

The RQ-4 program uses an evolutionary acquisition strategy to provide the warfighter with a near-term combat capability with increased time-phased capability improvements as technology and risk achieve satisfactory levels. Northrop Grumman Corporation is the prime contractor. A suite of contract vehicles is used for development efforts: a legacy EMD "C" contract is being phased out with the completion of current efforts; an IDIQ contract covers development, modernization, production, retrofit, fielding, and sustainment efforts through FY 2020.

The next event is a Milestone (MS) C decision (date 2QFY15). Upon a successful MS C decision concluding the Nunn-McCurdy re-certification process, the RQ-4 program plans to transition from the Production and Deployment phase to the Operations and Support phase of the Defense Acquisition System. Future required capabilities beyond the core Acquisition Category I (ACAT) RQ-4 program are planned to be added over time as separate modification programs.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering Manufacturing & Development/IDIQ Block 40	SS/ Various	Northrop Grumman Integrated Systems : San Diego, CA	84.351	37.052	Oct 2013	12.636	Nov 2014	6.814	Nov 2015	-		6.814	73.378	214.231	214.231
<b>Subtotal</b>			84.351	37.052		12.636		6.814		-		6.814	73.378	214.231	214.231

**Remarks**  
Target Value of the RQ-4 EMD & IDIQ contracts is not segregated by Budget Project Number. FY15 and beyond budget necessary for RQ-4 fleet support with Northrop Grumman is contained in Budget Project Number 675145, RQ-4 Block 30.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Non-Prime Technical Support	Various	Various : Dayton, OH	0.712	0.657	Oct 2013	-		-		-		-	-	1.369	-
<b>Subtotal</b>			0.712	0.657		-		-		-		-	-	1.369	-

**Remarks**  
Target Value of the RQ-4 contract is not segregated by Budget Project Number.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Test & Evaluation	MIPR	412 TW : Edwards AFB, CA	8.700	14.531	Oct 2013	-		-		-		-	-	23.231	-
<b>Subtotal</b>			8.700	14.531		-		-		-		-	-	23.231	-

**Remarks**  
Target Value of the RQ-4 effort is not segregated by Budget Project Number. FY15 and beyond budget necessary for GH fleet test support is contained in Budget Project Number 675145, RQ-4 Block 30.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40
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<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA: A&AS	Various	Various : Dayton, OH	4.208	2.832	Nov 2013	-		-		-		-	-	7.040	-
PMA: Other Gov't Cost	Various	Various : Dayton, OH	1.884	1.528	Oct 2013	-		-		-		-	-	3.412	-
<b>Subtotal</b>			6.092	4.360		-		-		-		-	-	10.452	-

**Remarks**  
Target Value of the RQ-4 contracts is not segregated by Budget Project Number. FY15 and beyond budget necessary for GH fleet management services support and other government cost is contained in Budget Project Number 675145, RQ-4 Block 30.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	99.855	56.600	12.636	6.814	-	6.814	73.378	249.283	-

**Remarks**  
Target Value of the RQ-4 EMD & IDIQ Contracts is not segregated by Budget Project Number.

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Block 40 IOT&E					██████████																							
Block 40 IOC									██																			
Block 40 FOC															██													
GH MP-RTIP Integration	██████████																											
Sensor Enhancement			██████████																									
Enhanced Weather Capability					████████████████████																							
Mode 5/ADS-B									████████████████████																			
Mission Planning			██████████████████																									
Ice Protection System													██████████████████████████████															
412 Test Wing Support	██████████																											

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675146 / RQ-4 Block 40
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 40 IOT&E	2	2015	4	2015
Block 40 IOC	1	2016	1	2016
Block 40 FOC	1	2017	1	2017
GH MP-RTIP Integration	1	2014	2	2015
Sensor Enhancement	4	2014	1	2016
Enhanced Weather Capability	2	2015	1	2017
Mode 5/ADS-B	4	2015	4	2017
Mission Planning	3	2014	3	2016
Ice Protection System	3	2016	1	2019
412 Test Wing Support	1	2014	4	2014

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675147: RQ-4 Grnd Segment/Comm System	31.606	22.309	-	31.460	-	31.460	53.129	112.791	141.400	143.930	86.419	623.044
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

1. The RQ-4 Ground Segment/Communications System Sub-Program was directed by an Acquisition Decision Memorandum (ADM) signed 14 Jun 2011 by USD (AT&L). At the time of the ADM signature, and subsequent designation of sub-program projects, budgets had already been finalized. The budgets for all projects are captured under the RQ-4 baseline project, as its related Project (675144) was the core project for the RQ-4 program prior to the directed restructure.

2. The FY15 PB reinstated the Block 30s. As a result, the operational need for ground stations and modern communications significantly increased. The GSM and CSM projects will resolve Diminishing Manufacturing Supply (DMS) and obsolescence issues in the ground and communication systems and support a 20 year planned operational lifecycle for the Block 20/30/40 fleet. GSM and CSM will leverage previous design and development efforts to implement cost-effective solutions.

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

The RQ-4 Remotely Piloted Aircraft (RPA) provides a high altitude, deep look, long-endurance intelligence, surveillance, and reconnaissance (ISR) capability that complements space and other airborne collectors during peacetime, crisis, and war-fighting scenarios.

RDT&E funding in this project supports design, development, integration and testing of the weapon system's ground elements and communications capabilities. The ground segment currently includes the Mission Control Elements (MCE), the Launch and Recovery Elements (LRE), and the networking resources required to simultaneously disseminate intelligence information while remaining compliant with DoD cybersecurity network requirements to operate on the Global Information Grid.

The RDT&E funding in this project also supports the GSM and CSM efforts, as well as next generation communications capabilities. GSM resolves fleet grounding DMS and obsolescence issues associated with ground segment equipment and provides critical warfighter capabilities such as building-based multi-aircraft control. CSM resolves critical DMS and obsolescence issues in the RQ-4 communication infrastructure and provides enhancements across the RQ-4 communication network. Both GSM and CSM will employ the USAF Unmanned Aerial System (UAS) Command and Control Initiative (UCI) and the DoD's Unmanned Control Segment standards (UCS), using a service-oriented, open architecture approach.

When judged feasible and affordable, this program will participate in the development, testing, and implementation of international standards to enhance joint, allied, and coalition interoperability. Likewise, studies and activities may be initiated to explore the utility of next-generation communications technologies, as well as emerging architectural standards such as UCI and UCS.

The RQ-4 program will maintain and upgrade interoperability for Blocks 20/30/40 with system of systems partners and continue to incorporate applicable synergies with other platforms such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation & Dissemination (PED) elements. The networking capability

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System
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for intelligence dissemination is required to provide the data transport interface between the Weapons System, Operations Centers, and external Intelligence Community customers.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p><b>Title:</b> RQ-4 Ground Station / Communications System- Critical Obsolescence Issues &amp; Modernization</p> <p><b>Description:</b> RQ-4 Ground Segment/ Communications System Development</p> <p><b>FY 2014 Accomplishments:</b> Continued ground station and communication system updates to resolve critical obsolescence issues</p> <p><b>FY 2015 Plans:</b> N/A</p> <p><b>FY 2016 Base Plans:</b> Continue to resolve critical DMS and obsolescence issues with ground segment equipment and software in support of the planned 20-year operational lifecycle. Maintain and upgrade interoperability and cybersecurity with system of systems partners and continue to incorporate applicable synergies with other platforms, such as the U.S. Navy's Triton, other RPA weapon systems, and Processing, Exploitation &amp; Dissemination (PED) elements. Incorporate Air Vehicle (AV) modifications/upgrades into the ground segment architecture. Design and develop the Ground Segment Modernization (GSM) project, leveraging earlier efforts which developed a modern aircraft command and control capability on an open-systems architecture. Remaining development includes software integration, sensor payload command and control, interface implementation, installation of hardware/software into facilities, testing &amp; evaluation. Implement Command and Control Initiative (UCI) and Unmanned Control Segment (UCS) standards into the Global Hawk architecture.</p>	20.804	-	30.785	-	30.785
<p><b>Title:</b> Government Test and Non-Prime support</p> <p><b>Description:</b> Government test, non-prime technical support and Other Government Costs (OGC) -- The majority of this funding supports Global Hawk development testing at the 412 Test Wing at Edwards AFB, CA and also includes funding for incidental support from Air Force Operational Test and Evaluation Center (AFOTEC), Joint Interoperability Test Command (JITC), Distributed Common Ground System (DCGS), other interoperability and cybersecurity partners and OGC.</p> <p><b>FY 2014 Accomplishments:</b></p>	1.505	-	0.675	-	0.675

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued government test and non-prime engineering and technical support and Other Government Costs for Ground Segment / Comm systems.  <i><b>FY 2015 Plans:</b></i> N/A  <i><b>FY 2016 Base Plans:</b></i> Continue government test and non-prime engineering and technical support and Other Government Costs for Ground Segment / Comm systems.					
<b>Accomplishments/Planned Programs Subtotals</b>	22.309	-	31.460	-	31.460

<b>C. Other Program Funding Summary (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
<b>Line Item</b>											
• APAF: BA04: Line Item # HAEUAV: RQ-4	11.000	54.475	37.800	-	37.800	35.552	38.020	16.503	16.800	-	3,840.645
• APAF: BA04: Line Item # RQ440P: RQ-4 Block 40 Proc	1.747	-	-	-	-	-	-	-	-	-	12.438
• APAF: BA05: Line Item # HAWK00: RQ-4 Mods	9.313	21.354	50.022	-	50.022	34.493	89.248	67.265	68.477	837.540	1,562.422
• APAF: BA05: Line Item # RQ4GCM: RQ-4 GS/CS Mods	23.668	-	-	-	-	-	-	-	-	-	23.668

**Remarks**

**D. Acquisition Strategy**

The RQ-4 program uses an evolutionary acquisition strategy to provide the warfighter with a near-term combat capability with increased time-phased capability improvements as technology and risk achieve satisfactory levels. Northrop Grumman Corporation is the prime contractor. A suite of contract vehicles is used for development efforts: a legacy EMD "C" contract is being phased out with the completion of current efforts; and a 2015 follow-on IDIQ covers development, modernization, production, retrofit, fielding, and sustainment efforts through FY 2020.

The next event is a Milestone (MS) C decision (date 2QFY15). Upon a successful MS C decision concluding the Nunn-McCurdy re-certification process, the RQ-4 program plans to transition from the Production and Deployment phase to the Operations and Support phase of the Defense Acquisition System. Future required capabilities beyond the core Acquisition Category I (ACAT) RQ-4 program are planned to be added over time as separate ACAT modification programs.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering, Manufacturing & Development/IDIQ Ground Segment and Communication Systems	SS/CPIF	Northrop Grumman Integrated Systems : San Diego, CA	27.271	20.805	Oct 2013	-		30.785	Nov 2015	-		30.785	534.294	613.155	613.155
<b>Subtotal</b>			27.271	20.805		-		30.785		-		30.785	534.294	613.155	613.155

**Remarks**  
Target Value of the RQ-4 EMD & IDIQ Contracts is not segregated by Budget Project Number. FY16 and beyond budget necessary for RQ-4 fleet support with Northrop Grumman is contained in Budget Project Number 675145, RQ-4 Block 30.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Non-Prime Technical Support	Various	Various : Dayton, OH	1.447	1.291	Oct 2013	-		0.675	Dec 2015	-		0.675	3.375	6.788	TBD
<b>Subtotal</b>			1.447	1.291		-		0.675		-		0.675	3.375	6.788	-

**Remarks**  
Target Value of the RQ-4 contracts is not segregated by Budget Project Number.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Test & Evaluation	MIPR	412 TW : Edwards AFB, CA	2.500	-	Oct 2013	-		-		-		-	-	2.500	-
<b>Subtotal</b>			2.500	-		-		-		-		-	-	2.500	-

**Remarks**  
Target Value of the RQ-4 effort is not segregated by Budget Project Number. FY16 and beyond budget necessary for RQ-4 fleet test support is contained in Budget Project Number 675145, RQ-4 Block 30.



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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>											<b>Date: February 2015</b>				
<b>Appropriation/Budget Activity</b> 3600 / 7						<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV					<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System				

<b>Management Services (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>		<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>				
PMA: A&AS	Various	Various : Dayton, OH	0.269	0.132	Oct 2013	-		-		-		-	-	0.401	-	
PMA: Other Gov't Cost	Various	Various : Dayton, OH	0.119	0.081	Oct 2013	-		-		-		-	-	0.200	-	
<b>Subtotal</b>			0.388	0.213		-		-		-		-	-	0.601	-	

**Remarks**  
Target Value of the RQ-4 contracts is not segregated by Budget Project Number. FY16 and beyond budget necessary for RQ-4 fleet management services support and other government cost is contained in Budget Project Number 675145, RQ-4 Block 30.

	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	31.606	22.309	-	31.460	-	31.460	537.669	623.044	-

**Remarks**  
Target Value of the RQ-4 EMD & IDIQ Contracts is not segregated by Budget Project Number.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Grnd Segment Obsolescence Fixes	██████████																											
Ground Segment Maintenance/Upgrades									████████████████████																			
Ground Segment Modernization Project (GSMP)									████████████████████																			
Comm Sys Obsolescence Fixes	██████████																											
Comm Systems Maintenance/Upgrades									████████████████████																			
Communication System Modernization Project (CSMP)																	████████████████████											
412 Test Wing Support	██████████																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675147 / RQ-4 Grnd Segment/Comm System

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Grnd Segment Obsolescence Fixes	1	2014	4	2014
Ground Segment Maintenance/Upgrades	1	2016	4	2017
Ground Segment Modernization Project (GSMP)	1	2016	2	2018
Comm Sys Obsolescence Fixes	1	2014	4	2014
Comm Systems Maintenance/Upgrades	1	2016	3	2019
Communication System Modernization Project (CSMP)	2	2018	4	2020
412 Test Wing Support	1	2014	4	2014

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV				<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense & Avoid (C-ABSAA)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675148: Common-Airborne Sense & Avoid (C-ABSAA)	19.036	17.098	11.829	-	-	-	-	-	-	-	-	47.963
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

In FY 2016, PE 0305220F, RQ-4, Project 675148, Common-Airborne Sense & Avoid (C-ABSAA), transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148. This transfer will provide greater visibility into this capability and prepares for expanded applications by making the capability program and platform agnostic.

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

Common-Airborne Sense and Avoid (C-ABSAA) is an analysis and developmental effort in the pre-Material Development Decision phase of the acquisition lifecycle which supports emerging warfighter requirements to fully integrate Group 4-5 RPA into the National Airspace System (NAS), international airspace, other nations' sovereign airspace, and operational combat airspace to conduct the entire range of military operations across all mission environments. C-ABSAA also supports the "Worldwide Operations" Key Performance Parameter (KPP) in larger Remotely Piloted Aircraft (RPA) requirement documents, and Public Law 112-239 directing DoD collaboration with the Federal Aviation Administration (FAA) and the National Air and Space Administration (NASA) to safely integrate RPA in the NAS. Funding in this project supports the development of a Sense and Avoid (SAA) capability set for Group 4-5 RPA and covers analysis, research, and developmental activities as well as infrastructure and other government costs. Ongoing activities include support to the development of warfighter requirements and analysis of possible solution alternatives, the collaboration with the FAA, NASA, and Office of the Secretary of Defense (OSD) to develop national policy and standards, and SAA related studies, analysis, modeling and simulation, program planning and project execution. RPA platform specific integration and testing is not included.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> SAA-Related Requirements Development and Analysis, National Policy Standards Development, and Technology Development and Demonstration	17.098	11.829	-	-	-
<b>Description:</b> Support development and analysis of warfighter requirements and analysis of possible solution alternatives. Develop Sense and Avoid (SAA) technology and capabilities for Group 4-5 RPA. Collaborate with the FAA, NASA, and OSD to develop national policy and standards. Conduct SAA-related studies, analysis, modeling and simulation, demonstrations, program planning and project execution.					
<b>FY 2014 Accomplishments:</b> Supported Air Combat Command with development of an Initial Capabilities Document, and prepared to conduct Analysis of Alternatives study. Collaborated with FAA and NASA on national policy and standards. Built and exercised modeling and simulation capabilities to support requirements, policy/standards, and technology					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense & Avoid (C-ABSAA)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p>development. Continued SAA science and technology research and development with the AF Research Lab (AFRL).</p> <p><b>FY 2015 Plans:</b> Support Air Combat Command with Initial Capabilities Document development and approval, and conduct Analysis of Alternatives study. Continue to collaborate with FAA and NASA on national policy and standards, and to build and exercise modeling and simulation capabilities to support requirements, policy/standards, and technology development. Continue SAA science and technology research and development with the AFRL to demonstrate SAA technologies.</p> <p><b>FY 2016 Base Plans:</b> In FY 2016, Project 675148, C-ABSAA, efforts transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	17.098	11.829	-	-	-

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

**Remarks**

**D. Acquisition Strategy**  
C-ABSAA will integrate Better Buying Power 3.0 initiatives throughout its acquisition lifecycle and rely upon acquisition of government data rights to maximize contractor competition from Technology Development through Production. The program uses an incremental acquisition strategy to provide the warfighter with SAA capability for Group 4-5 RPA with increased, time-phased capability improvements as technology and risks achieve satisfactory levels. Group 4-5 RPA platforms will be expected to integrate the C-ABSAA provided capability into their unique systems via retrofit or in production.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense & Avoid (C-ABSAA)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
C-ABSAA Technology Development	C/Various	Various : Various,	18.106	16.512	Oct 2013	10.732	Oct 2014	-		-		-	-	45.350	TBD
<b>Subtotal</b>			18.106	16.512		10.732		-		-		-	-	45.350	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA)	Various	Various : Dayton, OH	0.930	0.586	Oct 2013	1.097	Oct 2014	-		-		-	-	2.613	TBD
<b>Subtotal</b>			0.930	0.586		1.097		-		-		-	-	2.613	-

**Remarks**  
The Target supports multiple technology development contracts.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	19.036	17.098	11.829	-	-	-	-	47.963	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV			<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense & Avoid (C-ABSAA)				
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	

**Remarks**  
 In FY 2016, PE 0305220F, RQ-4, Project 675148, Common-Airborne Sense & Avoid (C-ABSAA), transferred to PE 0305206F, Airborne Reconnaissance Systems, Project 675148. This transfer will provide greater visibility into this capability and prepares for expanded applications by making the capability program and platform agnostic.

The Target Value supports multiple technology development contracts.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense & Avoid (C-ABSAA)

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Initial Capabilities Document (ICD)																												
Analysis of Alternatives																												
Material Development Decision																												
Material Solution Analysis																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 675148 / Common-Airborne Sense & Avoid (C-ABSAA)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Initial Capabilities Document (ICD)	2	2014	3	2015
Analysis of Alternatives	2	2015	4	2015
Material Development Decision	4	2015	4	2015
Material Solution Analysis	4	2015	4	2015

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 67RTIP / MP-RTIP
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
67RTIP: MP-RTIP	198.282	14.173	10.926	16.092	-	16.092	7.663	11.802	11.811	12.022	12.000	294.771
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**MDAP/MAIS Code:** 293

**Note**

Beginning in FY09, the Multi-Platform Radar Technology Insertion Program (MP-RTIP) funding was transferred to program 0305220F (RQ-4) Global Hawk (GH). Therefore, the data in this package includes only FY09 and subsequent funding related to program 0305220F.

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

The MP-RTIP sensor was designed as a family of modular, scalable sensors to provide next generation capabilities to support sustainable network centric operations with integrated Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) capability. MP-RTIP provides the RQ-4 Block 40 aircraft with advanced Synthetic Aperture Radar (SAR) and Moving Target Indicator (MTI) sensor capabilities.

This project (67RTIP) includes all MP-RTIP design, development, test, and integration efforts for the RQ-4 Block 40 Platform. Integration activities include platform integration of the MP-RTIP sensor and sustainment logistics planning support. MP-RTIP studies and development insertion include the implementation of Maritime Modes (MM), Maritime Inverse SAR (MISAR), technical refresh, product improvements and other advanced capabilities.

Activities also include studies and analysis supporting current and future program planning and future modes development based on user 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. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<b>Title:</b> DRACO classified program administered by GH Program Office with MP-RTIP funds	1.751	-	-	-	-
<b>Description:</b> Development and integration					
<b>FY 2014 Accomplishments:</b> Classified					
<b>Title:</b> Development and Integration	12.422	9.876	14.307	-	14.307
<b>Description:</b> MP-RTIP development and integration					
<b>FY 2014 Accomplishments:</b>					

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 67RTIP / MP-RTIP
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p>Completed MP-RTIP RSD 1.4.5 software build and integrated into KD 2.2.3. Initiated RSD 1.4 increment (1.4.6) &amp; RSD 1.5 software builds. Completed System Level Performance Verification (SLPV)/Integrated System Evaluation (ISE).</p> <p><b>FY 2015 Plans:</b> Completing development of the MP-RTIP RSD 1.4 increment (1.4.6) software build. Align development support of RSD 1.5.</p> <p><b>FY 2016 Base Plans:</b> Will complete RSD 1.5 through Flight Testing.</p>					
<p><b>Title:</b> Test &amp; Evaluation</p> <p><b>Description:</b> MP-RTIP Test &amp; Evaluation</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> Complete MP-RTIP Test &amp; Evaluation support for RSD 1.4.6 which will include US Maritime Modes. Initiate and complete Test and Evaluation Planning for remaining requirements including but not limited to test planning, test force and range support, interoperability compliance and third party performance reviews.</p> <p><b>FY 2016 Base Plans:</b> Will complete test &amp; evaluation for flight test of RSD 1.5. Also, initiate Test and Evaluation Planning for remaining requirements including but not limited to test planning, test force and range support, interoperability compliance and third party performance reviews.</p>	-	1.050	1.785	-	1.785
<b>Accomplishments/Planned Programs Subtotals</b>	14.173	10.926	16.092	-	16.092

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA04: Line Item # HAEUAV: RQ-4	11.000	54.475	37.800	-	37.800	35.552	38.020	16.503	16.800	-	3,840.645
• APAF: BA04: Line Item # RQ440P: RQ-4 Blk 40 Proc	1.747	-	-	-	-	-	-	-	-	-	12.438

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 67RTIP / MP-RTIP
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # HAWK00: RQ-4 Mods	9.313	21.354	50.022	-	50.022	34.493	89.248	67.265	68.477	837.540	1,562.422
• APAF: BA05: Line Item # RQ4GCM: RQ-4 GSRA/CSRA Mods	23.668	-	-	-	-	-	-	-	-	-	23.668
• RDT&E: BA07: PE 0305238F: NATO AGS	221.589	232.851	197.486	-	197.486	39.292	-	-	-	-	825.015

**Remarks**

**D. Acquisition Strategy**

The sole source SDD contract is planned to be closed out in FY 2016.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 67RTIP / MP-RTIP
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
MP-RTIP	SS/CPFF	Northrop Grumman Integrated Systems : El Segundo, CA	157.782	12.109	Apr 2014	7.697	Nov 2014	11.824	Nov 2015	-		11.824	40.288	229.700	TBD
<b>Subtotal</b>			157.782	12.109		7.697		11.824		-		11.824	40.288	229.700	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
IRT Study	Various	Various : Various,	0.105	-		-		-		-		-	-	0.105	0.105
Logistics Planning	SS/CPFF	Northrop Grumman Integrated Systems : El Segundo, CA	3.667	-		-		-		-		-	-	3.667	3.667
<b>Subtotal</b>			3.772	-		-		-		-		-	-	3.772	3.772

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Joint Test Force, Edward AFB, Joint Interoperability Test Center, Navy, & IV&V	MIPR	Various : Various,	8.936	-	Dec 2013	1.050	Jan 2015	1.780	Jan 2015	-		1.780	4.360	16.126	TBD
<b>Subtotal</b>			8.936	-		1.050		1.780		-		1.780	4.360	16.126	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA: A&AS	C/CPFF	Various : Various,	24.297	1.883	Oct 2013	1.973	Nov 2014	2.030	Nov 2015	-		2.030	8.520	38.703	TBD
PMA: Other Gov't Cost	Various	Various : Boston, MA	3.495	0.181	Oct 2013	0.206	Nov 2014	0.458	Nov 2015	-		0.458	2.130	6.470	TBD
<b>Subtotal</b>			27.792	2.064		2.179		2.488		-		2.488	10.650	45.173	-



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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 67RTIP / MP-RTIP
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Test Phase 2B - Interoperability	■																											
RSD 1.4.5 Software Build	■	■	■	■																								
DRACO									■	■	■	■																
RSD 1.4.6 Software Build													■	■	■	■												
RSD 1.5 Software Build (Post IOT&E Updates)													■	■	■	■	■	■	■	■								
Test Phase 3 - ISE (SLPV)																	■	■	■	■								
IOT&E Readiness & IOT&E																					■	■	■	■				
Future Software Builds																									■	■	■	■

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305220F / RQ-4 UAV	<b>Project (Number/Name)</b> 67RTIP / MP-RTIP
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Test Phase 2B - Interoperability	1	2014	1	2014
RSD 1.4.5 Software Build	1	2014	4	2014
DRACO	4	2014	4	2015
RSD 1.4.6 Software Build	4	2014	3	2015
RSD 1.5 Software Build (Post IOT&E Updates)	4	2014	4	2016
Test Phase 3 - ISE (SLPV)	3	2014	4	2014
IOT&E Readiness & IOT&E	3	2015	3	2015
Future Software Builds	1	2017	4	2020



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	7.413	11.096	21.587	-	21.587	21.235	16.361	14.512	14.903	Continuing	Continuing
675197: <i>NCCT Core Technology</i>	-	7.413	11.096	19.271	-	19.271	18.715	13.796	11.901	12.246	Continuing	Continuing
675275: <i>SUTER</i>	-	-	-	2.316	-	2.316	2.520	2.565	2.611	2.657	Continuing	Continuing

**Note**

In FY 2016, PE 0305221, Network-Centric Collaborative Targeting, Project 675197 efforts for SUTER were transferred to PE 0305221, Network-Centric Collaborative Targeting, Project 675275, SUTER.

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

Network Centric Collaborative Targeting (NCCT) is the Air Force program of record responsible for developing core technologies and sub-nodal analysis tools to horizontally and/or vertically integrate network collaborative Intelligence, Surveillance and Reconnaissance (ISR) sensor systems within and across intelligence disciplines. Operational uses of core technologies can include, but are not limited to, Signals Intelligence to Signals Intelligence (SIGINT-SIGINT) correlation and Ground Moving Target Indicator to Signals Intelligence (GMTI-SIGINT) correlation. Operational uses of sub-nodal analysis tools can include, but are not limited to, determining which nodes of the adversary's Command, Control, Communications, Computers, Intelligence (C4I) network to engage or protect to achieve desired effects, and modeling execution plans to determine the need to disrupt or monitor the required network aim-points in order to redirect activities based on changing battlefield conditions. NCCT software applications employ Machine-to-Machine (M2M) interfaces and Internet Protocol (IP) connectivity to coordinate sensor cross-cues and collection activities. NCCT correlation and fusion services ingest collection data to produce a single, composite track (geo-location and identification) for high-value targets. NCCT research and development funding supports evolutionary development of the NCCT message set and network management systems for example Operations Interfaces, Network Controllers, Fusion Engines, Data Guards, Interface to Command & Control, and Interface to Overhead Intelligence Operations (OIO), the migration of the NCCT technologies to emerging network centric technologies such as Service Oriented Architectures (SOA), global web-enabled services, and satisfying DoD standards and Information Assurance requirements.

NCCT Core Technology develops the hardware and software to horizontally integrate dissimilar Joint and Coalition Battle Management, Command & Control (BMC2), and ISR assets and systems into integrated target tracks shared across networked platforms. NCCT Core Technology includes, but is not limited to, network management software, operator interfaces, standard network messages and formats, correlation software and data rules of interaction, NCCT multi-level security hardware and software items, and platform specific Platform Interface Modules (PIMs). Current NCCT-enabled systems include, but are not limited to, the RC-135V/W/S/U RIVET JOINT, COBRA BALL, COMBAT SENT, EC-130H COMPASS CALL, Distributive Common Ground System (DCGS) SIGINT components, Falconer Aerospace Operations Centers (AOC), Forward Processing/Exploitation/Dissemination (FPED), Gorgon Stare (GS), OIO, and multiple airborne coalition partner platforms. Prospective Coalition, Joint or Service systems are required to fund their respective integration, unique core technology improvements/upgrades to support system integration.

The SUTER Program System (SPS) develops concepts, Tactics/Techniques/Procedures (TTPs) and technologies for synchronizing the capabilities of ISR and non-kinetic capabilities in a coordinated fashion with traditional kinetic weapons to prosecute targets connected together or dependent upon some form of communications

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	
<p>network. SPS's planning, execution and assessment capability is implemented in a virtual architecture available to all AOCs, taking advantage of the military value added from the synergies of Joint composite ISR, non-kinetic, and/or kinetic strike packages operating against networked target sets. This virtualized Service Oriented Architecture (SOA) utilizes software applications which employ machine-to-machine interfaces and Internet Protocol (IP) communications to impact these target sets by "attacking" or influencing/shaping links, nodes or end points in the network to include: RF and terrestrial links, switches, routers, hubs, servers, IP addresses, cell phones, antennas, radars, microwave relays, SATCOM receivers, transceivers, etc. The three main pieces of the SPS CONOPS include: first, the use of SPS's sub-nodal analysis software to determine which nodes of the adversary's C4I network to engage or protect to achieve desired effects; second, the SPS's distributed operations architecture to tie together relevant planning cells (e.g. AOCs, JIOWC, etc.) so they can collaborate in developing and modeling the execution plan(s) needed to disrupt or monitor the required network aim-points; and third, via SPS's combined network Graphical User Interface (GUI), all involved "players" monitor the plan's execution, provide Near-Real Time (NRT) updates to the status of on-going activities, provide continuous assessment/updates of the execution of the plan, and, within authorities (Rules of Engagement/ROEs), re-direct activities based on changing battlefield conditions. SPS is the technology that assists COCOMs and Components to exercise synchronized dynamic Command and Control (C2) of ISR, kinetic and non-kinetic Joint operations against conventional and terrorist threat networks. SPS provides decision makers and operators supporting airborne, ship-borne, cyber and land-based C2ISR platforms and at supporting locations continuous Predictive Battle-space Awareness (PBA) of the information superiority fight. It also incorporates the machine-to-machine capabilities that rapidly synchronize the employment of kinetic weapons, non-kinetic weapons and ISR assets to target challenging threat systems responsively. SPS depicts a dynamic, multi-security-level picture of current and predicted threat network status, capitalizing on data inputs from sources such as Modernized Intelligence Database (MIDB), Net-Centric Collaborative Targeting (NCCT), Joint Targeting Database (JTDB), Computer Network Operations Database (CNODB), NASIC Links and Nodes, and Integrated Broadcast Service (IBS). SPS provides a GUI that can be tailored to support the integration of ISR, kinetic, and non-kinetic composite target packages supporting COCOM and Component specified information superiority effects and objectives.</p> <p>FY 2016 funding is dedicated to upgrading the virtualized SOA for the operational SPS system delivered in FY15, consisting of improvements in core technology security/Information Assurance, and addition of additional systems and data types.</p> <p>The NCCT program is categorized as 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.</p>		

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	7.413	11.096	10.930	-	10.930
Current President's Budget	7.413	11.096	21.587	-	21.587
Total Adjustments	-	-	10.657	-	10.657
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	10.657	-	10.657

**Change Summary Explanation**

FY 2016 increase was validated by Air Combat Command and programmed to add additional capability for the transition to an Anti-Access Area Denial (A2AD) strategy to the core NCCT system and to upgrade the operational SPS system delivered in FY 2015.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>				<b>Project (Number/Name)</b> 675197 / <i>NCCT Core Technology</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675197: <i>NCCT Core Technology</i>	-	7.413	11.096	19.271	-	19.271	18.715	13.796	11.901	12.246	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2016, PE 0305221, Network-Centric Collaborative Targeting, Project 675197 efforts for SUTER were transferred to PE 0305221, Network-Centric Collaborative Targeting, Project 675275, SUTER.

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

Network Centric Collaborative Targeting (NCCT) is the Air Force program of record responsible for developing core technologies and sub-nodal analysis tools to horizontally and/or vertically integrate network collaborative Intelligence, Surveillance and Reconnaissance (ISR) sensor systems within and across intelligence disciplines. Operational uses of core technologies would include, but are not be limited to, Signals Intelligence to Signals Intelligence (SIGINT-SIGINT) correlation and Ground Moving Target Indicator to Signals Intelligence (GMTI-SIGINT) correlation. Operational uses of sub-nodal analysis tools would include, but are not be limited to, determining which nodes of the adversary's Command, Control, Communications, Computers, Intelligence (C4I) network to engage or protect to achieve desired effects, and modeling execution plans to determine the need to disrupt or monitor the required network aim-points in order to redirect activities based on changing battlefield conditions. NCCT software applications employ Machine-to-Machine (M2M) interfaces and Internet Protocol (IP) connectivity to coordinate sensor cross-cues and collection activities. NCCT correlation and fusion services ingest collection data to produce a single, composite track (geo-location and identification) for high-value targets. NCCT research and development funding supports evolutionary development of the NCCT message set and network management systems for example Operations Interfaces, Network Controllers, Fusion Engines, Data Guards, Interface to Command & Control, and Interface to Overhead Intelligence Operations (OIO), the migration of the NCCT technologies to emerging network centric technologies such as Service Oriented Architectures (SOA), global web-enabled services, and satisfying DoD standards and Information Assurance requirements.

NCCT Core Technology develops the hardware and software to horizontally integrate dissimilar Joint and Coalition Battle Management, Command & Control (BMC2), and ISR assets and systems into integrated target tracks shared across networked platforms. NCCT Core Technology includes, but is not limited to, network management software, operator interfaces, standard network messages and formats, correlation software and data rules of interaction, NCCT multi-level security hardware and software items, and platform specific Platform Interface Modules (PIMs). Current NCCT-enabled systems include, but are not limited to, the RC-135V/W/S/U RIVET JOINT, COBRA BALL, COMBAT SENT, EC-130H COMPASS CALL, Distributive Common Ground System (DCGS) SIGINT components, Falconer Aerospace Operations Centers (AOC), Forward Processing/Exploitation/Dissemination (FPED), Gorgon Stare (GS), OIO, and multiple airborne coalition partner platforms. Prospective Coalition, Joint or Service systems are required to fund their respective integration, unique core technology improvements/upgrades to support system integration. The significant increase in RDT&E funding in the FY 2016 budget was due to Air Combat Command's validated requirement to allow not only NCCT to sustain the capability to operate in a tactical environment but in addition provide development in the Core Technology to provide enhanced capabilities for an Anti-Access Area Denial (A2AD) strategy in the future.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675197 / <i>NCCT Core Technology</i>
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The NCCT program is categorized as 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 2014	FY 2015	FY 2016
<b>Title:</b> Core Technology	7.413	11.096	19.271
<b>Description:</b> Accomplishments and planned efforts include development and update of NCCT Core Technology; technical support to users, and management activities			
<b>FY 2014 Accomplishments:</b> Supported integration of GMTI-SIGINT correlation capability with operational systems, completion and initial fielding of the NCCT global services architecture, improvements in core technology security/Information Assurance, development of an NCCT network simulation capability targeted to support operator training/Distributed Mission Training/Distributed Mission Operations, and preliminary evaluation of additional systems and data types.			
<b>FY 2015 Plans:</b> Will mature the integration of GMTI-SIGINT correlation capability with operational systems, completion and initial fielding of the NCCT global services architecture, required improvements in core technology security/Information Assurance in support of CNSS-1253. NCCT will continue evaluating collaboration of additional systems and data types.			
<b>FY 2016 Plans:</b> NCCT will begin initial integration of Link 16 Ingest, Air Moving Target Indicator (AMTI) correlation capability, and develop Distributed Mission Operations and Training (DMO/DMT) Capability. NCCT will also continue evaluating collaboration of additional systems and data types, such as OPIR Fusion and demonstration of National-to-Tactical Fusion for the technology enhancements required for NCCT to operate in an Anti-Access Area Denial (A2AD) environment.			
<b>Accomplishments/Planned Programs Subtotals</b>	7.413	11.096	19.271

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF: BA03: Line Item # 832070: <i>Intelligence Comm Equipment</i>	2.900	2.974	2.344	-	2.344	3.384	3.333	3.138	3.194	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

The NCCT Core Technology capabilities are developed, maintained and sustained with baseline/incremental upgrades plus any Quick Reaction Capability (QRC) developments acquired through the 645th Aeronautical System Group (BIG SAFARI System Program Office) in accordance with the BIG SAFARI Program Management

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675197 / <i>NCCT Core Technology</i>
<p>Directive (PMD) and the BIG SAFARI Class Justification and Authorization (J&amp;A) documents for acquisition of supplies and services. 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 -- developmental engineering to system retirement ("cradle to grave" support concept). 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/evolving Combatant Commander requirements.</p> <p>645th AESG, Wright Patterson AFB OH, manages the Cost Plus Fixed Fee (CPFF) contracts used to develop the NCCT Core Technology. 645th AESG will develop NCCT Core Technology software on common hardware for systems and platforms designated to field this ISR capability. Individual program management offices may contract directly with their prime contractors or through the 645th AESG for integration of these ISR capabilities on their respective systems and platforms.</p> <p><b>E. Performance Metrics</b></p> <p>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.</p>		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675197 / <i>NCCT Core Technology</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Core Technology	SS/CPFF	L-3ComCept : Rockwall, TX	-	3.788	Dec 2013	7.711	Jan 2015	18.549	Jan 2016	-		18.549	Continuing	Continuing	TBD
SPS Software	SS/CPFF	Analyst Warehouse : Baltimore, MD	-	2.235	May 2014	2.565	May 2015	-		-		-	-	4.800	-
<b>Subtotal</b>			-	6.023		10.276		18.549		-		18.549	-	-	-

**Remarks**  
FY 2014 (\$2.235M) and FY 2015 (\$2.565M) obligations for the SPS software was funded with NCCT Core Technology BPAC (675197). In FY 2016, the SPS BPAC (675275) will obligate the funding for SPS software development.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Security Certification/ Technical Engineering	SS/CPFF	Riverside Research Institute : Dayton, OH	-	0.290	Dec 2013	0.320	Jan 2015	0.274	Jan 2016	-		0.274	Continuing	Continuing	TBD
<b>Subtotal</b>			-	0.290		0.320		0.274		-		0.274	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA	C/FFP	Riverside Research Institute : Dayton, OH	-	1.100	Dec 2013	0.500	Feb 2015	0.448	Feb 2016	-		0.448	Continuing	Continuing	TBD





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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675197 / <i>NCCT Core Technology</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Core Tech Version 5.0.2 Development, Integration, Test and Fielding	██████████																											
Core Tech Version 5.0.3 Development, Integration, Test and Fielding					██████████																							
Core Tech Version 5.0.4 Development, Integration, Test and Fielding									██████████																			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675197 / <i>NCCT Core Technology</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Core Tech Version 5.0.2 Development, Integration, Test and Fielding	1	2014	4	2015
Core Tech Version 5.0.3 Development, Integration, Test and Fielding	4	2015	1	2018
Core Tech Version 5.0.4 Development, Integration, Test and Fielding	2	2016	4	2019

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675275 / <i>SUTER</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675275: <i>SUTER</i>	-	-	-	2.316	-	2.316	2.520	2.565	2.611	2.657	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2016, PE 0305221, Network-Centric Collaborative Targeting, Project 675197, Core Technology efforts providing funding assistance for SUTER Program System development starting in FY 2015 were transferred to PE 0305221, Network-Centric Collaborative Targeting, Project 675275, SUTER Program System to establish a dedicated funding line.

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

The SUTER Program System (SPS) is a project within the Air force program of record responsible for developing sub-nodal analysis tools to horizontally and/or vertically integrate network collaborative Intelligence, Surveillance, and Reconnaissance (ISR) sensor systems within and across intelligence disciplines. Operational uses of sub-nodal analysis tools would include, but are not limited to, determining which nodes of the adversary's Command, Control, Communications, Computers, Intelligence (C4I) network are engaged or protected to achieve desired effects, and modeling execution plans to determine the need to disrupt or monitor the required network aim-points in order to redirect activities based on changing battlefield conditions.

The SUTER Program System (SPS) develops concepts, Tactics/Techniques/Procedures (TTPs) and technologies for synchronizing the capabilities of ISR and non-kinetic capabilities in a coordinated fashion with traditional kinetic weapons to prosecute targets connected together or dependent upon some form of communications network. SPS's planning, execution and assessment capability is implemented in a virtual architecture available to all AOCs, taking advantage of the military value added from the synergies of Joint composite ISR, non-kinetic, and/or kinetic strike packages operating against networked target sets. This virtualized Service Oriented Architecture (SOA) utilizes software applications which employ machine-to-machine interfaces and Internet Protocol (IP) communications to impact these target sets by "attacking" or influencing/shaping links, nodes or end points in the network to include: RF and terrestrial links, switches, routers, hubs, servers, IP addresses, cell phones, antennas, radars, microwave relays, SATCOM receivers, transceivers, etc. The three main pieces of the SPS CONOPS include: first, the use of SPS's sub-nodal analysis software to determine which nodes of the adversary's C4I network to engage or protect to achieve desired effects; second, the SPS's distributed operations architecture to tie together relevant planning cells (e.g. AOCs, JIOWC, etc.) so they can collaborate in developing and modeling the execution plan(s) needed to disrupt or monitor the required network aim-points; and third, via SPS's combined network Graphical User Interface (GUI), all involved "players" monitor the plan's execution, provide Near-Real Time (NRT) updates to the status of on-going activities, provide continuous assessment/updates of the execution of the plan, and, within authorities (Rules of Engagement/ROEs), re-direct activities based on changing battlefield conditions. SPS is the technology that assists COCOMs and Components to exercise synchronized dynamic Command and Control (C2) of ISR, kinetic and non-kinetic Joint operations against conventional and terrorist threat networks. SPS provides decision makers and operators supporting airborne, ship-borne, cyber and land-based C2ISR platforms and at supporting locations continuous Predictive Battle-space Awareness (PBA) of the information superiority fight. It also incorporates the machine-to-machine capabilities that rapidly synchronize the employment of kinetic weapons, non-kinetic weapons and ISR assets to target challenging threat systems responsively. SPS depicts a dynamic, multi-security-level picture of current and predicted threat network status, capitalizing on data inputs from sources such as Modernized Intelligence Database (MIDB), Net-Centric Collaborative Targeting (NCCT), Joint Targeting Database (JTDB), Computer Network Operations Database (CNODB), NASIC Links and Nodes, and Integrated Broadcast Service (IBS). SPS

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675275 / <i>SUTER</i>
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provides a GUI that can be tailored to support the integration of ISR, kinetic, and non-kinetic composite target packages supporting COCOM and Component specified information superiority effects and objectives across the full spectrum of conflict from tactical operations to an Anti-Access Area Denial (A2AD) strategy.

FY 2016 funding is dedicated to upgrading the virtualized SOA for the operational SPS system delivered in FY 2015, improvements in core technology security/ Information Assurance, and addition of additional systems and data types.

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> SUTER Program System (SPS) Software Development	-	-	2.316
<b>Description:</b> Planned efforts include development and fielding of SPS software development.			
<b>FY 2014 Accomplishments:</b> Started SPS software development which focused on machine-to-machine (M2M) interface capability and Service Orientated Architecture (SOA) upgrades. These upgrades reduced time to pull information from other database sources, improve security management, and allow more flexibility for operational decision makers. Funding to initiate these efforts was provided by Core Technology project within the NCCT PE. Obligation was less than \$2.0M.			
<b>FY 2015 Plans:</b> Continue the SPS software development which focuses on M2M interface capability and SOA upgrades. These upgrades will reduce time to pull information from other database sources, improve security management, and allow more flexibility for operational decision makers. Funding to continue these efforts was provided by Core Technology project within the NCCT PE. Obligation was less than \$2.0M.			
<b>FY 2016 Plans:</b> Will continue to support the latest SPS software development which focuses on M2M interface capability and SOA upgrades. These upgrades will reduce time to pull information from other database sources, improve security management, and allow more flexibility for operational decision makers across the spectrum of conflict.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	2.316

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• OPAF: BA03: 832070: <i>Intelligence Communications Equipment</i>	2.900	2.974	2.418	-	2.418	3.358	3.305	3.111	3.166	Continuing	Continuing

**Remarks**

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	Project (Number/Name) 675275 / <i>SUTER</i>

**D. Acquisition Strategy**

The SPS capabilities are developed, maintained and sustained with baseline/incremental upgrades plus any Quick Reaction Capability (QRC) developments acquired through the 645th Aeronautical System Group (BIG SAFARI System Program Office) in accordance with the BIG SAFARI Program Management Directive (PMD) and the BIG SAFARI Class Justification and Authorization (J&A) documents for acquisition of supplies and services. 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 -- developmental engineering to system retirement ("cradle to grave" support concept). 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/evolving Combatant Commander (COCOM) requirements. 645th AESG, Wright Patterson AFB OH, manages the Cost Plus Fixed Fee (CPFF) contracts used to develop SPS. 645th AESG will develop SPS software on common hardware for systems and platforms designated to field this ISR capability. Individual program management offices may contract directly with their prime contractors or through the 645th AESG for integration of these ISR capabilities on their respective systems and platforms.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675275 / <i>SUTER</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SPS Software	SS/CPFF	Analyst Warehouse, LLC : Baltimore, MD	-	-		-		2.081	May 2015	-		2.081	Continuing	Continuing	6.345
<b>Subtotal</b>			-	-		-		2.081		-		2.081	-	-	6.345

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development Test	SS/CPFF	Analyst Warehouse, LLC : Baltimore, MD	-	-		-		0.235	May 2015	-		0.235	Continuing	Continuing	0.791
<b>Subtotal</b>			-	-		-		0.235		-		0.235	-	-	0.791

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	-	2.316	-	2.316	-	-	7.136

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675275 / <i>SUTER</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
SPS Increment 1	[REDACTED]																											
SPS Increment 2	[REDACTED]												[REDACTED]															

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305221F / <i>Network-Centric Collaborative Targeting</i>	<b>Project (Number/Name)</b> 675275 / <i>SUTER</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SPS Increment 1	1	2014	4	2015
SPS Increment 2	4	2015	1	2018



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	33.896	32.015	43.986	-	43.986	42.760	41.790	42.586	48.396	Continuing	Continuing
674819: <i>Common Data Link (CDL)</i>	-	33.896	32.015	43.986	-	43.986	42.760	41.790	42.586	48.396	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Common Data Link Executive Agent (CDL EA) provides the DoD standard for interoperable, multi-service, multi-agency, Intelligence, Surveillance, and Reconnaissance (ISR) datalinks for 10,000+ DoD manned/unmanned airborne and ground platforms. As the DoD CDL EA, the Air Force is responsible for cross-service application of CDL RDT&E Military Intelligence Program (MIP) funds facilitating compliance to Congressional and DoD mandates. The EA develops, modifies, distributes, and maintains specifications for the CDL waveform family; ensuring design configuration control, commonality, and interoperability among ISR platforms. Additionally, funds support managing resources allocated for development, maturation, and migration of CDL technologies.

CDL EA enables compliance with OSD and Congressional mandates to effectively utilize spectrum, use approved cryptographic equipment, and provide direct support to current operations. CDL is a vital link in DoD's existing and emerging communication architectures, providing flexibility to accommodate Command and Control (C2) data and myriad types of Signals Intelligence (SIGINT), Geospatial Intelligence (GEOINT), and Full-Motion Video (FMV) data. The CDL specifications permit current and future ISR asset operations worldwide by providing sensor data directly via point-to-point broadcast to ground sites, airborne platforms and dismounted users. Also, CDL provides the capability to relay data via air-to-air or compatible satellite links when the asset and ground site are not in line-of-sight.

CDL EA's research and development activities support a broad swath of tactical, operational, and strategic ISR users and include achieving higher data rates, multi-access and multi-node network management, crypto modernization, advancements needed to operate in contested environments, terminal and antenna design enhancements, operations in other spectral bands, and improving spectrum efficiency. Further, CDL development improves large area surveillance missions while supporting continuous improvements and implementation of line-of-sight platform and CDL terminal Command and Control (C2), plus increased ISR (C2ISR) capabilities. Activities also include studies and analysis to support current and future requirements documentation, program planning and execution. CDL prototype terminal designs provide for future technology insertion and reduce non-recurring engineering and life-cycle costs to the user.

In addition, the Gigabit Encryption thrust enables CDL to develop a miniaturized gigabit rate Communication Security (COMSEC) device capable of managing CDL data. The miniaturized COMSEC device will allow faster throughput while reducing Size, Weight, and Power (SWaP) 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.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	33.899	36.137	58.279	-	58.279
Current President's Budget	33.896	32.015	43.986	-	43.986
Total Adjustments	-0.003	-4.122	-14.293	-	-14.293
• Congressional General Reductions	-	-0.122			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.003	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-14.293	-	-14.293

**Change Summary Explanation**

FY 2015: Congressional Directed Reductions (-\$4M) due to improving funds management: forward financing.

FY 2016: Other Adjustment Row (-\$14.293M) due to higher AF priorities.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Common Data Link (CDL) Technology Advancement	24.860	18.229	31.986	-	31.986
<b>Description:</b> CDL evolutionary terminal development, advanced technology insertion, demonstrations and studies per CDL Integrated Product Team (IPT) direction to the CDL Executive Agent (CDL EA).					
<b>FY 2014 Accomplishments:</b> Continued development and testing of Higher Data Rates to existing and emerging terminals, while also prototyping terminal development that combines Size, Weight and Power (SWaP) improvements with higher data rate capability. Continued development of technology that allows for adapting and testing of networking, as well as more effective ground and lightweight airborne terminal components. Moved forward with development of multispectral operations flexibility, increased spectrum efficiency and integration of improved transmission components. Continued development of enhanced, CDL-based ISR communications capabilities across multiple platforms and rapid prototyping efforts. Continued support of emerging communication backbone architecture development across air, space and terrestrial layers, to include: agile high capacity data transport, assured communications and multi-mode access networks.					
<b>FY 2015 Plans:</b>					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p>Continue development and testing of Higher Data Rates to existing and emerging terminals, while also prototyping terminal development that combines Size, Weight and Power (SWaP) improvements with higher data rate capability. Continue development of technology that allows for adapting and testing of networking, as well as more effective ground and lightweight airborne terminal components. Move forward with development of multispectral operations flexibility, increased spectrum efficiency and integration of improved transmission components. Continue development of enhanced, CDL-based ISR communications capabilities across multiple platforms and rapid prototyping efforts. Continue support of emerging communication backbone architecture development across air, space and terrestrial layers, to include: agile high capacity data transport, assured communications and multi-mode access networks.</p> <p><b>FY 2016 Base Plans:</b> Will continue development and testing of Higher Data Rates to existing and emerging terminals, while also prototyping terminal development that combines Size, Weight and Power (SWaP) improvements with higher data rate capability. Will continue development of technology that allows for adapting and testing of networking, as well as more effective ground and lightweight airborne terminal components. Will move forward with development of multispectral operations flexibility, increased spectrum efficiency and integration of improved transmission components. Will continue development of enhanced, CDL-based ISR communications capabilities across multiple platforms and rapid prototyping efforts. Will continue support of emerging communication backbone architecture development across air, space and terrestrial layers, to include: agile high capacity data transport, assured communications and multi-mode access networks.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>					
<p><b>Title:</b> Common Data Link (CDL) Specification Maintenance and Development</p> <p><b>Description:</b> CDL specification testing, maintenance, development, validation, configuration control, and distribution per CDL Integrated Product Team (IPT) direction to CDL Executive Agent (EA).</p> <p><b>FY 2014 Accomplishments:</b> Continued research and development upgrades of current and future specification employment profiles to include the adding of capabilities required to support the Joint Aerial Layer Network (JALN) High Capacity Backbone (HCB) and other emerging operational capabilities. Refined spectrally efficient CDL waveform specification, while gathering requirements and planning for future A2AD enhancements. Continued to work with CDL industry partners and DoD Services to document, validate and implement common terminal control</p>	7.036	11.586	5.000	-	5.000

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
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interfaces through the use of commercially recognized standards. Maintained configuration control of the CDL architecture, standards, specifications and modules. Made software enhancements to CDL test equipment to ensure compliance testing is done with the latest, validated version of CDL specifications.

**FY 2015 Plans:**  
 Continue research and development upgrades of current and future specification employment profiles to include the adding of capabilities required to support the Joint Aerial Layer Network (JALN) High Capacity Backbone (HCB) and other emerging operational capabilities. Continue development of spectrally efficient CDL waveform specification, while planning for future A2AD enhancements. Continue to work with CDL industry partners and DoD Services to document, validate and implement common terminal control interfaces through the use of commercially recognized standards. Maintain configuration control of the CDL architecture, standards, specifications and modules. Continue development of CDL test equipment capable of compliance testing to the latest, validated version of CDL specifications.

**FY 2016 Base Plans:**  
 Will continue to research and development upgrades of current and future specification employment profiles that include the adding of capabilities required to support the Joint Aerial Layer Network (JALN) High Capacity Backbone (HCB), A2AD requirements, and other emerging operational capabilities. Will continue the development of spectrally efficient CDL waveform specification, while gathering requirements and planning for future mesh networking enhancements. Will continue to work with CDL industry partners and DoD Services to document, validate and implement common terminal control interfaces through the use of commercially recognized standards. Will maintain configuration control of the CDL architecture, standards, specifications and modules. Will continue the development of CDL test equipment capable of compliance testing to the latest, validated version of CDL specifications.

**FY 2016 OCO Plans:**  
 N/A

<b>Title:</b> Gigabit Encryption	2.000	2.200	7.000	-	7.000
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**Description:** Develop a miniaturized gigabit rate COMSEC device capable of handling CDL data rates. Miniaturizing COMSEC components will enable faster data throughput (greater than 12 GBPS) and reduce size, weight, and power. Once developed, CDL users will have to procure COMSEC components and fund installation/integration.

**FY 2014 Accomplishments:**

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Initiated the development effort to build the gigabit encryption device to be fielded on numerous platforms. This device allowed faster data throughput and reduced size, weight and power constraints.  <b>FY 2015 Plans:</b> Continue the development effort to build the gigabit encryption device to be fielded on numerous platforms. This device allows faster data throughput and reduced size, weight and power constraints.  <b>FY 2016 Base Plans:</b> Will continue the development effort for small form factor modular COMSEC devices capable of gigabit rates. Will conduct prototyping and testing of the second generation crypto core and design/development of the third generation crypto core.  <b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	33.896	32.015	43.986	-	43.986

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

**Remarks**

**E. Acquisition Strategy**  
 The Air Force, designated as the Common Data Link (CDL) Executive Agent, supported by each of the Services' CDL program's Service laboratories, the Airborne Network Division (AFLCMC/HNA), and the Defense Information Systems Agency (DISA), provide for development of interoperable ISR data links as mandated by the Assistant Secretary of Defense (Networks and Information Integration) (ASD(NII)) policy. Once CDL technology development matures, platforms are responsible for program CDL procurement, National Security Agency (NSA), Joint Interoperability Test Command (JITC), and DISA certifications, integration, and installation. Acquisition strategy varies by contract. When possible, contracts are awarded under 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>	<b>Project (Number/Name)</b> 674819 / <i>Common Data Link (CDL)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AF Gigabit Plus, AF IA Modernization, Army Spec, Army Through the Rotors, Network Management	C/CPFF	L-3 Communications : Salt Lake City, UT	-	4.850	Feb 2014	5.401	Feb 2015	8.957	Feb 2016	-		8.957	Continuing	Continuing	-
Advanced Waveform Validation, Digital Beam Effort	C/CPFF	Cubic : San Diego, CA	-	2.060	Jan 2014	1.300	Feb 2015	-		-		-	Continuing	Continuing	-
Multi-Access and Assured Communications Development	C/Various	Various : Various,	-	-		3.761	Dec 2014	-		-		-	Continuing	Continuing	-
Marine CDL for Tactical UAS	C/Various	Various : Various,	-	7.609	Feb 2014	6.200	Feb 2015	8.000	Feb 2016	-		8.000	Continuing	Continuing	-
Anti-Jam	C/CPFF	Boeing : Huntington Beach, CA	-	-		1.500	Feb 2015	-		-		-	Continuing	Continuing	-
Terminals Database & Enterprise Roadmap	C/CPFF	Booz Allen : McClean, VA	-	-		1.850	Nov 2014	0.400	Jan 2016	-		0.400	Continuing	Continuing	-
Compliance Test Tool	C/Various	Various : Various,	-	-		1.378	Dec 2014	3.000	Dec 2015	-		3.000	Continuing	Continuing	-
Under Threshold Combined	Various	Various : Various,	-	3.686	Dec 2013	-		8.190	Dec 2015	-		8.190	Continuing	Continuing	-
<b>Subtotal</b>			-	18.205		21.390		28.547		-		28.547	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Special studies, analysis, and engineering services	SS/CPFF	Johns Hopkins University/Applied Physics Lab : Laurel, MD	-	1.900	Feb 2014	0.500	Jan 2015	0.539	Jan 2016	-		0.539	Continuing	Continuing	-
Service Tech Support & Spec Development	MIPR	Various : Various,	-	4.388	Jan 2014	2.486	Jan 2015	6.397	Jan 2016	-		6.397	Continuing	Continuing	-
<b>Subtotal</b>			-	6.288		2.986		6.936		-		6.936	-	-	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>	<b>Project (Number/Name)</b> 674819 / <i>Common Data Link (CDL)</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Joint Interoperability Test Center (JITC)	MIPR	JITC : Fort Huachuca, AZ	-	1.145	Feb 2014	1.000	Jan 2015	1.078	Jan 2016	-		1.078	Continuing	Continuing	-
46 Test Squadron	PO	46 TS/OGEX : Eglin AFB, FL	-	0.298	Feb 2014	0.286	Feb 2015	0.308	Feb 2016	-		0.308	Continuing	Continuing	-
<b>Subtotal</b>			-	1.443		1.286		1.386		-		1.386	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA- MITRE Engineering Support (FFRDC)	SS/T&M	MITRE Corp. : Bedford, MA	-	0.675	Oct 2013	0.237	Oct 2014	0.255	Oct 2015	-		0.255	Continuing	Continuing	-
PMO/Service- MITRE Engineering Direct Mission Support (FFRDC)	SS/T&M	MITRE Corp. : Bedford, MA	-	4.840	Oct 2013	3.390	Oct 2014	3.924	Oct 2015	-		3.924	Continuing	Continuing	-
PMA - PASS Financial and PM Support (A&AS)	C/CPFF	PE Systems : Littleton, MA	-	1.067	Feb 2014	0.851	Feb 2015	0.917	Feb 2016	-		0.917	Continuing	Continuing	-
PMA - Under Threshold Program Mgmt/Tech Support	Various	Various : Various,	-	1.378	Apr 2014	1.875	Dec 2014	2.021	Dec 2015	-		2.021	Continuing	Continuing	-
<b>Subtotal</b>			-	7.960		6.353		7.117		-		7.117	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		-	33.896	32.015	43.986	43.986	-	-	-

**Remarks**





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305236F / <i>Common Data Link Executive Agent (CDL EA)</i>	<b>Project (Number/Name)</b> 674819 / <i>Common Data Link (CDL)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CDL Technology Advancement	1	2014	4	2020
- CDL Waveform RDTE	1	2014	4	2020
- Terminal Component Evolution and Test	1	2014	1	2019
- High Data Rate Terminal Development	1	2014	2	2016
- Low SWAP (SUAS) Prototype Terminal Development	2	2014	2	2017
- Assured Comm/Multi-Access Studies	3	2014	2	2017
- CDL Network Management Modernization	1	2019	4	2020
CDL Specification Maintenance and Development	1	2014	4	2020
- CDL Spec Development and Validation (Multi-Access, A2AD)	3	2017	4	2020
- Specification CM, Maintenance and Update (BE, Capstone)	1	2014	2	2016
- Development/Test Equipment (CWCT, RIL, CCI)	1	2014	4	2018
Gigabit Encryption	1	2014	4	2018
- US and Coalition Releasable Crypto Modules	1	2014	3	2015
- Multi-algorithm US/Coalition Crypto Modules	3	2015	3	2017
- Multi-sensor Aware/Shared State Crypto Modules	2	2016	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	221.589	232.851	197.486	-	197.486	39.292	-	-	-	-	691.218
676001: NATO AGS	-	221.589	232.851	197.486	-	197.486	39.292	-	-	-	-	691.218
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

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

U.S. participation in NATO AGS was ratified by Secretary of Defense (SECDEF) signature/approval of the NATO AGS Program Memorandum of Understanding (PMOU) in June 2009. The PMOU went into effect in Sept 2009 when 15 nations, including the United States, financially committed to support procurement and delivery of the NATO Commander's number one priority to the warfighter. Canada withdrew in 2011 and Poland joined in 2014 keeping the participating nations at 15.

In FY 2012, OSD transferred the NATO AGS program to the U.S. Air Force (USAF) for management and execution. The NATO AGS project funds the U.S. share of the cost for NATO to acquire an air-to-ground ground surveillance capability, improvements to the radar, and U.S. support of NATO AGS-related activities. Operations and continuing support will be funded through a future NATO Military Commanders' Capability Package funded within the NATO Security Investment Program (NSIP).

The AGS system will be a NATO-owned and operated airborne ground surveillance capability that provides continuous, wide area surveillance information in all weather conditions for use at the strategic, operational and tactical levels of command. Interoperable with other national assets, AGS will provide NATO decision makers with near real time, continuous information and situational awareness concerning friendly, neutral, and opposing ground and maritime forces to support mission planning and execution, including force protection and targeting.

The NATO AGS Program includes: an air segment consisting of five (5) NATO-developed air vehicles, incorporating elements of the United States Navy (USN) Triton (previously Broad Area Maritime Surveillance (BAMS)) command and control architecture and the U.S. Multi-Platform Radar Technology Insertion Program (MP-RTIP) radar; a unique exportable configuration; a ground segment for air vehicle command and control and data exploitation and distribution that consists of fixed-based site and transportable/mobile ground stations; operation of an international management organization; development of operations and support concepts; and definition and establishment of an initial support capability. As part of the U.S. government agreement with NATO AGS Management Agency (NAGSMA), the U.S. will integrate Maritime Moving Target and Inverse Synthetic Aperture Radar capability into the MP-RTIP radar for NATO AGS. This design and development includes correcting deficiencies, flight testing on the modes and system level performance validation.

System level configuration changes include a unique configuration to allow for export of the system.

Support to NATO to maintain International Agreements allows for continuation of development.

NATO Alliance Ground Surveillance (AGS) is an Office of the Secretary of Defense (OSD) special interest program.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS
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Deliveries are planned for 2016-2017. Follow-on sustainment and operations will be supported by all 28 NATO nations through their contributions of funding to the program. Mission elements will support two orbits. The Main Operating Base (MOB) air vehicles and mission Command and Control (C2) will be located at Sigonella Air Base, Italy. Exploitation at the MOB will be developed by Selex. EADS and Selex will develop the transportable and mobile general ground stations.

The program, managed by NAGSMA, is composed of design, development, demonstration, and production, as well as Initial In-Service Support (IISS). While the current program includes IISS, the current Direct Commercial Sale (DCS) contract with Northrop Grumman does not include these tasks.

The DCS contract between Northrop Grumman and NAGSMA was signed on 20 May 2012. This PE funds the U.S. cost share for the acquisition of the NATO airborne ground surveillance capability as well as the cost share associated with the IISS. IISS and In-Service Support (ISS) will be contracted under separate action. It is anticipated that ISS costs will be commonly funded through a future NATO Military Commanders' Capability Package, using the NATO Security Investment Program (NSIP). This funding also includes developmental activity for MP-RTIP to include additional functionality and configuration requirements, studies and analysis related to mission security and exportability, and current and future program planning, project execution, engineering, and program management support to NATO.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	221.589	232.851	138.400	-	138.400
Current President's Budget	221.589	232.851	197.486	-	197.486
Total Adjustments	-	-	59.086	-	59.086
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	59.086	-	59.086

**Change Summary Explanation**

FY16 Base increase for NATO AWACS.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Design / Development of NATO Alliance Ground Surveillance (AGS)	174.774	217.882	118.440	-	118.440

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
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<p><b>Description:</b> U.S. contribution to NATO for AGS development acquisition and initial fielding.</p> <p>Supports configuration changes at a system level.</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Continued U.S. contribution to NATO for AGS development acquisition and initial fielding.</li> <li>- Supported configuration changes at a system level.</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue U.S. contribution to NATO for AGS development acquisition and initial fielding.</li> <li>- Supports configuration changes at a system level.</li> </ul> <p><b>FY 2016 Base Plans:</b></p> <ul style="list-style-type: none"> <li>- Will continue U.S. contribution to NATO for AGS development acquisition and initial fielding.</li> <li>- Will Support configuration changes at a system level.</li> </ul> <p><b>FY 2016 OCO Plans:</b></p> <p>N/A</p>					
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<p><b>Title:</b> Design/Development of Maritime Modes</p> <p><b>Description:</b> Supports development and flight testing of maritime modes capability for RTIP and additional configuration changes that cannot be performed under the direct commercial sale contract between Northrop Grumman and NAGSMA.</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Supported development and flight testing of maritime modes capability</li> <li>- Supported additional configuration changes that cannot be performed under the direct commercial sale contract between Northrop Grumman and NAGSMA.</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue to support development of maritime modes capability and additional configuration changes that cannot be performed under the direct commercial sale contract between Northrop Grumman and NAGSMA.</li> <li>- Flight testing to be completed in Q1 FY15.</li> </ul> <p><b>FY 2016 Base Plans:</b></p>	44.862	9.444	18.400	-	18.400
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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force			<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS			
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>					
Will continue to support development of maritime modes capability and additional configuration changes that cannot be performed under the direct commercial sale contract between Northrop Grumman and NAGSMA.					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Title:</b> Technical Support for NATO Alliance Ground Surveillance (AGS)					
<b>Description:</b> Provide engineering and logistics support for NATO AGS development and initial fielding. Establish and support a program office for U.S. Government support to NATO for AGS development and initial fielding. Serve as interface to the U.S. program offices and the prime contractor for NATO AGS capability.					
<b>FY 2014 Accomplishments:</b> - Continued engineering and logistics support for NATO AGS development and initial fielding. - Supported a program office for U.S. Government support to NATO for AGS development and initial fielding. - Served as interface to the U.S. program offices and the prime contractor for NATO AGS capability.					
<b>FY 2015 Plans:</b> - Continue engineering and logistics support for NATO AGS development and initial fielding. - Continue support of a program office for U.S. Government support to NATO for AGS development and initial fielding. - Continue to serve as interface to the U.S. program offices and the prime contractor for NATO AGS capability.					
<b>FY 2016 Base Plans:</b> - Will continue engineering and logistics support for NATO AGS development and initial fielding. - Will continue support of a program office for U.S. Government support to NATO for AGS development and initial fielding. - Will continue to serve as interface to the U.S. program offices and the prime contractor for NATO AGS capability.					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Title:</b> Test and Evaluation Support for NATO Alliance Ground Surveillance (AGS)					
<b>Description:</b> Provide testing and evaluation via the Air Force Flight Test Center.					
<b>FY 2014 Accomplishments:</b>					
	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
	1.681	1.345	1.385	-	1.385
	0.272	4.180	0.175	-	0.175

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Completed detailed test and evaluation planning with the Air Force Flight Test Center. <b>FY 2015 Plans:</b> Complete detailed test and evaluation planning with the Air Force Flight Test Center. <b>FY 2016 Base Plans:</b> Will complete detailed test and evaluation planning with the Air Force Flight Test Center. <b>FY 2016 OCO Plans:</b> N/A					
<b>Title:</b> Support to NATO to maintain International Agreements <b>Description:</b> Provides continuation of development <b>FY 2014 Accomplishments:</b> N/A <b>FY 2015 Plans:</b> N/A <b>FY 2016 Base Plans:</b> Provide continuation of development <b>FY 2016 OCO Plans:</b> N/A	-	-	59.086	-	59.086
<b>Accomplishments/Planned Programs Subtotals</b>	221.589	232.851	197.486	-	197.486

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTE: BA 07: PE 0305220F: RQ-4 UAV	120.180	244.514	316.148	-	316.148	291.794	269.718	287.012	292.178	Continuing	Continuing
<b>Remarks</b>											

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force Date: February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS
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**E. Acquisition Strategy**  
The U.S. signed the Program Memorandum of Understanding (PMOU) committing the U.S. Government to NATO-derived cost shares of the Alliance Ground Surveillance (AGS) prime contract for design, development, demonstration, and initial production of the NATO AGS system. The system will be delivered via a fixed price direct commercial sale contract between Northrop Grumman Integrated Sensor Systems International, Incorporated (NGISSI) & NATO, which was signed on 20 May 2012. The program is managed by the NATO AGS Management Agency (NAGSMA).

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS	<b>Project (Number/Name)</b> 676001 / NATO AGS
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Design / Development of NATO AGS	SS/FFP	NATO AGS Management Agency : Brussels, Belgium,	-	166.201	Oct 2013	200.432	Oct 2014	118.440	Oct 2015	-		118.440	Continuing	Continuing	-
System Level Configuration Changes	SS/FFP	AFLCMC/WI : Wright Patterson, AFB, OH	-	8.573	Aug 2014	17.451	May 2015	-		-		-	Continuing	Continuing	-
Design / Development of RTIP	SS/FFP	AFLCMC/HB : Hanscom AFB, MA	-	44.862	Oct 2013	9.444	May 2015	18.400	Oct 2015	-		18.400	Continuing	Continuing	-
<b>Subtotal</b>			-	219.636		227.327		136.840		-		136.840	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technical Support for NATO AGS	SS/FFP	Multiple : Hanscom, WPAFB,	-	0.471	Apr 2014	0.542	Apr 2015	0.748	Apr 2016	-		0.748	Continuing	Continuing	-
Support International Agreements	SS/FFP	Multiple : Brussels,	-	-		-		59.086	Jan 2016	-		59.086	Continuing	Continuing	-
<b>Subtotal</b>			-	0.471		0.542		59.834		-		59.834	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test and Evaluation Support for NATO AGS	SS/FFP	Multiple : Hanscom, WPAFB, Edwards,	-	0.272	Apr 2014	4.180	Apr 2015	0.175	Apr 2016	-		0.175	Continuing	Continuing	-
<b>Subtotal</b>			-	0.272		4.180		0.175		-		0.175	-	-	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS	<b>Project (Number/Name)</b> 676001 / NATO AGS
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<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management Services for NATO AGS	SS/FFP	Multiple : Hanscom, WPAFB, Pax River,	-	1.210	Jul 2014	0.802	Jul 2015	0.637	Jul 2016	-		0.637	Continuing	Continuing	-
<b>Subtotal</b>			-	1.210		0.802		0.637		-		0.637	-	-	-
<b>Project Cost Totals</b>			-	221.589		232.851		197.486		-		197.486	-	-	-

**Remarks**  
 The Industrial Structure consists of Northrop Grumman (NGISSII) prime contractor, three subcontractors, and 15 participating nation industries that will receive direct work. There are no indirect offsets. The technical support of the NATO AGS program includes MITRE Engineering, U.S. Navy's Triton program office support, U.S. government travel, and supplies. The test and evaluation support of the NATO AGS program includes the AFMC 412 Test Wing support of Flight Testing and Frequency Management by the AFMC 88 CG. The management services support of the NATO AGS program includes Advisory & Assistance Services.



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305238F / NATO AGS	<b>Project (Number/Name)</b> 676001 / NATO AGS
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
IOC	1	2017	1	2017
FOC	3	2017	3	2017
Design and Development - NATO AGS	1	2014	1	2017
Design and Development - Maritime Mode	1	2014	3	2015
Test and Evaluation Support - NATO AGS	1	2014	3	2017
Flight Test - NATO AGS	3	2015	3	2016
Tech Support - NATO AGS	1	2014	4	2017
Aircraft Delivery - NATO AGS	4	2016	2	2017
Ground Station Delivery - NATO AGS	4	2016	3	2017

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / <i>Support to DCGS Enterprise</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	19.309	17.118	28.434	-	28.434	27.944	26.528	27.027	27.511	Continuing	Continuing
674826: <i>Common Imagery Ground / Surface Systems</i>	-	12.040	8.460	16.148	-	16.148	15.880	15.071	15.355	15.630	Continuing	Continuing
675265: <i>Common Imagery Processor (CIP)</i>	-	7.269	8.658	12.286	-	12.286	12.064	11.457	11.672	11.881	Continuing	Continuing

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

This Program Element contains Distributed Common Ground/Surface System (DCGS) Family of Systems interoperability efforts for which the AF is lead service. The DCGS Family of Systems, including AF DCGS, was directed to migrate to a net-centric DoD Intelligence, Surveillance and Reconnaissance (ISR) enterprise enabling the Services to operate and share intelligence products more effectively in a joint environment. All Services must pursue a common path based on a set of common enterprise services consistent with the Department's net-centric vision while maintaining flexibility to support the full range of warfighter missions. Specifically, DoD charged the Air Force to lead the development, upgrade, integration, and test of common DCGS Integration Backbone (DIB) enterprise services. The DIB is a set of enterprise standards and services that enable interoperability and component reuse. All the military services are mandated to incorporate DIB interoperability standards and commit to DIB architecture as the migration path to common DCGS enterprise services.

The Distributed Common Ground Systems-Imagery (DCGS-I) Testbed is an integration and test environment, used by the Services and Agency DCGS program offices to conduct integration of DCGS components and test interoperability interfaces with new sensors, applications, and net-centric operations. This testbed also supports the integration and testing of DoD DCGS components prior to introduction into the operational environment. Periodic upgrades ensure the Testbed stays current with DCGS standards and architecture.

Support to OUSD(I), AF DCGS, and NATO interoperability efforts is also provided through this program element. This includes development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.

The Common Imagery Processor effort develops a common imagery sensor processing capability within the DCGS architecture. The imagery processor accepts airborne imagery data, processes it into an exploitable format, and provides it to other elements within the weapon system and the DCGS Enterprise. Current efforts are transitioning the legacy imagery processor from a hardware/software capability to a virtual software capability, thereby improving enterprise processing capabilities. Efforts continue to keep the capability on track to handle the current sensors. Activities also include testing, development, and demonstrations integrating updated and new/emerging sensors into DCGS.

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

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / <i>Support to DCGS Enterprise</i>
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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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	19.309	20.218	28.623	-	28.623
Current President's Budget	19.309	17.118	28.434	-	28.434
Total Adjustments	-	-3.100	-0.189	-	-0.189
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.100			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.189	-	-0.189

**Change Summary Explanation**

In FY15, \$3.1M cut by Congress due for forwarding financing.  
 In FY16, \$.189M taken for higher AF priorities.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305240F / Support to DCGS Enterprise				<b>Project (Number/Name)</b> 674826 / Common Imagery Ground / Surface Systems			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
674826: <i>Common Imagery Ground / Surface Systems</i>	-	12.040	8.460	16.148	-	16.148	15.880	15.071	15.355	15.630	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

DoD charged the AF with developing, upgrading and managing the Distributed Common Ground/Surface System (DCGS) Integration Backbone (DIB) for all the Services to provide common DCGS enterprise services and interoperability at the data level. The DIB is a set of enterprise standards and services that enable interoperability and component reuse. Using the DIB, the Air Force Distributed Common Ground System (AF DCGS) modernization will transform AF DCGS from its existing proprietary system to a net-centric service oriented architecture.

The DCGS Family of Systems, including AF DCGS, was directed to migrate to a net-centric DoD Intelligence, Surveillance, and Reconnaissance (ISR) enterprise enabling the Services to operate and share intelligence products more effectively in a joint environment. All Services must pursue a common path based on common enterprise services consistent with the Department's net-centric vision, while maintaining flexibility to support the full range of warfighter missions. Also, all Services are mandated to incorporate DIB interoperability standards and commit to DIB architecture as the migration path to common DCGS enterprise services.

The Distributed Common Ground Systems-Imagery (DCGS-I) Testbed is an integration and test environment, used by the Services and Agency DCGS program offices to conduct integration of DCGS components and test interoperability interfaces with new sensors, applications, and net centric operations. This testbed also supports the integration and testing of DoD DCGS components prior to introduction into the operational environment. Periodic upgrades ensure the Testbed stays current with DCGS standards and architecture.

The AF-sponsored DIB System Program Office also participates in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Distributed Common Ground / Surface System (DCGS) Integration Backbone	8.955	4.389	12.021
<b>Description:</b> Upgrade, improve and manage the DCGS Integration Backbone (DIB).			
<b>FY 2014 Accomplishments:</b> Continued to upgrade, improve and manage the DIB.			
<b>FY 2015 Plans:</b> Continuing to upgrade, improve and manage the DIB.			
<b>FY 2016 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / Support to DCGS Enterprise	<b>Project (Number/Name)</b> 674826 / Common Imagery Ground / Surface Systems		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Will continue to upgrade, improve and manage the DIB.				
<p><b>Title:</b> Distributed Common Ground / Surface System-Imagery (DCGS-I) Testbed</p> <p><b>Description:</b> Continue DCGS-I Testbed development and upgrades. Continue to use the Testbed to conduct DIB and DCGS enterprise tests.</p> <p><b>FY 2014 Accomplishments:</b> Continued DCGS-I Testbed development and upgrades. Continued to use the Testbed to conduct DIB and DCGS enterprise tests.</p> <p><b>FY 2015 Plans:</b> Continuing DCGS-I Testbed development and upgrades. Continuing to use the Testbed to conduct DIB and DCGS enterprise tests.</p> <p><b>FY 2016 Plans:</b> Will continue to develop and upgrade the DCGS-I Testbed and use for DIB and DCGS enterprise tests.</p>		1.184	1.871	1.927
<p><b>Title:</b> Support to Distributed Common Ground / Surface System (DCGS) Enterprise</p> <p><b>Description:</b> Provide support to OUSD(I), AF DCGS and NATO Interoperability Enterprise efforts.</p> <p><b>FY 2014 Accomplishments:</b> Continued to provide support to OUSD(I), AF DCGS and NATO Interoperability Enterprise efforts.</p> <p><b>FY 2015 Plans:</b> Continuing to provide support to OUSD(I), AF DCGS and NATO Interoperability Enterprise efforts.</p> <p><b>FY 2016 Plans:</b> Will continue to provide support to OUSD(I), AF DCGS and NATO Interoperability Enterprise efforts.</p>		1.901	2.200	2.200
<b>Accomplishments/Planned Programs Subtotals</b>		12.040	8.460	16.148
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / <i>Support to DCGS Enterprise</i>	<b>Project (Number/Name)</b> 674826 / <i>Common Imagery Ground / Surface Systems</i>

**D. Acquisition Strategy**

The Air Force uses an evolutionary acquisition approach with version releases and periodic upgrades to develop, field, and upgrade the system and structure contracts for the improved capabilities through full and open competition to the maximum extent possible.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / Support to DCGS Enterprise	<b>Project (Number/Name)</b> 674826 / Common Imagery Ground / Surface Systems
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DIB Modernization, Integration, DT and Interoperability	C/Various	Various : Various,	-	8.096	May 2014	3.535	Apr 2015	11.268	Apr 2016	-		11.268	Continuing	Continuing	-
Testbed Modernization and Licenses	C/Various	Various : Various,	-	1.184	May 2014	1.871	Mar 2015	1.927	Apr 2016	-		1.927	Continuing	Continuing	-
<b>Subtotal</b>			-	9.280		5.406		13.195		-		13.195	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Engineering	C/CPFF	MITRE : Bedford, MA	-	0.288	Oct 2013	0.159	Oct 2014	-		-		-	-	0.447	-
Management Services	C/CPFF	Various : Bedford, MA	-	0.185	Apr 2014	0.281	Apr 2015	0.289	Apr 2016	-		0.289	Continuing	Continuing	-
PMA	Various	Various : Various,	-	0.386	Feb 2014	0.414	Mar 2015	0.464	Mar 2016	-		0.464	Continuing	Continuing	-
DCGS Team Support for OUSD(I)	C/Various	Various : Various,	-	1.901	Jul 2014	2.200	Jul 2015	2.200	Jul 2016	-		2.200	Continuing	Continuing	-
<b>Subtotal</b>			-	2.760		3.054		2.953		-		2.953	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force								<b>Date:</b> February 2015					
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0305240F / Support to DCGS Enterprise				<b>Project (Number/Name)</b> 674826 / Common Imagery Ground / Surface Systems					
	<b>Prior Years</b>	<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	-	12.040		8.460		16.148		-		16.148	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / Support to DCGS Enterprise	<b>Project (Number/Name)</b> 674826 / Common Imagery Ground / Surface Systems

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Field DIB 2014	██████████																											
Field DIB 2015					██████████																							
Field DIB 2016									██████████																			
Field DIB 2017													██████████															
Field DIB 2018																	██████████											
Field DIB 2019																					██████████							
Field DIB 2020																									██████████			

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / Support to DCGS Enterprise	<b>Project (Number/Name)</b> 674826 / Common Imagery Ground / Surface Systems

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Field DIB 2014	1	2014	4	2014
Field DIB 2015	1	2015	4	2015
Field DIB 2016	1	2016	4	2016
Field DIB 2017	1	2017	4	2017
Field DIB 2018	1	2018	4	2018
Field DIB 2019	1	2019	4	2019
Field DIB 2020	1	2020	4	2020

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / Support to DCGS Enterprise	<b>Project (Number/Name)</b> 675265 / Common Imagery Processor (CIP)
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675265: Common Imagery Processor (CIP)	-	7.269	8.658	12.286	-	12.286	12.064	11.457	11.672	11.881	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Imagery Processing effort develops imagery sensor processing capability within the DCGS architecture. The imagery processor accepts airborne imagery data, processes it into an exploitable format, and provides it to other elements within the weapon system and/or the DCGS Enterprise. Current efforts are transitioning the legacy imagery processor from a hardware/software capability to a virtual software capability, thereby improving enterprise processing capabilities. Efforts continue to keep the capability on track to handle the current sensors. Activities also include testing, development, and demonstrations integrating updated and new/emerging sensors into DCGS.

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> Imagery Processor	7.269	8.658	12.286
<b>Description:</b> Continue to develop the imagery processor to keep pace with growing sensor baseline.			
<b>FY 2014 Accomplishments:</b> Continued development of imagery processing capability to keep pace with growing sensor baseline.			
<b>FY 2015 Plans:</b> Continuing to develop imagery processing capability to keep pace with growing sensor baseline. Centralizing imagery processing at ingest locations			
<b>FY 2016 Plans:</b> Will continue to develop imagery processing capability to keep pace with growing sensor baseline. Will continue centralizing imagery processing at ingest locations.			
<b>Accomplishments/Planned Programs Subtotals</b>	7.269	8.658	12.286

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

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPAF: BA07: Line Item # 846080: Support to DCGS Enterprise	18.471	25.187	25.619	-	25.619	30.114	24.350	24.729	22.038	Continuing	Continuing

**Remarks**

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / <i>Support to DCGS Enterprise</i>	<b>Project (Number/Name)</b> 675265 / <i>Common Imagery Processor (CIP)</i>

**D. Acquisition Strategy**

For imagery processing the Air Force uses an evolutionary acquisition approach with blocks (increments) and spirals to develop, field, and upgrade the system and structure contracts for the improved capabilities through full and open competition to the maximum extent possible.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / Support to DCGS Enterprise	<b>Project (Number/Name)</b> 675265 / Common Imagery Processor (CIP)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Imagery Processing Software Development	C/CPAF	Various; Various :	-	7.071	Mar 2014	8.658	Mar 2015	12.286	Mar 2016	-		12.286	Continuing	Continuing	-
<b>Subtotal</b>			-	7.071		8.658		12.286		-		12.286	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA	Various	Various : Various,	-	0.198	Nov 2013	-		-		-		-	-	0.198	-
<b>Subtotal</b>			-	0.198		-		-		-		-	-	0.198	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	7.269	8.658	12.286	-	12.286	-	-	-

**Remarks**





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305240F / Support to DCGS Enterprise	<b>Project (Number/Name)</b> 675265 / Common Imagery Processor (CIP)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Software Baseline Release (3.32)	2	2014	3	2014
Software Baseline Release (3.34)	4	2014	1	2015
Software Baseline Release (3.36)	2	2015	3	2015
Software Baseline Release (3.38)	4	2015	1	2016
Software Baseline Release (3.40)	2	2016	3	2016
Software Baseline Release (3.42)	4	2016	1	2017
Software Baseline Release (3.44)	2	2017	3	2017
Software Baseline Release (3.46)	4	2017	1	2018
Sensors - Evolutionary Development	1	2014	4	2018
Standards - Evolutionary Development	1	2014	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / <i>GPS III Space Segment</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	1,710.414	195.950	211.907	180.902	-	180.902	154.630	76.731	78.176	79.575	170.134	2,858.419
676007: <i>SAR- GPS</i>	3.938	2.583	1.434	1.290	-	1.290	1.308	1.333	1.357	1.381	-	14.624
67A019: <i>GPS III</i>	1,706.476	193.367	210.473	179.612	-	179.612	153.322	75.398	76.819	78.194	170.134	2,843.795

**MDAP/MAIS Code:** 292

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

The Global Positioning System (GPS) is a space based navigation system that fills validated Joint Service requirements for worldwide, accurate, common grid three dimensional positioning/navigation for military aircraft, ships, and ground personnel. The consistent accuracy, unaffected by location or weather and available in real time, significantly improves effectiveness of reconnaissance, weapons delivery, mine countermeasures and rapid deployment for all services. GPS must comply with Title 10 United States Code (USC) 2281 which requires that the Secretary of Defense ensures that continued sustainment and operations of GPS for military and civilian purposes and 51 USC sec 50112 which requires that GPS complies with certain standards and facilitates international cooperation.

The system is composed of three segments: user equipment (funded under PE 0305164F), space (funded under this PE and PE 0305165F) and a control network (funded under PE 0305165F and PE 0603423F). The satellites broadcast high accuracy data using precisely synchronized signals which are received and processed by user equipment installed in military platforms. This equipment computes the platform position and velocity and provides steering vectors to target locations or navigation waypoints. The control segment provides daily updates to the navigation messages broadcast from the satellites to maintain system precision in three dimensions to 16 meters spherical error probable worldwide. Additionally, GPS supports the United States Nuclear Detonation (NUDET) Detection System (NDS) mission and provides strategic and tactical support to the following Department of Defense (DoD) missions: Joint Operations by providing capabilities for Positioning, Navigation, and Timing (PNT); Command, Control, Communications, and Intelligence; Special Operations; Military Operations in Urban Terrain; Defense-Wide Mission Support; Air Mobility; and Space Launch Orbital Support.

GPS III is the next generation Space Vehicle (SV) to join the GPS constellation. GPS III SVs will deliver significant enhancements, including a new civil (L1C) Galileo-compatible signal, and enhanced anti-jam power. Two auxiliary payloads, Search and Rescue/GPS (SAR/GPS) and Laser Retroreflector Array (LRA) will be added no earlier than SV11. The SAR/GPS payload provided by Canada will fill a validated National Search and Rescue Committee requirement to provide enduring, space-based distress alerting capability to detect, locate, and relay distress alerts to fulfill its responsibilities under international agreements for Search and Rescue. SAR integration costs are funded by the Coast Guard. LRA, built by the Naval Research Lab (NRL), is a passive reflector that will improve accuracy and provide better ephemeris data. National Geospatial-Intelligence Agency (NGA) funds the integration costs of LRA.

This program funds GPS III and supports research, development, test and evaluation of GPS III SV01-02, and risk-reducing simulators through a systems engineering approach that matures and delivers SVs for launch.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / <i>GPS III Space Segment</i>
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Additionally, the program includes SV01-02 engineering studies and analyses, trade studies, system development, test and evaluation efforts, integrated logistics support products, on-orbit support, and mission operations support for civil and military applications that protect U.S. military and allied use of GPS. Starting in FY14, all Space Modernization Initiatives (SMI) funding is re-allocated to cover SV01-02 development overruns.

Options for an alternate production source competition continue to be explored by USD(AT&L) for SVs no earlier than SV11. The Air Force's notional plan includes FY15-16 funding to mature up to three contractors' GPS production designs to facilitate a full and open competition in FY17 for up to 22 GPS III SVs with an expected contract award in FY17-FY18.

This program is a 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	200.984	212.571	167.576	-	167.576
Current President's Budget	195.950	211.907	180.902	-	180.902
Total Adjustments	-5.034	-0.664	13.326	-	13.326
• Congressional General Reductions	-	-0.664			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-5.034	-			
• Other Adjustments	-	-	13.326	-	13.326

**Change Summary Explanation**

FY16: +\$13.326M to fund contingency operations.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment				<b>Project (Number/Name)</b> 676007 / SAR- GPS			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
676007: SAR- GPS	3.938	2.583	1.434	1.290	-	1.290	1.308	1.333	1.357	1.381	-	14.624
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Search and Rescue GPS (SAR/GPS) is an approved auxiliary payload on GPS III beginning no earlier than SV11. SAR/GPS fills validated National Search and Rescue Committee requirements to provide enduring, space-based distress alerting capability to detect, locate, and relay distress alerts to fulfill its responsibilities under international agreements for Search and Rescue.

In addition, the USAF has on-going requirements to rescue US Military personnel in harm's way per Air Force Doctrine Document 2-1.6. The implementation of a US Mid Earth Orbiting (MEO) Search and Rescue Space Segment is via a Canadian-Provided 406 MHz SAR repeater on GPS III SVs. This system presents a cost effective, low- risk opportunity that accommodates existing and planned 406 MHz beacons across the globe. Per NSPD-39, USAF and USCG, the US operators of the civil COSPAS/ SARSAT system and the international search and rescue system, share costs (50/50) associated with integrating the Canadian provided SAR repeater to GPS III beginning no earlier than SV11. Costs presented in this document represent the USAF 50% Share.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> SAR/GPS	2.583	1.434	1.290
<b>Description:</b> Nonrecurring costs for systems engineering activities to integrate the payload onto the GPS III SVs starting no earlier than SV11.			
<b>FY 2014 Accomplishments:</b> Continued design and development of SAR/GPS antennas, associated hardware and cabling, and SV software; system engineering associated with integrating SAR payload onto the GPS III SVs; system engineering and program management (SE/PM), associated with integrating SAR payload onto the GPS III SVs; enterprise-level SEIT/PM; and interface control work. Costs do not include development and production of Canadian payload unit.			
<b>FY 2015 Plans:</b> Continue to design and develop SAR/GPS antennas, associated hardware and cabling, and space vehicle software; systems engineering associated with integrating SAR payload onto the GPS III SVs; enterprise-level SEIT/PM. Costs do not include development and production of Canadian payload unit.			
<b>FY 2016 Plans:</b>			

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment	<b>Project (Number/Name)</b> 676007 / SAR- GPS
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016
Complete design and development of SAR/GPS antennas, associated hardware and cabling, and space vehicle software; systems engineering associated with integrating SAR payload onto the GPS III SVs; enterprise-level SEIT/PM. Costs do not include development and production of Canadian payload unit.			
<b>Accomplishments/Planned Programs Subtotals</b>	2.583	1.434	1.290

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• MPAF: BA05: Line Item # GPSIII: GPS III TOA	450.238	315.398	199.218	-	199.218	257.697	767.498	906.239	902.397	3,872.270	7,670.955
• USCG: U.S. Coast Guard	2.915	2.915	2.915	-	2.915	2.915	2.915	2.915	2.915	2.915	23.320
• NGA: National Geospatial- Intelligence Agency	0.100	0.200	1.000	-	1.000	1.500	1.500	1.500	1.500	3.400	10.700

**Remarks**

**D. Acquisition Strategy**  
SAR/GPS will be integrated as part of the GPS III program and the Air Force is conducting market research to review the industrial base for alternate sources to procure GPS III satellite vehicles (SVs).

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment	<b>Project (Number/Name)</b> 676007 / SAR- GPS
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Search and Rescue SAR/ GPS	C/CPIF	Lockheed Martin : Newtown, PA	3.938	2.583	Dec 2013	1.434	Dec 2014	1.290	Dec 2015	-		1.290	5.379	14.624	-
<b>Subtotal</b>			3.938	2.583		1.434		1.290		-		1.290	5.379	14.624	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			3.938	2.583	1.434	1.290	-	1.290	5.379	14.624	-

**Remarks**





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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment	<b>Project (Number/Name)</b> 676007 / SAR- GPS
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GPS III Production Readiness Decision (Phase 1)	2	2015	3	2015
GPS III Follow-On Production Buy Decision (Phase 2)	1	2017	1	2017
GPS III Delta Critical Design Review (dCDR)	2	2019	2	2019

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment				<b>Project (Number/Name)</b> 67A019 / GPS III			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
67A019: GPS III	1,706.476	193.367	210.473	179.612	-	179.612	153.322	75.398	76.819	78.194	170.134	2,843.795
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

GPS III is the next generation Space Vehicle (SV) supporting the GPS constellation. GPS III SVs will deliver significant enhancements, including a new civil (L1C) Galileo-compatible signal, enhanced anti-jam power, and a growth path to full warfighter capabilities. GPS III SV03-08 is in the Production & Deployment Phase.

RDT&E, AF PE 0305265F funds GPS III and supports research, development, test and evaluation of GPS III SV01-02, and risk-reducing simulators through a systems engineering approach that matures and delivers SVs for launch. Space Modernization Initiative (SMI) funding ended in FY13. All future SMI funding has been re-allocated to cover GPS III SV01-02 development cost overrun. Any future SMI will be suspended until GPS III future SV acquisition options finalize.

In an effort to implement Better Buying Power 3.0 to control production costs the Air Force intends to create a competitive environment. Options for the GPS III Production Readiness competition continue to be explored by USD(AT&L) for SVs no earlier than SV11. The Air Force's notional plan is for a two-phased competition process. Phase one is a Production Readiness competition for up to three firm-fixed price contracts to gain insight into competitors' production designs for a GPS III SV competition in Phase two. Phase two will be a full and open competition for up to 22 GPS III Production SVs with an expected award in FY18.

This PE includes SV01-02 engineering studies and analyses, trade studies, system development, test and evaluation efforts, integrated logistics support products, on-orbit support, and mission operations support for civil and military applications that protect U.S. military and allied use of GPS.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> GPS III SV01-2	184.244	198.145	129.449
<b>Description:</b> Development, test and evaluation of two GPS III space vehicles and associated simulators, engineering studies and analyses, trade studies, system development, test and evaluation efforts, and integrated logistics support products.			
<b>FY 2014 Accomplishments:</b> Continued GPS III SV development, SE&I, technical and program support. Delivered 97% of SV01 & 82% of SV02 hardware. Completed assembly and integration of the SV01 Mission Data Unit (MDU) & initiated assembly level test. Installed all SV01 transmitters onto the Navigation Payload. Integrated the Network Communications & Nuclear Detonation Detection System (NDS) payloads onto SV02.			
<b>FY 2015 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment	<b>Project (Number/Name)</b> 67A019 / GPS III		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>Continue GPS III space vehicle development, SE&amp;I, technical and program support. Deliver SV01 Navigation Payload and final bus assemblies. Complete SV01 system module core mate. Complete flight software qualification for the MDU. Complete SV01 Thermal Vacuum (TVAC) testing and complete all qualification testing. Deliver SV02 Navigation Payload.</p> <p><b>FY 2016 Plans:</b> Continue GPS III space vehicle development, SE&amp;I, technical and program support. Complete SV01 Available For Launch (AFL) activities. Complete SV02 Thermal Vacuum (TVAC) testing and complete all qualification testing.</p>				
<p><b>Title:</b> Production Readiness</p> <p><b>Description:</b> Options for the GPS III competition for future SVs continue to be explored by USD(AT&amp;L). The Air Force's notional plan is for a two-phased competition process. Phase one is a Production Readiness competition for up to three firm-fixed price contracts to mature competitor's production designs for a GPS III SV competition in Phase two. Phase two will be a full and open Competition for up to 22 GPS III Production SVs starting no earlier than SV11 with an expected award in FY17-FY18.</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> Begin funding to explore options with USD (AT&amp;L) for a GPS III competition starting no earlier than SV11.</p> <p><b>FY 2016 Plans:</b> Based on USD(AT&amp;L) decision for GPS III beginning no earlier than SV11, notionally FY16 funds will mature up to three contractor's GPS III SV Production designs to facilitate a full and open competition in FY18 for up to 22 GPS.</p>		-	3.500	41.900
<p><b>Title:</b> Systems Engineering/Launch/On-Orbit Support &amp; Testing</p> <p><b>Description:</b> Support costs include such activities as development of Launch &amp; Checkout System (LCS) to ensure space and ground communications, on-orbit checkout, storage, testing, and system engineering.</p> <p><b>FY 2014 Accomplishments:</b> Continued systems engineering and integration support to the development of SV01-02. Evolved Expendable Launch Vehicle (EELV) early integration and mission unique items to support launch processing. Continued development of GPS Launch and Checkout System (LCS) to command and control GPS III SVs after launch. Continued processing and technical support for the launch processing facility at CCAFS.</p> <p><b>FY 2015 Plans:</b> Continue systems engineering and integration support to the development of SV01-02, and Evolved Expendable Launch Vehicle (EELV) early integration and mission unique items to support launch processing. Complete development of GPS Launch and</p>		9.123	8.828	8.263

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment	<b>Project (Number/Name)</b> 67A019 / GPS III

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Checkout System (LCS) to command and control the GPS III SVs after launch. Continue processing and technical support for the launch processing facility at CCAFS.			
<b><i>FY 2016 Plans:</i></b> Continue systems engineering and integration support to the development of SV01-02, and Evolved Expendable Launch Vehicle (EELV) early integration and mission unique items to support launch processing. Continue processing and technical support for the launch processing facility at CCAFS.			
<b>Accomplishments/Planned Programs Subtotals</b>	193.367	210.473	179.612

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

<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• MPAF: BA05: Line Item # GPSIII: GPS III TOA	450.238	315.398	199.218	-	199.218	257.697	767.498	906.239	902.397	3,872.270	7,670.955

**Remarks**

**D. Acquisition Strategy**

The GPS III next generation space segment rapidly and affordably responds to warfighter capability requirements. The acquisition approach utilizes a disciplined systems engineering approach which focuses on mitigating cost and schedule risk through a lower risk incremental delivery of mature technologies. This approach focuses on mission success and on time delivery. The GPS III SVs will have GPS IIF capabilities plus up to a 3x-8x increase in anti-jam signal power, 3x improved accuracy, 3+ year increased design life, a new civil (L1C) signal compatible with the European Galileo system and a satellite bus capable of supporting future SV capability additions.

In an effort to implement Better Buying Power 3.0 to control production costs the Air Force intends to create a competitive environment. Options for the GPS III Production Readiness competition starting no earlier than SV11 continue to be explored by USD(AT&L). The Air Force's notional plan is for a two-phased competition process. Phase one is a Production Readiness competition for up to three firm-fixed price contracts to mature competitors' production designs for a GPS III SV competition in Phase two. Phase two will be a full and open competition for up to 22 GPS III Production SVs with an expected award in FY17-FY18.

The GPS directorate received USD(AT&L) approval to purchase GPS III SV09-10 at the December 2014 Defense Acquisition Board in order to sustain the constellation while competitive options are pursued. The GPS III SV09-10 purchase will be on the current Lockheed Martin contract as technical equivalents of SV01-08.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment	<b>Project (Number/Name)</b> 67A019 / GPS III
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block III Development	C/CPIF	Lockheed Martin : Newtown, PA	1,376.888	169.111	Dec 2013	172.365	Dec 2014	106.239	Dec 2015	-		106.239	388.286	2,212.889	-
Enterprise Studies	C/CPAF	SAIC : Huntington Beach, CA	31.187	3.074	Dec 2013	3.818	Nov 2014	3.293	Nov 2015	-		3.293	36.000	77.372	-
Modernization/SE & Technical Support	Various	Various : Various,	92.487	-		-		-		-		-	-	92.487	-
Launch & Checkout System (LCS)	C/CPIF	Raytheon : Aurora, CO	19.000	-		-		-		-		-	-	19.000	-
Launch Services	C/CPFF	ULA : Centennial, CO	2.418	1.272	Mar 2014	-		-		-		-	-	3.690	-
Launch Support	RO	45th : Cape Canaveral, FL	1.405	0.920	Mar 2014	1.560	Mar 2015	2.370	Mar 2016	-		2.370	0.930	7.185	-
SMI	C/CPIF	Lockheed : Newtown, PA	43.400	-	Dec 2013	-	Dec 2014	-	Dec 2015	-		-	-	43.400	-
Production Readiness	C/CPAF	TBD : TBD,	0.000	-		3.500	Aug 2015	41.900	Feb 2016	-		41.900	-	45.400	-
<b>Subtotal</b>			1,566.785	174.377		181.243		153.802		-		153.802	425.216	2,501.423	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
T&E	Various	Various : ,	4.559	3.857	May 2014	3.450	May 2015	2.600	May 2016	-		2.600	9.950	24.416	-
<b>Subtotal</b>			4.559	3.857		3.450		2.600		-		2.600	9.950	24.416	-



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment	<b>Project (Number/Name)</b> 67A019 / GPS III
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
GPS III Space Vehicle (SV) 01 Navigation Payload (PL) Delivered				■																								
GPS III Production Readiness Decision (Phase 1)							■																					
GPS III Laser Retro-reflector Array (LRA) Critical Design Review (CDR)							■																					
GPS III SV11+ Global Burst Detector (GBD) PL Redesign Preliminary Design Review											■																	
GPS III SV01 Complete Thermal Vacuum Testing											■																	
GPS III SV01 Available for Launch											■																	
SAR/GPS Payload Critical Design Review (CDR)												■																
GPS III SV02 Available for Launch																■												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305265F / GPS III Space Segment	<b>Project (Number/Name)</b> 67A019 / GPS III
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GPS III Space Vehicle (SV) 01 Navigation Payload (PL) Delivered	1	2015	1	2015
GPS III Production Readiness Decision (Phase 1)	2	2015	2	2015
GPS III Laser Retro-reflector Array (LRA) Critical Design Review (CDR)	2	2015	2	2015
GPS III SV11+ Global Burst Detector (GBD) PL Redesign Preliminary Design Review	4	2015	4	2015
GPS III SV01 Complete Thermal Vacuum Testing	4	2015	4	2015
GPS III SV01 Available for Launch	2	2016	2	2016
SAR/GPS Payload Critical Design Review (CDR)	3	2016	3	2016
GPS III SV02 Available for Launch	2	2017	2	2017



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305600F / <i>International Intelligence Technology and Architectures</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	-	2.270	-	-	-	-	-	-	-	Continuing	Continuing
675898: <i>INTERNATIONAL INTELLIGENCE TECHNOLOGY AND ARC</i>	-	-	2.270	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

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

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	-	-	-	-	-
Current President's Budget		2.270	-	-	-
Total Adjustments	-	2.270	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	2.270			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-	-	-

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<b>Title:</b> International Intelligence Technology and ARC	-	2.270	-	-	-
<b>Description:</b> International Intelligence Technology and ARC					
<b>FY 2014 Accomplishments:</b>					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305600F / <i>International Intelligence Technology and Architectures</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
<b>FY 2015 Plans:</b> This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress. For further information, please contact the Director of Special Programs, OUSD(AT&L)/DSP.					
<b>FY 2016 Base Plans:</b> N/A					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	-	2.270	-	-	-

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• N/A: N/A	-	-	-	-	-	-	-	-	-	-	-

**Remarks**

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

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305600F / <i>International Intelligence Technology and Architectures</i>	<b>Project (Number/Name)</b> 675898 / <i>INTERNATIONAL INTELLIGENCE TECHNOLOGY AND ARC</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Actual breakout provided in Special Access Program Annual Report to Congress	Various	N/A : N/A,	-	-		2.270		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		2.270		-		-		-	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	-	2.270	-	-	-	-	-	-

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

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305600F / <i>International Intelligence Technology and Architectures</i>	<b>Project (Number/Name)</b> 675898 / <i>INTERNATIONAL INTELLIGENCE TECHNOLOGY AND ARC</i>

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

Actual schedule provided in Special Access Program Annual Report to Congress



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305600F / <i>International Intelligence Technology and Architectures</i>	<b>Project (Number/Name)</b> 675898 / <i>INTERNATIONAL INTELLIGENCE TECHNOLOGY AND ARC</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Actual schedule provided in Special Access Program Annual Report to Congress	1	2015	4	2015

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System
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COST (\$ in Millions)	Prior Years <sup>(+)</sup>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	271.587	56.523	73.779	81.911	-	81.911	65.414	54.407	55.319	56.139	Continuing	Continuing
67A030: <i>Infrastructure</i>	135.717	24.637	34.781	31.112	-	31.112	-	-	-	-	-	226.247
67A031: <i>Mission Applications</i>	127.278	31.886	38.998	38.380	-	38.380	-	-	-	-	-	236.542
67A035: <i>INCREMENT 3</i>	0.000	-	-	12.419	-	12.419	65.414	54.407	55.319	56.139	Continuing	Continuing

**MDAP/MAIS Code:** N82

<sup>(+)</sup> The sum of all Prior Years is \$8.592 million less than the represented total due to several projects ending

**Note**

In FY 2016, Project 65A035, (Increment 3), includes new start efforts to include pre-Milestone A requirements development, systems engineering and program planning for JMS Increment 3.

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

The Joint Space Operations Center (JSpOC) Mission System (JMS) Program is a Space Command and Control (C2) capability for the Commander, Joint Functional Component Commander for Space (JFCC SPACE). The JMS program is predominately a software effort that will produce an integrated, net-centric Service Oriented Architecture (SOA) and the necessary software applications to accomplish required missions. The program will provide a collaborative environment that will enhance and modernize space situational awareness (SSA) capabilities; create decision-relevant views of the space environment; rapidly detect, track and characterize objects of interest; identify / exploit traditional and non-traditional sources; perform space threat analysis; and enable efficient distribution of data across the Space Surveillance Network (SSN). Furthermore, it provides a viable migration path from the legacy Space Defense Operations Center (SPADOC) system, which has 75% of its components beyond end of life or end of service, and the majority of its software no longer vendor-supported. JMS will also integrate data from SSA sensors which is exposed via the Net-Centric Sensors and Data Sources effort (project 65A012) in the SSA Systems program (0604425F) through FY15. JMS 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.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	56.523	73.779	69.004	-	69.004
Current President's Budget	56.523	73.779	81.911	-	81.911
Total Adjustments	-	-	12.907	-	12.907
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	12.907	-	12.907

**Change Summary Explanation**

FY16: +\$12.907M funds requirements development, system engineering, program planning, and risk reduction pre-Milestone A activities for JMS Increment 3 and continues work on Net-Centric Sensors and Data Sources



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System				<b>Project (Number/Name)</b> 67A030 / Infrastructure			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
67A030: Infrastructure	135.717	24.637	34.781	31.112	-	31.112	-	-	-	-	-	226.247
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

\*Due to the planned delivery of Increment 2 in FY16, a new BPAC was created for Increment 3 (67A035). All funding in FY17-FY20 has been allocated to Increment 3 and realigned from 67A030 to 67A035.

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

Infrastructure will provide a Service Oriented Architecture (SOA), net-centric collaborative information environment at the Unclassified, Secret, TS/SCI, and SAP levels. Efforts incorporate net-centric enterprise services and integrating incremental space mission applications services. Priority is migration off the legacy SPADOC hardware and services into a sustainable infrastructure. Effort integrates components of SSA mission applications and C2 capabilities into the JSpOC to create timely, actionable knowledge necessary for maintaining space superiority and exercising command and control of space forces.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Increment 1	3.800	-	-	-	-
<b>Description:</b> Pursues and integrates a collaborative net-centric, SOA information environment					
<b>FY 2014 Accomplishments:</b> Continued ICS. Increment 1 was subsumed into Increment 2 with delivery of Service Pack 7. This was the last year of ICS. Sustainment of JMS will begin in FY15.					
<b>Title:</b> Increment 2	20.837	34.781	31.112	-	31.112
<b>Description:</b> Pursues and integrates a collaborative net-centric, SOA information environment					
<b>FY 2014 Accomplishments:</b> Developed, matured and accredited the SOA infrastructure to support operations of Service Pack (SP) 7; provided incremental upgrades to infrastructure (including net ready, security, reliability core services, messaging, and UDOP) as new applications/capabilities were delivered with each service pack. Provided systems engineering, integration, support and testing of enhanced infrastructure to support future SP-9 fielding.					
<b>FY 2015 Plans:</b> Continuing development of accrediting SOA infrastructure to support operations of SP-9; providing incremental upgrades to infrastructure (including net ready, security, reliability core services, messaging, and UDOP) as					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A030 / Infrastructure

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
new applications/capabilities are delivered with each service pack. Providing systems engineering, integration, support and testing of enhanced infrastructure to support future SP-11 and SP-13 fielding.					
<b><i>FY 2016 Base Plans:</i></b> Complete development and fielding of SP-11 and 13 to complete Increment-2. Develop JMS Standard Space Trainer and develop capability to net-centrally expose legacy sensor data.					
<b>Accomplishments/Planned Programs Subtotals</b>	24.637	34.781	31.112	-	31.112

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPAF: BA03: Line Item # 836790: <i>Space Mods Space</i>	0.867	-	-	-	-	-	11.932	12.347	12.567	Continuing	Continuing

**Remarks**  
Replaces JMS components and provides an operational, sustainable environment to maintain capabilities that fuse data from space intelligence, surveillance, reconnaissance, and environmental sources. This modification will procure commercial hardware, software licenses, and warranties to upgrade the operational environment enclaves (2 Secret / 2 SCI), as well as keep up to date development/operational testing locations.

**D. Acquisition Strategy**  
The JMS overarching Acquisition Strategy, approved by the Milestone Decision Authority on 15 Apr 2012, provides for a multi-increment program to develop, integrate, test, and deliver JMS capability. The acquisition strategy reflects new principles that address the speed, agility, and adaptability required for successful IT acquisition resulting in a tailored incremental acquisition approach to deliver early and often by leveraging mature industry capabilities and taking advantage of previous Government investments in Federally Funded Research and Development Center (FFRDC) and Government lab prototyping efforts.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A030 / Infrastructure
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SOA, Infrastructure and core service development	MIPR	ISS, TDKC : Various,	39.583	12.946	Dec 2013	16.227	Dec 2014	9.606	Dec 2015	-		9.606	-	78.362	TBD
Interim Contractor Support	MIPR	ISS : Colorado Springs, CO	1.070	1.100	Dec 2013	-		-		-		-	-	2.170	TBD
High-performance computing and security infrastructure development	MIPR	MIT/LL : Lexington, MA	21.380	2.652	Dec 2013	3.496	Dec 2014	4.364	Dec 2015	-		4.364	-	31.892	TBD
Mission Infrastructure	Various	Various : Various,	23.742	-		3.657	Nov 2014	3.300	Nov 2015	-		3.300	-	30.699	TBD
Net-Centric Sensors and Data Sources	TBD	TBD : TBD,	0.000	-		-		0.835	Nov 2015	-		0.835	-	0.835	-
Standard Space Trainer	C/TBD	Sonalyt : Colorado Springs, CO	0.000	-		-		4.000	Nov 2015	-		4.000	-	4.000	-
Integration & Acq Logistics	MIPR	SPAWAR : San Diego, CA	19.696	6.885	Dec 2013	8.633	Dec 2014	6.942	Dec 2015	-		6.942	-	42.156	TBD
<b>Subtotal</b>			105.471	23.583		32.013		29.047		-		29.047	-	190.114	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support Costs	Various	Various : Various,	0.842	-		-		0.200	Feb 2015	-		0.200	-	1.042	TBD
<b>Subtotal</b>			0.842	-		-		0.200		-		0.200	-	1.042	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Combined Developmental Test / Operational Test	Various	Various : Various,	4.959	-		-		-		-		-	-	4.959	TBD
Combined Test Facility	Various	Various : Various,	0.565	-		-		-		-		-	-	0.565	TBD
<b>Subtotal</b>			5.524	-		-		-		-		-	-	5.524	-



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**Exhibit R-4, RDT&E Schedule Profile:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A030 / Infrastructure
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Commerical Software Contract Award (Oct 2014)	■																											
Commerical Software Operation Licenses (Sep 2014)				■																								
Commerical Software Operation Licenses (Nov 2015)											■																	
Service Pack 7 Delivery	■	■	■	■																								
Service Pack 9 Delivery	■	■	■	■	■	■	■	■																				
Service Pack 11 Delivery					■	■	■	■	■	■	■	■																
Service Pack 13 Delivery									■	■	■	■	■	■	■	■												
Inc 2 MS C (Sep 2016)																												
Inc 2 FDD (Oct 2016)																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A030 / Infrastructure
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Commerical Software Contract Award (Oct 2014)	1	2014	1	2014
Commerical Software Operation Licenses (Sep 2014)	4	2014	4	2014
Commerical Software Operation Licenses (Nov 2015)	1	2016	1	2016
Service Pack 7 Delivery	1	2014	1	2015
Service Pack 9 Delivery	1	2014	1	2016
Service Pack 11 Delivery	1	2015	3	2016
Service Pack 13 Delivery	2	2015	4	2016
Inc 2 MS C (Sep 2016)	4	2016	4	2016
Inc 2 FDD (Oct 2016)	1	2017	1	2017

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System				<b>Project (Number/Name)</b> 67A031 / Mission Applications			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
67A031: Mission Applications	127.278	31.886	38.998	38.380	-	38.380	-	-	-	-	-	236.542
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Due to the planned delivery of Increment 2 in FY16, a new BPAC was created for Increment 3 (67A035). Funding has been realigned from 67A031 to 67A035 for Increment 3. \$12.4M was realigned in FY16 and all remaining funds in FY17 through FY20.

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

Mission applications will provide space services to enhance the accuracy, sustainability, and responsiveness of space surveillance capabilities by providing the knowledge environment necessary to enable the Commander JFCC Space to make rapid, responsive decisions for the protection of space assets from proliferating threats (adversary as well as orbiting debris). The system will provide a high accuracy space catalog (knowledge of space objects), increased observation verification and capabilities, and improved event processing. Research, design, and development will provide SSA space catalog applications, services, space surveillance observation processing, and sensor tasking. Funding includes technical studies, development, and integration.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Increment 2	31.886	38.998	38.380	-	38.380
<b>Description:</b> Services/mission applications to conduct space control/situational awareness					
<b>FY 2014 Accomplishments:</b> Continued development, testing and fielding of Government developed and commercial software, providing mission services such as the critical elements of space catalog, sensor calibration, routine metric tasking, conjunction assessment, maneuver, message processing, reentry, space order of battle and NUDET; efforts associated with the focus on retirement of legacy functionality. Fielded JMS Service Pack 7.					
<b>FY 2015 Plans:</b> Continuing development, testing and fielding of commercial software, providing mission services such as improved resident space object accuracy, breakup processing, launch processing, high priority tasking and additional conjunction assessment tools; efforts associated with the focus on retirement of legacy functionality. Field JMS Service Pack 9.					
<b>FY 2016 Base Plans:</b>					

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A031 / Mission Applications
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue development, testing and fielding of commercial software, providing mission services such as exercise/training capabilities, high priority sensor tasking, integration of special access data sources and other operator tools. Field Service Packs 11 and 13.					
<b>Accomplishments/Planned Programs Subtotals</b>	31.886	38.998	38.380	-	38.380

<b>C. Other Program Funding Summary (\$ in Millions)</b>										
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete Total Cost</u>
• OPAF: BA03: Line Item #836790: Space Mods Space	0.867	-	-	-	-	-	11.932	12.347	12.567	Continuing Continuing

**Remarks**

**D. Acquisition Strategy**  
The JMS overarching Acquisition Strategy, approved by the Milestone Decision Authority on 15 Apr 2012, provides for a multi-increment program to develop, integrate, test, and deliver JMS capability. The acquisition strategy reflects new principles that address the speed, agility, and adaptability required for successful IT acquisition resulting in a tailored incremental acquisition approach to deliver early and often by leveraging mature industry capabilities and taking advantage of previous Government investments in Federally Funded Research and Development Center (FFRDC) and Government lab prototyping efforts.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A031 / Mission Applications
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Breakup, debris modeling, and NUDET applications	MIPR	National Labs : Various,	5.890	0.045	Mar 2014	0.010	Jan 2015	0.010	Jan 2016	-		0.010	-	5.955	TBD
Continuity of operations pathfinder	C/CPFF	Lockheed Martin : Chantilly, VA	8.000	-		-		-		-		-	-	8.000	-
Mission applications and service pack content development	Various	Various : Various,	23.166	15.871	Dec 2013	9.772	Dec 2014	18.338	Dec 2015	-		18.338	-	67.147	TBD
Service pack deployment and evaluation	RO	SPAWAR and MITRE : Los Angeles and San Diego, CA	0.846	-		-		-		-		-	-	0.846	0.846
Positive object ID, rapid object characterization, and dynamic sensor tasking risk reduction	MIPR	MIT/LL, AFRL : Various,	11.251	-		-		-		-		-	-	11.251	-
High performance computing and security infrastructure development	MIPR	MIT/LL : Lexington, MA	21.525	-		-		-		-		-	-	21.525	-
COTS hardware, software purchase and engineering support	C/Various	AGI, Exton, PA; ai Solutions, Lanham, MD; SPAWAR, San Diego, CA : Various,	18.790	9.523	Oct 2013	21.817	Nov 2014	13.520	Nov 2015	-		13.520	-	63.650	TBD
<b>Subtotal</b>			89.468	25.439		31.599		31.868		-		31.868	-	178.374	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support Costs	Various	Various : Various,	0.480	0.326	Mar 2014	0.354	Nov 2014	0.361	Nov 2015	-		0.361	-	1.521	TBD
<b>Subtotal</b>			0.480	0.326		0.354		0.361		-		0.361	-	1.521	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A031 / Mission Applications
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Combined Developmental Test / Operational Test	Various	Various : Various,	4.768	1.832	Jan 2014	2.075	Nov 2014	2.300	Nov 2015	-		2.300	-	10.975	TBD
Combined Test Facility	Various	Various : Various,	2.442	1.747	Jan 2014	1.526	Nov 2014	0.868	Nov 2015	-		0.868	-	6.583	TBD
<b>Subtotal</b>			7.210	3.579		3.601		3.168		-		3.168	-	17.558	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Admin (PMA)	Various	Various : Various,	7.984	1.093	Dec 2014	2.063	Dec 2014	1.777	Dec 2015	-		1.777	-	12.917	TBD
Program Office Engineering (FFRDC)	MIPR	Mitre : Bedford, MA	15.290	0.963	Dec 2013	0.920	Dec 2014	0.635	Dec 2015	-		0.635	-	17.808	TBD
Program Office Engineering Support (FFRDC)	RO	Aerospace : Los Angeles, CA	0.566	0.486	Dec 2013	0.461	Dec 2014	0.571	Dec 2015	-		0.571	-	2.084	-
Systems Engineering and Integration	C/CPFF	Various : Various,	6.280	-		-		-		-		-	-	6.280	TBD
<b>Subtotal</b>			30.120	2.542		3.444		2.983		-		2.983	-	39.089	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		127.278	31.886	38.998	38.380	38.380	-	236.542	-

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A031 / Mission Applications
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Commerical Software Contract Award (Oct 2014)	■																											
Commerical Software Operation Licenses (Sep 2014)				■																								
Commerical Software Operation Licenses (Nov 2015)											■																	
Service Pack 7 Delivery	■	■	■	■																								
Service Pack 9 Delivery	■	■	■	■	■	■	■	■																				
Service Pack 11 Delivery					■	■	■	■	■	■	■	■																
Service Pack 13 Delivery									■	■	■	■	■	■	■	■												
Inc 2 MS C (Sep 2016)																												
Inc 2 FDD (Oct 2016)																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A031 / Mission Applications
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Commerical Software Contract Award (Oct 2014)	1	2014	1	2014
Commerical Software Operation Licenses (Sep 2014)	4	2014	4	2014
Commerical Software Operation Licenses (Nov 2015)	1	2016	1	2016
Service Pack 7 Delivery	1	2014	1	2015
Service Pack 9 Delivery	1	2014	1	2016
Service Pack 11 Delivery	1	2015	3	2016
Service Pack 13 Delivery	2	2015	4	2016
Inc 2 MS C (Sep 2016)	4	2016	4	2016
Inc 2 FDD (Oct 2016)	1	2017	1	2017

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System				<b>Project (Number/Name)</b> 67A035 / INCREMENT 3			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
67A035: INCREMENT 3	-	-	-	12.419	-	12.419	65.414	54.407	55.319	56.139	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2016, Project 65A035, (Increment 3), includes new start efforts to include pre-Milestone A requirements development, systems engineering and program planning for JMS Increment 3.

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

Increment 3 will provide the mission applications to deliver a robust, responsive Battle Management Command, Control and Communications (BMC3) that allows JFCC-Space to meet emerging threats. These applications will include, but are not limited to, providing the ability to aggregate intelligence data from various user-defined sources and automatically generating alerts, provide an integrated operating picture for RF spectrum, and create an interactive modeling and simulation environment to support training and exercises, collaborative data sharing, and Course of Action (COA) development and assessment. Funding includes technical studies, development, integration and related support costs.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Increment 3	-	-	12.419	-	12.419
<b>Description:</b> Services/mission applications to deliver a robust, responsive BMC3 capability to meet emerging threats.					
<b>FY 2014 Accomplishments:</b> NA					
<b>FY 2015 Plans:</b> NA					
<b>FY 2016 Base Plans:</b> Start initial requirements development, systems engineering and program planning for Increment-3. Begin technical maturation studies and risk reduction efforts to enable migration from catalog maintenance to predictive battle management and improved integration planning for intelligence and sensor data. Perform market research and data calls to determine existing capabilities that can be integrated into JMS to meet BMC3 objectives.					
<b>FY 2016 OCO Plans:</b>					

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A035 / INCREMENT 3
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
NA					
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	12.419	-	12.419

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF: BA03: Line Item #836790: Space Mods Space	-	-	-	-	-	-	11.932	12.347	12.567	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

The Air Force is in the process of updating the acquisition strategy for JMS Increment 3. The PMO is currently using a government led integration effort using the Navy SPAWAR Systems Center and incremental service pack deliveries for operations.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A035 / INCREMENT 3
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Service Oriented Architecture	Various	ISS, TDKC, various : TBD,	0.000	-		-		2.948	Apr 2016	-		2.948	Continuing	Continuing	TBD
System Integration	MIPR	SPAWAR : San Diego, CA	0.000	-		-		0.762	Apr 2016	-		0.762	Continuing	Continuing	TBD
Mission Applications & Service Pack Content Development	Various	TBD : TBD,	0.000	-		-		0.667	Apr 2016	-		0.667	Continuing	Continuing	-
Software Development, Risk Reduction & Integration	Various	AFRL, FFRDCs, Others TBD : TBD,	0.000	-		-		2.238	Apr 2016	-		2.238	-	2.238	-
<b>Subtotal</b>			0.000	-		-		6.615		-		6.615	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Combined Developmental Test / Operational Test	PO	Various : Various,	0.000	-		-		0.260	Apr 2016	-		0.260	Continuing	Continuing	TBD
<b>Subtotal</b>			0.000	-		-		0.260		-		0.260	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Admin (PMA)	Various	Various : Various,	0.000	-		-		2.544	Apr 2016	-		2.544	Continuing	Continuing	TBD







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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305614F / JSPOC Mission System	<b>Project (Number/Name)</b> 67A035 / INCREMENT 3

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B	1	2017	1	2017
Service Pack 15 Delivery	1	2017	1	2018
Service Pack 17 Delivery	1	2018	1	2019
Service Pack 19 Delivery	1	2019	1	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305881F / <i>Rapid Cyber Acquisition</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	2.151	4.102	3.149	-	3.149	4.817	4.695	4.376	4.454	Continuing	Continuing
670374: <i>Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt</i>	-	2.151	4.102	3.149	-	3.149	4.817	4.695	4.376	4.454	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Rapid Cyber Acquisition (RCA) provides combatant commanders with the ability to rapidly respond to emerging cyber needs. RCA provides rapid fielding of capabilities in three areas: defend the Air Force portion of the DoD Global Information Grid (GIG) in response to new and emerging threats; network attack and cyber exploit capabilities through all phases of warfare; and new cyber operations capabilities that address gaps to support evolving missions.

Rapid Cyber Acquisition delivers cyber capabilities to 24th Air Force (24 AF) warfighters in mission-relevant timeframes. RCA provides capabilities in support of US national security interests, to counter current and future cyber threats, and to enhance the nation's ability to operate in cyberspace. It expedites cyber development and modifications of USAF and DoD cyber capabilities. RCA provides solution sets for cyberspace operations: attack, defense, command and control/situational awareness, exploitation, critical infrastructure support, and combat support. RCA provides integration, and technical support to other Service and Government Agency activities to leverage select Air Force-developed technologies and/or operational capabilities. RCA will develop materiel or non-materiel cyber solutions, conduct rapid prototyping, integration and transition activities for cyber systems. Primary activities include, but are not limited to: development of software/hardware cyber systems; integration and transition of DoD lab-developed cyber capabilities to the warfighter; testing and evaluation; program management administration. Secondary activities include, but are not limited to: studies, analysis, pilots, demonstrations, and risk reduction to emerging technologies for USAF cyber systems. Congress will be notified when all projects have been approved by the end of the 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.

The FY2016 funding request was reduced by \$.881 million to account for the availability of prior execution balances.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force				<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305881F / <i>Rapid Cyber Acquisition</i>				
<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	
Previous President's Budget	2.218	4.102	2.268	-	2.268	
Current President's Budget	2.151	4.102	3.149	-	3.149	
Total Adjustments	-0.067	-	0.881	-	0.881	
• Congressional General Reductions	-	-				
• Congressional Directed Reductions	-	-				
• Congressional Rescissions	-	-				
• Congressional Adds	-	-				
• Congressional Directed Transfers	-	-				
• Reprogrammings	-	-				
• SBIR/STTR Transfer	-0.067	-				
• Other Adjustments	-	-	0.881	-	0.881	
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>				<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Hardware/Software Development				2.051	3.902	2.949
<b>Description:</b> Hardware and software developmental activities in support of urgent cyber defensive, offensive, and Command and Control/Situational Awareness requirements.						
<b>FY 2014 Accomplishments:</b> Effort continued to expedite development of Air Force and DoD cyber capabilities to provide solution sets for cyberspace operations: attack, defense, exploitation, critical infrastructure support, combat support, command and control, information, and weapon systems. Funding also prototyped new capabilities by transitioning a Technology Readiness Level (TRL) 6 or higher capability into a usable product or solution.						
<b>FY 2015 Plans:</b> Continues integration and technical support to Air Force, other Service, and other Government Agency activities that leverage select Air Force developed technologies and/or operational capabilities. Funding will also provide independent operational and technical assessments of cyber capabilities and vulnerabilities. Includes Certification and Accreditation. Increased funding will provide increased capability to address the current backlog of 35+ Rapid Cyber urgent requirements.						
<b>FY 2016 Plans:</b> Will continue integration and technical support to Air Force, other Service, and other Government Agency activities that leverage select Air Force developed technologies and/or operational capabilities. Funding will also provide independent operational and technical assessments of cyber capabilities and vulnerabilities. Includes Certification and Accreditation.						
<b>Title:</b> Hardware Integration				0.100	0.100	0.100

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305881F / <i>Rapid Cyber Acquisition</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> Integration of developed and acquired capabilities.</p> <p><b>FY 2014 Accomplishments:</b> Continued integration and technical support to Air Force, other Service, and other Government Agency activities, which leverage select Air Force developed technologies and/or operational capabilities. Funding also provided independent operational and technical assessments of cyber capabilities and vulnerabilities and included certification and accreditation activities.</p> <p><b>FY 2015 Plans:</b> Funding continues integration and technical support to Air Force, other Service, and other Government Agency activities that leverage select Air Force-developed technologies and/or operational capabilities. Funding also provides independent operational and technical assessments of cyber capabilities and vulnerabilities and includes certification and accreditation activities.</p> <p><b>FY 2016 Plans:</b> Funding will continue integration and technical support to Air Force, other Service, and other Government Agency activities that leverage select Air Force-developed technologies and/or operational capabilities. Funding will also provide independent operational and technical assessments of cyber capabilities and vulnerabilities and will include certification and accreditation.</p>				
<p><b>Title:</b> Test &amp; Evaluation</p> <p><b>Description:</b> 46th Test Squadron provides developmental testing of new tool development and a secure network environment for such testing.</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> Continues to fund developmental test support required for testing new tool development prior to future fielding and provides a secure network environment for such testing.</p> <p><b>FY 2016 Plans:</b> Funding will continue to fund developmental test support required for testing new tool development prior to future fielding and provides a secure network environment for such testing.</p>		-	0.100	0.100
<b>Accomplishments/Planned Programs Subtotals</b>		2.151	4.102	3.149

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305881F / <i>Rapid Cyber Acquisition</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF: BA03: Line Item # 834320: <i>C3 Countermeasures</i>	1.552	-	-	-	-	0.356	0.237	-	-	-	-

**Remarks**

**E. Acquisition Strategy**

Rapid Cyber Acquisition will utilize Concept, Development, Risk Management, or Production and Deployment Plans as a phased approach to acquisition planning. These plans are intended to meet the written acquisition planning requirements and guidance. All plans will contain sufficient information for the Milestone Decision Authority to determine readiness to enter into the applicable phase of the acquisition process. Rapid Cyber Acquisition will consider existing contracting vehicles, including but not limited to: Network Centric Solutions (NETCENTS), NETCENTS 2, Information Technology Enterprise Solutions-2 (ITES-2), Government-Wide Acquisition Contract vehicles (Alliant, Encore II, Solutions for Enterprise-Wide Procurement IV (SEWP IV)), General Services Administration Federal Supply Schedules, National Security Agency vehicles and Cyber Warfare Systems Branch Class Justification and Approval document. Multiple award contractual vehicles, such as National Aeronautics and Space Administration's SEWP IV, provide a wide range of commercially-available products and services that should be able to meet many requirements related to Rapid Cyber Acquisition. These multiple-award vehicles have already met the statutory requirements of the Competition in Contracting Act and only require that Rapid Cyber Acquisition provide a fair opportunity to all contract holders, in accordance with Federal Acquisition Regulation 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305881F / <i>Rapid Cyber Acquisition</i>	<b>Project (Number/Name)</b> 670374 / <i>Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
HW/SW Development	Various	Various : Various,	-	2.101	Nov 2013	3.902	Nov 2014	2.949	Jan 2016	-		2.949	-	8.952	-
HW Integration	Various	Various : ,	-	0.050	Jan 2014	0.100	Jan 2015	0.100	Jan 2016	-		0.100	-	0.250	-
<b>Subtotal</b>			-	2.151		4.002		3.049		-		3.049	-	9.202	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
46TS Det 2	MIPR	TASC : San Antonio, TX	-	-		0.100	Jan 2015	0.100	Jan 2016	-		0.100	-	0.200	-
<b>Subtotal</b>			-	-		0.100		0.100		-		0.100	-	0.200	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	2.151	4.102	3.149	-	3.149	-	9.402	-

**Remarks**





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305881F / <i>Rapid Cyber Acquisition</i>	<b>Project (Number/Name)</b> 670374 / <i>Electronic Combat Spt, C3 Protection/Multi-Mission, Technology and Spt</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
HW/SW Development	1	2014	4	2020
HW Integration/Test & Evaluation	2	2014	3	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305913F / <i>NUDET Detection System (SPACE)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	42.506	20.405	14.447	-	14.447	18.785	24.253	13.898	14.147	Continuing	Continuing
672808: <i>Nuc Detonation Det Sys (sensors)</i>	-	42.506	20.405	14.447	-	14.447	18.785	24.253	13.898	14.147	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The United States Nuclear Detonation (NUDET) Detection System (USNDS) provides a near real-time worldwide, highly survivable/endurable capability to detect, locate, and report any nuclear detonations in the earth's atmosphere or in near space. USNDS supports NUDET detection requirements across five mission areas: Integrated Tactical Warning and Attack Assessment (ITW/AA), Nuclear Force Management (NFM), Space Control (SC), Treaty Monitoring (TM), and a classified mission.

The USNDS program is jointly sponsored and funded by the Department of Defense (DoD), through the US Air Force (AF), and the Department of Energy (DOE), through the National Nuclear Security Administration (NNSA) and its Nuclear Detonation Detection (NA-22) office, respectively. NNSA/NA-22 supplies, at no cost to DoD, USNDS space sensors as Government Furnished Equipment (GFE) to the AF's USNDS Program Office, which is responsible for all acquisition and systems engineering, integration and test (SEIT) activities on space vehicles (SVs), to include Global Positioning System (GPS) and additional hosts, and their supporting ground control segments. The AF directly funds the development of the USNDS ground segment (described below).

DoD funds their contribution to the NDS program in Program Element (PE) 0305913F with RDT&E, OPAF and O&M dollars.

USNDS consists of space sensors and complex ground segments. The space segment sensors, funded by DOE, consists of three nuclear detection sensor payloads: the Radiation Detection Capability (RADEC) payload for Defense Support Program (DSP) satellites, the Global Burst Detection (GBD) payload for Medium Earth Orbit (MEO) platforms (GPS satellites), and the Space Atmospheric Burst Reporting System (SABRS) payload for Geosynchronous Earth Orbit (GEO) platforms (classified GEO host). Together, these sensors and associated communications capability provided by the host satellites comprise the global NUDET space segment detection capability for the USNDS. Space sensors communicate NUDET indications to the fixed ground segment (the RADEC Data Processor (RDP) and the Integrated Correlation and Display System (ICADS)), the deployable mobile ground segment (survivable Ground NDS Terminals (GNTs)), and the survivable/endurable Universal Ground NDS Terminals (UGNTs), when fielded. These ground systems perform data analysis and provide a decision support tool to the Air Force controllers concerning probability of NUDET occurrence. The ground segment provides ground receiving analysis and reporting capabilities to national authorities, commands, and forward users as well as Department of State (DOS) for Treaty Monitoring and Verification mission. The ground control segment is being modernized and continuously improved through an incremental evolution acquisition approach.

The upgrade to the GNT is the survivable/endurable Universal Ground Nuclear Detonation (NUDET) Detection System (NDS) Terminal (UGNT) which is funded with AF RDT&E in this PE. The UGNT provides NUDET Detection Reports to end users through survivable and endurable USNDS communications via Milstar/Advanced Extremely High Frequency (AEHF) circuits. The GNT supports ITW/AA and NFM missions. The UGNT program modifies the baseline of the GNT program and deploys

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305913F / <i>NUDET Detection System (SPACE)</i>
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as an integral part of the Space Based Infrared System (SBIRS) Survivable / Endurable Evolution (S2E2) Mobile Ground System (SMGS) units also in support of ITW/AA and NFM. The UGNT, when integrated with the SMGS, will perform NUDET event processing with fused NDS data from GPS and DSP. SMGS capability refers to the result of the S2E2 upgrade program for the MGS mission processing capability, including the integration of UGNT. The intended end state of UGNT integration is delivery of enhanced missile warning and NUDET detection capabilities that meet survivable/endurable ITW/AA requirements directed by the President, SECDEF, Joint Staff, and USSTRATCOM, delivering long-term, cost effective, multi-role, multi-mission space effects to the war fighter across the range of military operations.

This budget line includes systems engineering, research and development, on-orbit and field testing and end-to-end verification of USNDS space sensors, ground analysis and reporting systems in support of the five USNDS mission areas. Sensor integration for GPS IIF and GPS III are funded in their respective PEs.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	42.506	20.468	6.444	-	6.444
Current President's Budget	42.506	20.405	14.447	-	14.447
Total Adjustments	-	-0.063	8.003	-	8.003
• Congressional General Reductions	-	-0.063			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	8.003	-	8.003

**Change Summary Explanation**

FY16: +\$8.003M to fund SBIRS mobile UGNT.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> ICADS	20.708	6.843	-
<b>Description:</b> Satellite ground data processing system that reports endo-atmospheric, transition and near-space nuclear detonations (NUDETs) as detected by the NDS sensors aboard the GPS and DSP satellites and SABRS equipped satellites.			
<b>FY 2014 Accomplishments:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305913F / <i>NUDET Detection System (SPACE)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
ICADS Build 6 Delivery 1 ITW/AA Certified. Delivery 2 completed Developmental Test & Evaluation (DT&E).				
<b>FY 2015 Plans:</b> Complete ITW/AA certification for ICADS Delivery 2. Operational delivery of ICADS Build 6 Delivery 2 to support GPS III SVs 01-08.				
<b>Title:</b> UGNT		10.942	5.122	8.660
<b>Description:</b> Delivers enhanced missile warning and NUDET detection capabilities that meet survivable/endurable tactical warning and attack assessment requirements directed by the President, SECDEF, Joint Staff and USSTRATCOM delivering long-term, cost effective, multi-role, multi-mission space effects to the war fighter across the range of military operations.				
<b>FY 2014 Accomplishments:</b> Completed UGNT hardware and software development, delivered Testbed, completed Critical Design Review (CDR) and began integration of hardware and software into the first two UGNT shelters.				
<b>FY 2015 Plans:</b> Continue integration of 2 UGNT shelters. Complete contractor DT&E of 2 UGNT shelters for delivery for initial S2E2 integration in 1QFY16.				
<b>FY 2016 Plans:</b> Complete integration and deliver 2 UGNT trailers to S2E2. Begin final testing and integration of hardware and software into the third UGNT trailer.				
<b>Title:</b> Systems Engineering/On-Orbit Support & Testing		10.856	8.440	5.787
<b>Description:</b> Support costs include such activities as, on-orbit NDS sensor integration, check-out/support, testing and system engineering.				
<b>FY 2014 Accomplishments:</b> Provided SE&I, technical support and program technical support for the five NDS mission areas, supported GPS IIF-5, IIF-6 and IIF-7 integration and checkout of NDS sensors during launch and on-orbit activities.				
<b>FY 2015 Plans:</b> Provide SE&I, technical support and program technical support for the five NDS mission areas. Deliver GBD for GPS III SV03 and support SV integration activities. Support GPS IIF-8, IIF-9 and IIF-10 integration checkout of NDS sensors during launch and on-orbit activities.				
<b>FY 2016 Plans:</b>				

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305913F / <i>NUDET Detection System (SPACE)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Provide SE&I, technical support and program technical support for the five NDS mission areas. Deliver GBD for GPS III SV04, SV05, and support SV integration activities. Support to GPS IIF 11 and 12, integration checkout of NDS sensors during launch and on-orbit activities.			
<b>Accomplishments/Planned Programs Subtotals</b>	42.506	20.405	14.447

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

<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPAF: BA03: Line Item # 836750: <i>Nudet Detection Sys Space</i>	4.415	4.656	5.095	-	5.095	4.432	6.405	6.519	6.634	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**  
The USNDS Acquisition Strategy is to develop, integrate, field and sustain USNDS satellite sensors and USNDS ground data processing and distribution hardware and software as well as mission operational and technical program support to sustain the USNDS capability on GPS and DSP; funding is sent by Military Interdepartmental Purchase Request (MIPR) from DoD and Department of Energy (DOE) to Sandia, Lawrence Livermore, and Los Alamos National Laboratories and other agencies on existing DOE/National Nuclear Security Administration (NNSA) contracts.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305913F / NUDET Detection System (SPACE)	<b>Project (Number/Name)</b> 672808 / Nuc Detonation Det Sys (sensors)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ICADS and GNT/UGNT	MIPR	Sandia National Laboratory : Albuquerque, NM	-	31.650	Nov 2013	11.965	Nov 2014	8.660	Nov 2014	-		8.660	Continuing	Continuing	-
SABRS	MIPR	Various : Various,	-	-		-		-		-		-	-	-	-
Completed NDS Development Efforts	Various	Various : Various	-	-		-		-		-		-	-	-	-
SE&I	C/CPAF	SAIC : San Diego, CA	-	1.516	Dec 2013	1.414	Dec 2014	1.460	Dec 2014	-		1.460	Continuing	Continuing	-
<b>Subtotal</b>			-	33.166		13.379		10.120		-		10.120	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Testing	Various	17th Test Squadron, JITC : Schriever AFB, CO	-	0.377	Dec 2013	0.267	Dec 2014	0.477	Dec 2015	-		0.477	Continuing	Continuing	-
On-orbit Sensor Testing	MIPR	Various : LANL, SNL, NM	-	2.652	Mar 2014	2.959	Mar 2015	1.700	Mar 2016	-		1.700	Continuing	Continuing	-
<b>Subtotal</b>			-	3.029		3.226		2.177		-		2.177	-	-	-





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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305913F / NUDET Detection System (SPACE)	<b>Project (Number/Name)</b> 672808 / Nuc Detonation Det Sys (sensors)

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
UGNT 1 Integration & Delivery																												
UGNT Maintenance/Training System Delivery																												
ICADS GPS III & LCS/OCX Delivery																												
UGNT 2 Integration & Delivery																												
UGNT Test Readiness Review																												
UGNT 1&2 to SBIRS Mobile Ground System																												
UGNT 3 Integration & Delivery																												
UGNT 3 to SBIRS Mobile Ground System																												
UGNT 4-5 Integration & Delivery																												
UGNT Initial Operations Capability																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305913F / NUDET Detection System (SPACE)	<b>Project (Number/Name)</b> 672808 / Nuc Detonation Det Sys (sensors)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
UGNT 1 Integration & Delivery	3	2014	1	2016
UGNT Maintenance/Training System Delivery	4	2014	3	2015
ICADS GPS III & LCS/OCX Delivery	3	2015	4	2015
UGNT 2 Integration & Delivery	4	2015	2	2016
UGNT Test Readiness Review	4	2015	1	2016
UGNT 1&2 to SBIRS Mobile Ground System	2	2016	2	2016
UGNT 3 Integration & Delivery	1	2016	1	2017
UGNT 3 to SBIRS Mobile Ground System	1	2017	2	2017
UGNT 4-5 Integration & Delivery	1	2018	4	2018
UGNT Initial Operations Capability	1	2019	1	2019

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305940F / <i>Space Situation Awareness Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	11.911	11.408	20.077	-	20.077	8.583	-	-	-	-	51.979
67A017: <i>Sensor Service Life Extension Program</i>	-	11.911	11.408	20.077	-	20.077	8.583	-	-	-	-	51.979
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

In FY 2016, Project 67A017, Sensor Service Life Extension Program, includes a new start effort for Space Situational Awareness (SSA) Ops Demo.

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

Space Situational Awareness (SSA) is knowledge of all aspects of space related to operations. As the foundation for space control, SSA encompasses surveillance of all space objects and activities; detailed reconnaissance of specific space assets; monitoring space environmental conditions; monitoring cooperative space assets; intelligence on adversary space operations; and conducting integrated command, control, communications, processing, analysis, dissemination, and archiving activities. Program Element 0305940F, Space Situational Awareness Operations, fields, upgrades, operates and maintains Air Force sensors and information integration capabilities within the SSA network while companion program element 0604425F, Space Situational Awareness Systems, develops new network sensors and improved information integration capabilities across the network. Activities funded in the SSA Operations program element focus on surveillance of objects in earth orbit to aid tasks including satellite tracking; space object identification; tracking and cataloging; satellite attack warning; notification of satellite flyovers to U.S. forces; space treaty monitoring; and technical intelligence gathering.

The Sensor Service Life Extension Programs (SLEP) in this program element fund efforts to upgrade and extend the life of operational SSA sensors, as needed. These SLEPs include, but are not limited to, programs that extend the serviceable life of assets and maintain critical capability by replacing aging and increasingly unsustainable components with modern and sustainable equipment. SLEPs may incorporate equipment which inherently includes technological advances resulting in enhanced or increased capabilities. In addition, the SLEP itself may be designed to increase certain capabilities. The Eglin SLEP, and Ground-based Electro Optical Deep Space Surveillance (GEODSS) are representative of sensor systems in the SLEP project. As the need arises in the execution year, funds in this project may be used to begin sensor life extension programs on additional efforts.

In FY 2016, Project 67A017, Sensor Service Life Extension Program, includes a new start effort for SSA Ops Demo. The SSA Ops Demo creates a survivable architecture which provides overlapping, assured, and viable surveillance options for executing simultaneous safety of flight and event response. The demonstration develops software modifications to exploit data from legacy systems and demonstrates automated cross-sensor tipping and cueing around the globe.

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.

The FY2016 funding request was reduced by \$0.651 million to account for the availability of prior execution balances.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305940F / <i>Space Situation Awareness Operations</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	12.684	11.596	10.862	-	10.862
Current President's Budget	11.911	11.408	20.077	-	20.077
Total Adjustments	-0.773	-0.188	9.215	-	9.215
• Congressional General Reductions	-	-0.188			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.773	-			
• Other Adjustments	-	-	9.215	-	9.215

**Change Summary Explanation**

The FY2016 funding request was reduced by \$.651 million to account for the availability of prior execution balances  
 FY2016: Added SSA Operations Demonstration project (+\$6.0M)  
 FY2016: Zero Based Transfer from Procurement to RDTE (+\$4.0M)

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> Eglin SLEP</p> <p><b>Description:</b> The Eglin SLEP extends the operational life of the AN/FPS-85 Radar, located at Eglin AFB, through 2018. The program performs upgrades to the hardware and software of the radar system to maintain system performance, operability and sustainment to support USSTRATCOM's Space Surveillance Network (SSN) near earth and deep space metric tracking and space object identification (SOI) missions.</p> <p><b>FY 2014 Accomplishments:</b> Completed build and integration of 15 CAT 1 deficiencies, updated and verified tech orders, and completed formal Developmental Test and Evaluation (DT&amp;E).</p> <p><b>FY 2015 Plans:</b> Correcting any deficiencies from DT&amp;E. Conducting Force Development Evaluation (FDE) and Trial Period. Achieving Operational Acceptance and conduct contract closeout.</p>	7.572	1.412	-
<p><b>Title:</b> HUSIR</p>	0.203	-	-

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0305940F / <i>Space Situation Awareness Operations</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> The HUSIR program upgrades the Haystack radar's X-band 1 MHz bandwidth system by adding a W-band 8GHz capability and enhancing imaging resolution to support SSN object characterization and tracking.</p> <p><b>FY 2014 Accomplishments:</b> Completed W-Band I&amp;T Testing, performed AF Radar acceptance W-Band Military Utility Assessment (MUA). Engaged in dual-band trial period. J65 certification completed the project on 28 Feb 2014.</p>				
<p><b>Title:</b> SSA Ops Demo</p> <p><b>Description:</b> The SSA Operational Demonstration creates a survivable architecture which provides overlapping, assured, and viable surveillance options for executing simultaneous safety of flight and event response. The demonstration develops software modifications to exploit data from legacy systems and demonstrates automated cross-sensor tipping and cueing around the globe.</p> <p><b>FY 2016 Plans:</b> Will develop tip and cue software upgrades and begin preparations for follow-on test/demonstration. This is a new start in FY16.</p>		-	-	5.960
<p><b>Title:</b> GEODSS SLEP</p> <p><b>Description:</b> The GEODSS effort extends the operational life of the Ground Based Electro-Optical Deep Space Surveillance System (GEODSS). It replaces the aging Sensor Controller Group (SCG), Data Processing Group (DPG), Data Communications Group (DCG), and other unsupportable subsystems as required to maintain SSN tracking capabilities for objects in deep space and geosynchronous orbits.</p> <p><b>FY 2014 Accomplishments:</b> Completed Phase I of the SLEP, which included replacing the Sensor Controller Group.</p> <p><b>FY 2015 Plans:</b> Awarding contract for GEODSS SLEP Phase II, which includes replacing the DPG.</p> <p><b>FY 2016 Plans:</b> Will continue software development, conduct integration and development testing for GEODSS SLEP Phase II.</p>		4.136	9.996	14.117
<b>Accomplishments/Planned Programs Subtotals</b>		11.911	11.408	20.077

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0305940F / <i>Space Situation Awareness Operations</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF: BA03: Line Item #: 836790: <i>Space Mods Space</i>	-	3.124	-	-	-	2.172	-	-	-	-	5.313

**Remarks**

The procurement funds will be used to acquire, install and test, mod kits for sites 2 and 3 of the GEODSS SLEP.

**E. Acquisition Strategy**

The Eglin SLEP effort is replacing key radar items via an option on the Systems Engineering and Sustainment Integrator (SENSOR) contract, competitively awarded to ITT Corporation (now Exelis) in 2002. The Air Force uses the SENSOR contract for sustaining and upgrading various Air Force systems, including the Eglin radar. The radar continues to be operational during the SLEP.

The Massachusetts Institute of Technology's Lincoln Laboratory (MIT/LL), a non-profit Federally-Funded Research & Development Center, performed the HUSIR effort under a master contract with the Air Force Life Cycle Management Center, in conjunction with support from other agencies as required. This effort was considered applied research under that contract. MIT/LL transferred ownership of the radar to the Air Force but continues to operate it as part of its Lincoln Space Surveillance Complex per contract with the Air Force. MIT/LL is responsible for operations and sustainment of the upgraded Haystack radar. The upgrade effort was completed on 28 Feb 2014.

The GEODSS SLEP was awarded as an Engineering Change Proposal on the SENSOR contract. The GEODSS SLEP uses a phased development and deployment strategy to reduce risk. The system is in operation during the SLEP and is considered post-Milestone C.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305940F / <i>Space Situation Awareness Operations</i>	<b>Project (Number/Name)</b> 67A017 / <i>Sensor Service Life Extension Program</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Eglin architecture development and life extension	C/CPAF	Exelis/TBD : Colorado Springs, CO	-	5.294	Jan 2014	0.627	Dec 2014	-		-		-	-	5.921	-
HUSIR design and build	SS/FP	MIT Lincoln Lab : Lexington, MA	-	0.203	Jan 2014	-		-		-		-	-	0.203	-
GEOSS design, development and life extension	C/CPIF	Exelis/TBD : Colorado Springs, CO	-	2.016	Feb 2015	8.792	Jan 2015	12.362	Nov 2015	-		12.362	Continuing	Continuing	-
Tip & Cue software updates	C/TBD	Exelis/TBD : Colorado Springs, CO	-	-		-		4.524	Dec 2015	-		4.524	Continuing	Continuing	-
Globus II SLEP	C/CPAF	Exelis : Colorado Springs, CO	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	7.513		9.419		16.886		-		16.886	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development review and management/L3	C/FP	L3 : Billerica, MA	-	-		-		-		-		-	-	-	-
Technical review and management/ETASS	C/CPAF	Jacobs Technology : Tullahoma, TN	-	0.822	Jan 2014	0.547	Jan 2015	0.997	Jan 2016	-		0.997	Continuing	Continuing	-
Technical engineering/ MISC/JPL/travel	Various	MITRE : Various,	-	1.739	Oct 2013	0.336	Jan 2015	-		-		-	-	2.075	-
<b>Subtotal</b>			-	2.561		0.883		0.997		-		0.997	-	-	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305940F / <i>Space Situation Awareness Operations</i>	<b>Project (Number/Name)</b> 67A017 / <i>Sensor Service Life Extension Program</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Support	Various	17th Test Squadron : SAFB, CO	-	0.194	Jan 2015	-		-		-		-	-	0.194	-
<b>Subtotal</b>			-	0.194		-		-		-		-	-	0.194	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development review and managemnet/PASS	C/FP	Odyssey Systems : Wakefield, MA	-	0.620	Apr 2014	0.284	Jan 2015	0.300	Jan 2016	-		0.300	Continuing	Continuing	7.788
Specialized Cost Services (SCS)	C/FP	Tecolote : Lexington,MA ColSpgs,CO,	-	0.474	Oct 2013	0.472	Nov 2014	0.480	Jan 2016	-		0.480	-	1.426	3.561
Program Office Mgmt/ Infrastructure (PMA)	Various	AFLCMC : Lexington,MA ColSpgs,CO,	-	0.549	Jul 2014	0.350	May 2015	0.400	Jan 2016	-		0.400	Continuing	Continuing	16.626
Technical Support (LL)	SS/FP	MIT Lincoln Laboratory : Lexington, MA	-	-		-		1.014	Dec 2015	-		1.014	Continuing	Continuing	-
<b>Subtotal</b>			-	1.643		1.106		2.194		-		2.194	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>		-	11.911	11.408	20.077	-	-	20.077	-

**Remarks**



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305940F / <i>Space Situation Awareness Operations</i>	<b>Project (Number/Name)</b> 67A017 / <i>Sensor Service Life Extension Program</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Eglin Phase I CSPU IOC																												
HUSIR System Acceptance Test																												
HUSIR X and W Band Ops																												
GEODSS Phase II Development																												
SSA Ops Demo																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0305940F / <i>Space Situation Awareness Operations</i>	<b>Project (Number/Name)</b> 67A017 / <i>Sensor Service Life Extension Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Eglin Phase I CSPU IOC	1	2015	2	2015
HUSIR System Acceptance Test	1	2014	1	2014
HUSIR X and W Band Ops	1	2014	2	2014
GEODSS Phase II Development	2	2015	3	2017
SSA Ops Demo	2	2016	4	2017

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Development</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	-	4.938	-	-	-	-	-	-	-	Continuing	Continuing
676002: <i>Cyber Systems Modernization</i>	-	-	4.938	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**MDAP/MAIS Code:**  
**Other MDAP/MAIS Code(s):** N42

**Note**  
 In FY 2016, 676002, Cyber Systems Modernization, efforts were transferred to PE 0306250F, Cyber Operations Technology Development, 646008, US Cyber Command Technology Development, to align all USCYBERCOM investment funding into one Program Element and WSC.

**A. Mission Description and Budget Item Justification**  
 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. Emphasis is on providing component and subsystem maturity prior to integration in major and complex systems and may involve risk reduction initiatives.

USCYBERCOM in conjunction with the Services and National Agencies will develop and expand Infrastructure modules to support Cyber Mission Forces.

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.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Development</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	-	4.938	9.885	-	9.885
Current President's Budget	-	4.938	-	-	-
Total Adjustments	-	-	-9.885	-	-9.885
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-9.885	-	-9.885

**Change Summary Explanation**

Beginning in FY16 all funding transferred from PE 28059F, BA07, WSC 676002 to PE 36250F, BA04, WSC 646008

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
<b>Title:</b> Defend the Nation	-	4.938	-	-	-
<b>Description:</b> 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, and defensive cyber capabilities.					
<b>FY 2014 Accomplishments:</b> N/A					
<b>FY 2015 Plans:</b> Supports development, prototyping, and testing of tools for Defend the Nation cyber operations. Supports advanced, transition and technology assessment of 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.					
<b>FY 2016 Base Plans:</b> N/A					
<b>FY 2016 OCO Plans:</b>					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Development</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	-	4.938	-	-	-

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

**Remarks**

**E. Acquisition Strategy**  
Contracts are 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 contracting offices, COCOM contracting offices and NSA.

**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.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>												<b>Date: February 2015</b>			
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Development</i>					<b>Project (Number/Name)</b> 676002 / <i>Cyber Systems Modernization</i>						
<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Defend the Nation	Various	Other Partners, Various : Ft. Meade, MD	-	-		4.938	Dec 2014	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		4.938		-		-		-	-	-	-
<b>Support (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
<b>Management Services (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
<b>Project Cost Totals</b>			-	-		4.938		-		-		-	-	-	-
<b>Remarks</b>															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Development</i>	<b>Project (Number/Name)</b> 676002 / <i>Cyber Systems Modernization</i>

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

Defend the Nation	[REDACTED]																											
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0306250F / <i>Cyber Operations Technology Development</i>	<b>Project (Number/Name)</b> 676002 / <i>Cyber Systems Modernization</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Defend the Nation	1	2015	4	2015



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0308699F / <i>Shared Early Warning (SEW)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	1.060	1.157	0.853	-	0.853	1.429	1.382	1.262	1.285	Continuing	Continuing
674838: <i>Shared Early Warning System</i>	-	1.060	1.157	0.853	-	0.853	1.429	1.382	1.262	1.285	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Shared Early Warning System (SEWS) is the result of Presidential foreign policy initiatives which began in 1996. The SEWS continues to provide Theater Combatant Commanders and foreign nation customers direct operational benefit by improving the architectural design and equipment thereby providing enhanced mission capabilities (i.e., expanded coverage, integration with active defense systems, and radar integration). Foreign customer arrangements are negotiated with individual countries on a bilateral basis to provide selected region-specific missile warning information. SEWS Integration and Test facility is kept current by enhancing systems to improve analysis of real world events. To enhance mission capability the SEWS program tests the Integrated Broadcast Service (IBS) migration to Common Interactive Broadcast (CIB), mandatory crypto upgrades, SEWS integration with various radar systems, and the transition to "coalition-based" warning.

Activities also 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 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.

The FY2016 funding request was reduced by \$0.362 million to account for the availability of prior execution balances.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	1.060	1.212	1.221	-	1.221
Current President's Budget	1.060	1.157	0.853	-	0.853
Total Adjustments	-	-0.055	-0.368	-	-0.368
• Congressional General Reductions	-	-0.055			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.368	-	-0.368

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0308699F / <i>Shared Early Warning (SEW)</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p><b>Title:</b> Shared Early Warning System (SEWS)</p> <p><b>Description:</b> Development of SEWS common architecture and SEWS initiatives as identified by theater commanders.</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Continued to investigate and integrate Unified Combatant Command (COCOM) validated requirements and system enhancements (e.g., Radiant Mercury (RM))</li> <li>- Continued to evaluate alternative solutions and approaches for integrated infrared/radar architectures. Tasks included but were not limited to: SEW-Radar (SEW-R) test and fielding; integration and test of redesign to improve and increase performance capabilities; and updating the rule set in the Cross Domain Solutions (CDS) to comply with data disclosure.</li> <li>- Conducted SEW-R developmental work, including conducting studies to evaluate upgrades to SEW-R. Constructive results from kinematic correlator testing were provided to the Theater Missile Warning (TMW) Configuration Control Board (CCB) and to Defense Information Systems Agency (DISA) for fix actions.</li> <li>- Designed the next phase of the Common Message Format (CMF) specification implementation, including development of Joint Range Extension Application Protocol (JREAP) B implementation to handle CMF.</li> <li>- Continued the development analysis and test of new methods to increase system accuracy. With focus upon source data and radar integration.</li> <li>- Completed development and testing of the Secondary Distribution Facility (SDF) capability including initial integration with CENTCOM (Central Command) Partner Network (CPN).</li> <li>- Completed Force Protection Tiered Notification System (FPTNS) development and tested/integrated Phase Two, the "one-to-many".</li> <li>- Continued Tactical Display Processor (TDP) Global Command &amp; Control System-Joint (GCCS-J) development including, the TDP/GCCS 3D/Agile Client, and testing of changes for CMF.</li> <li>- Completed RM development, testing and integration of the "P3" rule set; continued development of the CMF capability.</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue to investigate and integrate COCOM validated requirements and system enhancements (e.g., Radiant Mercury)</li> <li>- Continue to evaluate alternative solutions and approaches for integrated infrared/radar architectures. Tasks will include but not limited to: SEW-R test and fielding; integration and test of redesign to improve and increase</li> </ul>	1.060	1.157	0.853	-	0.853

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0308699F / <i>Shared Early Warning (SEW)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p>performance capabilities; and updating the rule set in the Cross Domain Solutions (CDS) to comply with data disclosure.</p> <ul style="list-style-type: none"> <li>- Continue SEW-Radar developmental work. Work will continue on the kinematic correlator development and test; and completion of radar to CDF design and testing.</li> <li>- Continue design, test SEWS architecture for CMF and CIB system-wide, which includes design impacts to RM, Radios, GCCS, SEWD.</li> <li>- Continue development and testing of new methods to increase system accuracy.</li> <li>- Complete FPTNS Phase Two "one-to-many"; including CDS fielding and testing of the capability in the CENTCOM architecture.</li> <li>- Begin development of FPTNS Phase Three, "auto load".</li> <li>- Test revisions of 3D/Agile Client for TDP (GCCS-J).</li> <li>- Design and test the Deployable SEWS Suite (DSS).</li> <li>- Continue RM development including but not limited to CMF, V 6.0 and "exclusion".</li> </ul> <p><b>FY 2016 Base Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue to investigate and integrate COCOM validated requirements and system enhancements (e.g., Radiant Mercury)</li> <li>- Continue to evaluate alternative solutions and approaches for integrated infrared/radar architectures. Tasks will include but not limited to: SEW-R test and fielding; integration and test of redesign to improve and increase performance capabilities; and updating the rule set in the Cross Domain Solutions (CDS) to comply with data disclosure.</li> <li>- Continue SEW-R developmental work.</li> <li>- Continue design, test, implementation of SEWS architecture for CMF and CIB, which includes impacts to RM, Radios, GCCS, SEWD.</li> <li>- Continue development and testing of new methods to increase system accuracy.</li> <li>- Test revisions of enhancements not limited to 3D/Agile Client for TDP (GCCS-J).</li> <li>- Complete design of the Deployable SEWS Suite (DSS).</li> <li>- Continue RM development including but not limited to CMF, JREAP B, Real Time, Depupe.</li> </ul> <p><b>FY 2016 OCO Plans:</b> N/A</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	1.060	1.157	0.853	-	0.853

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0308699F / <i>Shared Early Warning (SEW)</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF: BA07: Line Item # 838010: <i>Shared Early Warning Acquisition</i>	0.276	0.329	0.220	-	0.220	0.407	0.391	0.351	0.357	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

The acquisition strategy builds on existing capabilities using evolutionary acquisition to modernize and sustain SEWS.

**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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0308699F / Shared Early Warning (SEW)				674838 / Shared Early Warning System								
<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
System Development	C/CPIF	Lockheed Martin : Colorado Springs, CO	-	0.249	Oct 2013	0.649	Oct 2014	0.340	Oct 2015	-		0.340	Continuing	Continuing	-	
Integration and Modernization	MIPR	US Navy : San Diego, CA	-	0.487	Mar 2014	0.197	Mar 2015	0.191	Mar 2016	-		0.191	Continuing	Continuing	-	
Additional Product Development	MIPR	Various : Colorado Springs, CO	-	0.090	Sep 2014	0.079	Sep 2015	0.081	Sep 2016	-		0.081	Continuing	Continuing	-	
<b>Subtotal</b>			-	0.826		0.925		0.612		-		0.612	-	-	-	
<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Systems Engineering	SS/CPFF	MITRE : Colorado Springs, CO	-	0.160	Nov 2013	0.160	Nov 2014	0.160	Nov 2015	-		0.160	Continuing	Continuing	-	
Program Management Administration	C/Various	Various : Colorado Springs, CO	-	0.074	May 2014	0.072	May 2015	0.081	May 2016	-		0.081	Continuing	Continuing	-	
<b>Subtotal</b>			-	0.234		0.232		0.241		-		0.241	-	-	-	

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force								<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0308699F / <i>Shared Early Warning (SEW)</i>			<b>Project (Number/Name)</b> 674838 / <i>Shared Early Warning System</i>					
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>		
<b>Project Cost Totals</b>	-	1.060	1.157	0.853	-	0.853	-	-	-		

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0308699F / <i>Shared Early Warning (SEW)</i>	<b>Project (Number/Name)</b> 674838 / <i>Shared Early Warning System</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
SEW-Radar (SEW-R) Centralized Distribution Facility (CDF) Design/Development	████████																											
SEW-R CDF Integration/Test	████████████████																											
SEW-R Correlation Design/Development	████████████████																											
SEW-R Correlation Integration/Test					████████████████																							
Common Interactive Broadcast (CIB)/Common Message Format (CMF) Radios Integration/Test					████████																							
CMF/CIB Radios Integration/Test									████████																			
CMF/CIB RM Design/Development	████████████████																											
CMF/CIB RM Integration/Test					████████																							
CMF/CIB RM Follow on Design/Development													████████████████															
CMF/CIB RM Follow on Integration/Test																	████████											
CMF/CIB Global Command and Control System (GCCS) Design/Development	████████████████																											
CMF/CIB GCCS Integration/Test					████████																							
CMF/CIB Combined Architecture Integration/Test					████████████████																							
Accuracy Improvements Design/Development	████████																											
Accuracy Improvements Integration/Test					████████████████																							
Accuracy Improvements Design/Development (1)									████████████████████																			
Accuracy Improvement Integration/Test (1)													████████████████															
CENTCOM (Central Command) Partner Network (CPN) Intergration/Test	████████																											

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0308699F / Shared Early Warning (SEW)	<b>Project (Number/Name)</b> 674838 / Shared Early Warning System
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Secondary Distribution Facility (SDF) Design/Development	■																											
SDF Integration/Test		■	■	■																								
Force Protection Tiered Notification System (FPTNS) Phase 3 Design/Development								■	■	■	■																	
FPTNS Phase 3 Integration/Test														■	■													
Tactical Display Processor (TDP) Design/Development	■	■	■	■																								
TDP Integration/Testing							■	■	■																			
Deployable SEWS Suite (DSS) Design/Development							■	■	■																			
DSS Integration/Test										■	■	■																
DSS Follow On Integration/Test																										■	■	
DSS Follow On Design/Development																	■	■	■									
Radiant Mercury (RM) Joint Range Extension Application Protocol (JREAP) B Design/Development				■	■	■																						
RM JREAP B Integration/Testing							■	■																				
RM Real Time Filter Design/Development							■	■	■																			
RM Real Time Filter Integration/Testing												■	■															
RM Deduping Design/Development										■	■	■																
RM Deduping Integration/Testing														■	■													
RM Network Outputs Design/Development														■	■	■												
RM Network Outputs Integration/Testing																	■	■										



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0308699F / Shared Early Warning (SEW)	<b>Project (Number/Name)</b> 674838 / Shared Early Warning System

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SEW-Radar (SEW-R) Centralized Distribution Facility (CDF) Design/Development	1	2014	2	2014
SEW-R CDF Integration/Test	2	2014	3	2015
SEW-R Correlation Design/Development	1	2014	2	2015
SEW-R Correlation Integration/Test	3	2015	3	2016
Common Interactive Broadcast (CIB)/Common Message Format (CMF) Radios Integration/Test	4	2014	1	2015
CMF/CIB Radios Integration/Test	4	2015	2	2016
CMF/CIB RM Design/Development	1	2014	2	2015
CMF/CIB RM Integration/Test	2	2015	4	2015
CMF/CIB RM Follow on Design/Development	2	2018	2	2019
CMF/CIB RM Follow on Integration/Test	3	2019	4	2019
CMF/CIB Global Command and Control System (GCCS) Design/Development	1	2014	1	2015
CMF/CIB GCCS Integration/Test	2	2015	4	2015
CMF/CIB Combined Architecture Integration/Test	4	2014	4	2015
Accuracy Improvements Design/Development	1	2014	3	2014
Accuracy Improvements Integration/Test	4	2014	4	2015
Accuracy Improvements Design/Development (1)	4	2015	1	2018
Accuracy Improvement Integration/Test (1)	1	2018	2	2019
CENTCOM (Central Command) Partner Network (CPN) Intergration/Test	1	2014	4	2014
Secondary Distrubition Facility (SDF) Design/Development	1	2014	1	2014
SDF Integration/Test	2	2014	1	2015
Force Protection Tiered Notification System (FPTNS) Phase 3 Design/Development	3	2015	1	2017

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0308699F / Shared Early Warning (SEW)	<b>Project (Number/Name)</b> 674838 / Shared Early Warning System
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Events	Start		End	
	Quarter	Year	Quarter	Year
FPTNS Phase 3 Integration/Test	2	2017	4	2017
Tactical Display Processor (TDP) Design/Development	1	2014	2	2015
TDP Integration/Testing	2	2015	1	2016
Deployable SEWS Suite (DSS) Design/Development	1	2015	1	2016
DSS Integration/Test	1	2016	4	2016
DSS Follow On Integration/Test	2	2019	4	2019
DSS Follow On Design/Development	2	2018	2	2019
Radiant Mercury (RM) Joint Range Extension Application Protocol (JREAP) B Design/Development	4	2014	3	2015
RM JREAP B Integration/Testing	3	2015	4	2015
RM Real Time Filter Design/Development	3	2015	3	2016
RM Real Time Filter Integration/Testing	4	2016	1	2017
RM Deduping Design/Development	2	2016	2	2017
RM Deduping Integration/Testing	3	2017	4	2017
RM Network Outputs Design/Development	2	2017	2	2018
RM Network Outputs Integration/Testing	3	2018	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron
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COST (\$ in Millions)	Prior Years <sup>(+)</sup>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	1,483.349	47.700	-	33.962	-	33.962	58.905	72.849	49.231	2.277	-	1,748.273
675244: C-130 CNS/ATM	4.929	47.700	-	-	-	-	-	-	-	-	-	52.629
675248: C-130 VAAP INCREMENT 1	0.000	-	-	33.962	-	33.962	58.905	72.849	49.231	2.277	-	217.224

**MDAP/MAIS Code:** 298

<sup>(+)</sup> The sum of all Prior Years is \$1478.420 million less than the represented total due to several projects ending

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

Reflect funding for the C-130 Avionics Modernization Program (AMP); the FY15PB C-130 Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) program; and the FY16 PB C-130H Viability and Airspace Access Program (VAAP) Increment 1 modification.

Note, in the FY16 PB, the FY15 PB C-130 CNS/ATM program has been updated and renamed C-130H VAAP Increment 1.

All of PE 41115F FY14 RDT&E funds (\$47.7M--of which \$47.3M is AMP and \$0.4M is CNS/ATM) are loaded under the C-130 CNS/ATM program, and will be used to the execute the C-130H VAAP Increment 1 mod.

The C-130 AMP RDT&E funding has been deleted as a result of proposed program cancellation in the FY13 PB. However, Congress added \$47.3M RDT&E in FY14 to continue C-130 AMP.

FY13 PB "Optimize" and FY14 PB "Minimize" C-130 CNS/ATM programs were proposed new start in-lieu-of C-130 AMP, and provided CNS/ATM solution for the legacy C-130H combat delivery fleet, addressed select obsolescence issues, and retained the navigator position. However, these new start programs did not receive congressional approval.

FY15 NDAA and Appropriation Bill allow AF to use prior and current-year AMP funds (RDT&E and APAF) for safety and airspace compliance modification programs (i.e., the FY15 PB C-130 CNS/ATM program and FY16 PB C-130 VAAP Increment 1 mod).

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.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	47.700	-	12.378	-	12.378
Current President's Budget	47.700	-	33.962	-	33.962
Total Adjustments	-	-	21.584	-	21.584
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	21.584	-	21.584

**Change Summary Explanation**

The Air Force accelerated the C-130 VAAP Increment 1 program by adding \$21,584M in FY16; these funds allow the ADS-B Out phase of the program to deliver the first airspace compliant RDT&E aircraft in FY17 (two years earlier than the FY15 PB program).

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0401115F / C-130 Airlift Squadron				Project (Number/Name) 675244 / C-130 CNS/ATM			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675244: C-130 CNS/ATM	4.929	47.700	-	-	-	-	-	-	-	-	-	52.629
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Note**

All of PE 41115F FY14 RDT&E funds (\$47.7M--of which \$47.3M is AMP congressional add and \$0.4M is CNS/ATM) are loaded under the C-130 CNS/ATM program, and will be used to execute the C-130H VAAP Increment 1 mod.

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

The C-130 Avionics Modernization Program (AMP) RDT&E funding has been deleted as a result of proposed program cancellation in the FY13 PB; however, Congress has not approved C-130 AMP's cancellation.

The FY15 PB C-130 Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) programs was a proposed new start in-lieu-of C-130 AMP, provided safety and airspace compliance solution for the legacy C-130H combat delivery fleet, and retained the navigator position.

FY15 NDAA prevented C-130 AMP cancellation, but allowed the Air Force to proceed with an alternate safety and airspace compliance modification program; i.e., the FY15 PB C-130 CNS/ATM program.

In the FY16 PB, the FY15 PB C-130 CNS/ATM program has been updated and renamed C-130H Viability and Airspace Access Program (VAAP) Increment 1.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p><b>Title:</b> C-130 CNS/ATM</p> <p><b>Description:</b> Refine and complete the requirements definition phase of program followed by integration planning.</p> <p><b>FY 2014 Accomplishments:</b> Refine and complete the requirements definition phase of program followed by integration planning.</p> <p><b>FY 2015 Plans:</b> Refine and complete the requirements definition phase of program followed by integration planning.</p> <p><b>FY 2016 Base Plans:</b></p>	47.700	-	-	-	-

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron	<b>Project (Number/Name)</b> 675244 / C-130 CNS/ATM
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
In the FY16 PB, all C-130 CNS/ATM pgm funds and activities have been moved to the C-130H (VAAP) Increment 1 mod.					
<b>Accomplishments/Planned Programs Subtotals</b>	47.700	-	-	-	-

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # C13000: C-130 CNS/ATM	14.200	14.598	-	-	-	-	-	-	-	-	28.798

**Remarks**  
The C-130 CNS/ATM program was renamed/replaced in the FY16 PB with the C-130 Viability and Airspace Access Program (VAAP) Increment 1. All other program funding summary are detailed in the C-130 VAAP Increment 1 program.

**D. Acquisition Strategy**  
The C-130 CNS/ATM program acquisition strategy completed the program in three phases: Phase A, 8.33 kHz radios; Phase B, updated CVR/DFDR; and Phase C, ADS-B Out and Enhanced Mode S. Most of the RDT&E funding was for the ADS-B Out effort.

ADS-B Out: Once integrated, early years primarily involved with defining the program requirements and pre-contract efforts in preparation for the EMD source selection phase. Current schedule reflects the ADS-B Out EMD contract to be awarded, following a competitive source selection, by 2nd quarter FY17.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron	<b>Project (Number/Name)</b> 675244 / C-130 CNS/ATM
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EMD Contract	C/TBD	TBD : ,	0.000	47.300		-		-		-		-	-	47.300	-
<b>Subtotal</b>			0.000	47.300		-		-		-		-	-	47.300	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental Flight Test	TBD	Not specified. : ,	0.000	-		-		-		-		-	-	-	12.404
<b>Subtotal</b>			0.000	-		-		-		-		-	-	-	12.404

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA - Contractor Services	Various	Not specified. : ,	4.329	0.339		-	Mar 2015	-		-		-	-	4.668	4.688
PMA - Gov't Cost	Various	Not specified. : ,	0.600	0.061		-	Mar 2015	-		-		-	-	0.661	0.661
<b>Subtotal</b>			4.929	0.400		-		-		-		-	-	5.329	5.349

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			4.929	47.700	-	-	-	-	-	52.629	17.753

**Remarks**  
 In the FY16 PB, the FY15 PB New Start "Minimize C-130 Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)" program has been updated and renamed "C-130H Viability and Airspace Access Program (VAAP) Increment 1", and all FY16 FYDP funds are in the C-130 VAAP Increment 1 mod lines.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron	<b>Project (Number/Name)</b> 675244 / C-130 CNS/ATM
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	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
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All of PE 41115F FY14 RDT&E funds (\$47.7M--of which \$47.3M is AMP congressional add and \$0.4M is CNS/ATM) are loaded under the C-130 CNS/ATM program, and will be used to the execute the FY16 PB C-130H VAAP Increment 1 mod.

All FY14 C-130 CNS/ATM program funds were previously on Air Force withhold awaiting further congressional direction on C-130 AMP and the C-130 CNS/ATM program.





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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron	<b>Project (Number/Name)</b> 675244 / C-130 CNS/ATM
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B	3	2015	3	2016
EMD Contract Awards	4	2015	4	2016
Design/Integration	3	2015	3	2017

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron	<b>Project (Number/Name)</b> 675248 / C-130 VAAP INCREMENT 1
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675248: C-130 VAAP INCREMENT 1	-	-	-	33.962	-	33.962	58.905	72.849	49.231	2.277	-	217.224
Quantity of RDT&E Articles		-	-	-	-	-	1	2	1	-		

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

In the FY16 PB, the FY15 PB New Start "Minimize C-130 Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM)" program has been updated and renamed "C-130H Viability and Airspace Access Program (VAAP) Increment 1".

With the FY13 PB's proposed cancellation of the C-130 Avionics Modernization Program (AMP), the C-130H VAAP Increment 1 program addresses Federal Aviation Administration/International Civil Aviation Organization (FAA/ICAO) CNS/ATM mandates and provides a minimal airspace compliance focused program to modify 172 C-130H aircraft with Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipment, 8.33 kHz radios, updated cockpit voice recorder/digital flight data recorders (CVR/DFDR), and Enhanced Mode S.

Note, the Traffic Alert and Collision Avoidance System (TCAS II) is listed in the VAAP Capability Development Document (CDD) as a requirement since it's required for flight operations in airspace controlled by the Federal Aviation Administration (FAA), and airspace controlled by foreign countries; the legacy C-130H fleet currently has TCAS II 7.0 installed.

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 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<b>Title:</b> C-130H VAAP Increment 1	-	-	33.962	-	33.962
<b>Description:</b> Refine and complete the requirements definition phase of the program, followed by pre integration planning, and the pre Engineering, Manufacturing and Development (EMD) phase.					
<b>FY 2014 Accomplishments:</b> Activities deferred pending Congressional direction on C-130 AMP.					
<b>FY 2015 Plans:</b> Refine and complete the requirements definition phase of the program, followed by integration planning.					
<b>FY 2016 Base Plans:</b>					

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron	<b>Project (Number/Name)</b> 675248 / C-130 VAAP INCREMENT 1
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Documentation development, Request for Proposal (RFP) development, and Pre Engineering, Manufacturing and Development (EMD) phase.  <i><b>FY 2016 OCO Plans:</b></i> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	33.962	-	33.962

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• C13000 / C-130: C-130 Viability and Airspace Access Program (VAAP) Increment 1	-	-	-	-	-	-	-	51.543	131.976	213.065	425.384

**Remarks**  
C-130H VAAP Increment 1 Procurement funding begins in FY19.

**D. Acquisition Strategy**  
In the FY16 PB, the C-130 VAAP Increment 1 acquisition strategy changed to perform all upgrades (ADS-B Out, enhanced Mode S, 8.33 kHz radios, and CVR/DVR) as a single umbrella modification, instead of the FY15 PB's three-phase upgrade strategy.

The updated/renamed 172 aircraft (166x C-130Hs and 6x LC-130Hs) C-130H VAAP Increment 1 program is comprised of H3s, H2.5s, H2s and H1s; and includes 127 Air National Guard, and 45 Air Force Reserve aircraft. The modification effort will have 4 prototype aircraft required for accomplishment of the C-130H VAAP Incr 1 Engineering and Manufacturing Development (EMD) phase, with the remaining 168 being production aircraft. The prototype aircraft represent each type of C-130H configuration listed above.

The majority of the RDT&E funds are for ADS-B Out: Once integrated, early years primarily involved with defining the program requirements and pre-contract efforts in preparation for the EMD source selection phase. Current schedule reflects the ADS-B Out EMD contract to be awarded, following a competitive source selection, by 1st quarter FY17.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron	<b>Project (Number/Name)</b> 675248 / C-130 VAAP INCREMENT 1
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
EMD Contract	C/TBD	TBD : ,	0.000	-		-		25.962	Oct 2016	-		25.962	Continuing	Continuing	TBD
Trainers/Training	C/TBD	TBD : ,	0.000	-		-		-		-		-	Continuing	Continuing	50.000
<b>Subtotal</b>			0.000	-		-		25.962		-		25.962	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development Flight Test	TBD	TBD : ,	0.000	-		-		-		-		-	Continuing	Continuing	12.404
<b>Subtotal</b>			0.000	-		-		-		-		-	-	-	12.404

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PMA - contractor Services	Various	Not Specified : ,	0.000	-		-		6.000	Mar 2016	-		6.000	Continuing	Continuing	6.000
PMA - Gov't Cost	Various	Not Specified : ,	0.000	-		-		2.000	Feb 2016	-		2.000	Continuing	Continuing	10.000
<b>Subtotal</b>			0.000	-		-		8.000		-		8.000	-	-	16.000

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			0.000	-	-	33.962	-	33.962	-	-	-

**Remarks**



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401115F / C-130 Airlift Squadron	<b>Project (Number/Name)</b> 675248 / C-130 VAAP INCREMENT 1
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Milestone B	1	2016	1	2017
EMD Contract Awards	1	2017	2	2018
Design/Integration	1	2017	1	2019
Preliminary Design Review	2	2017	3	2017
Critical Design Review	1	2018	2	2018
Developmental Testing	3	2018	2	2019
Functional Configuration Audit	3	2017	1	2019
Milestone C	4	2017	1	2019
Force Development Evaluation (FDE)	3	2017	4	2017
Physical Configuration Audit (PCA)	2	2019	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / <i>C-5 Airlift Squadrons (IF)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	48.617	38.773	42.864	-	42.864	76.805	47.144	5.851	-	-	260.054
675358: <i>C-5 Mission Computer-Mission Sys Equip-Weather Radar</i>	-	48.617	38.773	12.403	-	12.403	11.905	-	-	-	-	111.698
675359: <i>CNS/ATM Mode5 Swift Broadband BLOS/LOS Radio</i>	-	-	-	30.461	-	30.461	64.900	47.144	5.851	-	-	148.356

**Note**

In FY2016, Project 675359, C-5 Communication, Navigation, Surveillance / Air Traffic Management (CNS/ATM), is a new start effort.

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

675358: C-5 Core Mission Computer (CMC)/Weather Radar modification project: Mission computer and weather radar replacement is a comprehensive sustainment modification to mitigate the obsolescence of the current CMC and weather radar. This effort centers on modifying the current mission computer by replacing the Core Processing Module (CPM) cards to obtain sufficient capacity to support integration of new system capabilities with margin for growth by upgrading module cards and correcting any mission essential deficiencies identified during development. Also, the effort includes replacement of the weather radar with a commercial off-the-shelf color weather radar. The modified mission computer will allow for current and future throughput growth of additional processing requirements to meet CY2020 communication, navigation, surveillance/air traffic management mandates.

675359: C-5 Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) modification project: Program is a comprehensive effort to ensure appropriate system design architectures are developed and equipment is installed on the C-5 to allow aircraft operation in accordance with civil airspace access mandates for both the US National Airspace System (NAS) and international civil airspace. Additionally, the program will add equipment to meet outstanding National Security Agency mandates for encryption of voice communications. The C-5 CNS/ATM program ensures systems standardization and interoperability with other DoD systems to the maximum extent possible and directly supports airworthiness certification of the C-5. CNS/ATM requirements include, but are not limited to, capabilities such as automatic dependent surveillance-broadcast out (ADS-B Out), Identification Friend or Foe (IFF) Mode 5, satellite communication equipment replacement, and beyond line-of-sight voice radio replacement. It is anticipated equipment will be predominately commercial off-the-shelf or non-developmental items.

ADS-B Out is a next generation surveillance technology that transitions key aspects of Air Traffic Control from terrestrial based technologies to satellite enabled technologies to provide controllers a more accurate picture of aircraft positioning.

The current ARC-210 radio for VHF voice communications is facing diminishing manufacturing source (DMS) issues and additionally will no longer be capable of providing secure voice communications due to the development of new crypto algorithms. Addition of next generation ARC-210 radios and associated cryptologic equipment will enable the C-5 to meet NSA mandates for secure communications and allow aircrews to continue to communicate securely over VHF, UHF, HF or MILSATCOM.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / <i>C-5 Airlift Squadrons (IF)</i>
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This program is a Budget Activity 7, Operations 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 and subsequent fiscal years.

The FY2016 funding request was reduced by \$15.726 million to account for the availability of prior execution balances.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	48.617	38.773	7.556	-	7.556
Current President's Budget	48.617	38.773	42.864	-	42.864
Total Adjustments	-	-	35.308	-	35.308
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	35.308	-	35.308

**Change Summary Explanation**

FY16: Program adjustments for change in procurement strategy for CMC/WxRdr increases funding by \$4.847M to \$12.403M. Also, addition of CNS/ATM as a new start program increases funding by \$30.461M for a PE total of \$42.864M.

The FY2016 funding request was reduced by \$15.726M to account for availability of prior execution balances in FY15. The reduction was applied to the CNS/ATM modification project, proposed payback in FY2017 and FY2018.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)				<b>Project (Number/Name)</b> 675358 / C-5 Mission Computer-Mission Sys Equip-Weather Radar			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675358: C-5 Mission Computer-Mission Sys Equip-Weather Radar	-	48.617	38.773	12.403	-	12.403	11.905	-	-	-	-	111.698
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The C-5 Core Mission Computer (CMC)/Weather Radar program is a comprehensive sustainment modification to mitigate the obsolescence of the current CMC and weather radar. This effort centers around modifying the current mission computer to obtain sufficient capacity/capability to support integration of new system capabilities with margin for growth by upgrading module cards and correcting any mission essential deficiencies identified during development. Also, the effort includes replacement of the weather radar with a commercial off-the-shelf color weather radar. Mission systems equipment includes, but is not limited to, a redesign of the C-5 lavatory system. Examples of other mission systems equipment include troop seats, crew entry door and ladder, and interior trim.

The current C-5 CMC has reached maximum capacity and cannot integrate required aircraft systems and capabilities to include the weather radar; flight management system (FMS); and communication, navigation, surveillance (CNS)/air traffic management (ATM) requirements. These requirements include capabilities such as the automatic dependent surveillance-broadcast out (ADS-B Out), and identification, friend or foe (IFF) mode 5. The new CMC will allow for current and future throughput growth of additional processing requirements to meet CY 2020 CNS/ATM mandates.

The modification helps to maintain aircraft availability as the new color weather radar replaces the current APS-133 weather radar system, which is experiencing severe diminishing manufacturing source (DMS) issues. Failure to upgrade the CMC to support the 2020 CNS/ATM mandates and a new weather radar will create a significant operational impact. Equipment DMS issues will be resolved to support continued production and installation of requirements for the C-5 fleet. Further, DMS issues will be resolved to support continued operations through studies, bridge buys, life-of-type buys, development, and redesign efforts.

The C-5 Mission Systems Equipment program updates the lavatory system. The current lavatory system suffers inoperability and leakage of liquid sodium hypochlorite causing severe corrosion and burnt wires in the landing gear control panels. A redesign of the Mission Systems Equipment program will increase safety, mitigate risk, and reduce man-hours required to repair extensive damage.

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)**

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Mission Computer and Weather Radar Program	48.617	38.773	12.403	-	12.403

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)	<b>Project (Number/Name)</b> 675358 / C-5 Mission Computer-Mission Sys Equip-Weather Radar

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p><b>Description:</b> Core Mission Computer modification and Weather Radar replacement will enable the C-5 to achieve wartime mission requirements by maintaining fleet availability (mission capable rate) and program management administration (PMA).</p> <p><b>FY 2014 Accomplishments:</b> Supported completion of formal qualification testing, software integration, installation and functional check of hardware, and design and development of aircrew and maintenance training system modifications.</p> <p><b>FY 2015 Plans:</b> Support completion of formal qualification testing, installation and functional check of hardware, design and development of aircrew and maintenance training system modification, and developmental test and evaluation, completing in FY17.</p> <p><b>FY 2016 Base Plans:</b> Will support completion of formal qualification testing, installation and functional check of hardware, design and development of aircrew and maintenance training system modification, developmental test and evaluation, and operational test completing in FY17.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	48.617	38.773	12.403	-	12.403

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA05: Line Item # C00500: C-5 - CMC/WxRadar modification	-	0.495	-	-	-	21.198	29.064	44.385	42.905	Continuing	Continuing
• APAF: BA06: Line Item # C00500: C-5 - CMC/WxRadar modification	-	-	0.397	-	0.397	2.375	1.826	3.116	3.111	-	10.825
• APAF: BA07: Line Item # C00500: C-5 - CMC/WxRadar modification	-	-	-	-	-	0.700	5.100	4.600	-	-	10.400

**Remarks**

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force		Date: February 2015
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0401119F / C-5 Airlift Squadrons (IF)	Project (Number/Name) 675358 / C-5 Mission Computer-Mission Sys Equip-Weather Radar

**D. Acquisition Strategy**

Core Mission Computer/Weather Radar program: Engineering, manufacturing, development (EMD) for the core mission computer and weather radar began in FY13. The acquisition strategy for this project considered every opportunity to use commercial components to modernize the C-5 core mission computer and weather radar and maintain aircraft availability in support of mobility missions worldwide. The strategy is for the prime contractor, Lockheed Martin Aero (LMA), to procure the core mission computer cards and weather radar, integrate and test those components, and install on two (2) EMD aircraft. The LMA negotiations were completed 4 Feb 14 and were placed on contract in March 2014. The contract method is sole source. The contract type is predominately CPIF (Cost Plus Incentive Fee) with some FFP (Firm Fixed Price) elements.

Mission Systems Equipment program: The mission systems equipment redesign requires RDT&E funding for commercial off-the-shelf (COTS) proofing. Funds are required for validation and verification of the lavatory design and installation. The Mission Systems Equipment contract method was competitive through the Defense Technical Information Center (DTIC). Wyle Science, Technical, and Engineering Group was the selected source, and the contract type is Cost Plus Fixed Fee (CPFF).

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)	<b>Project (Number/Name)</b> 675358 / C-5 Mission Computer-Mission Sys Equip-Weather Radar
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Core Mission Computer and Weather Radar Hardware/Software Design, Development, Integration, Data Management, Technical Data Rights, Systems Engineering, and Program Management	SS/ Various	Lockheed Martin Aero : Marietta, GA	-	39.640	Feb 2014	27.330	Mar 2015	3.450	Feb 2016	-		3.450	Continuing	Continuing	-
<b>Subtotal</b>			-	39.640		27.330		3.450		-		3.450	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aircrew and Maintenance Trainers	SS/CPIF	Lockheed Martin Aero : Marietta, GA	-	4.232	Dec 2014	1.896	Aug 2015	0.886	Dec 2015	-		0.886	Continuing	Continuing	-
Other Govt Costs (OGC)	Various	Various : TBD,	-	2.801	Dec 2014	3.108	Aug 2015	2.250	Dec 2015	-		2.250	Continuing	Continuing	-
<b>Subtotal</b>			-	7.033		5.004		3.136		-		3.136	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Developmental and Operational Test and Evaluation	Various	Various : ,	-	-		3.299	Sep 2015	3.798	Jun 2016	-		3.798	Continuing	Continuing	7.451
Qualification Testing	Various	Various : ,	-	-		0.980	Nov 2015	0.460	Jun 2016	-		0.460	Continuing	Continuing	1.620
<b>Subtotal</b>			-	-		4.279		4.258		-		4.258	-	-	9.071



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)	<b>Project (Number/Name)</b> 675358 / C-5 Mission Computer-Mission Sys Equip-Weather Radar

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
EMD Contract Award																												
Preliminary Design Review																												
Critical Design Review																												
Training Development																												
Integrated Developmental/Operational Test and Evaluation																												
Milestone C																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)	<b>Project (Number/Name)</b> 675358 / C-5 Mission Computer-Mission Sys Equip-Weather Radar

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EMD Contract Award	2	2014	2	2014
Preliminary Design Review	1	2015	1	2015
Critical Design Review	1	2015	3	2015
Training Development	1	2014	4	2016
Integrated Developmental/Operational Test and Evaluation	2	2016	1	2017
Milestone C	1	2016	4	2016

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)				<b>Project (Number/Name)</b> 675359 / CNS/ATM Mode5 Swift Broadband BLOS/LOS Radio			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675359: CNS/ATM Mode5 Swift Broadband BLOS/LOS Radio	-	-	-	30.461	-	30.461	64.900	47.144	5.851	-	-	148.356
Quantity of RDT&E Articles	-	-	-	2	-	2	-	-	-	-		

**Note**

In FY2016, Project 675359, CNS/ATM Mode 5 Swift Broadband BLOS/LOS Radio, includes new start efforts.

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

C-5 Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) program: Program is a comprehensive effort to ensure appropriate CNS/ATM system design architectures are developed and equipment is installed on the C-5 to allow aircraft operation in accordance with civil airspace access mandates for both the US National Airspace System (NAS) and international civil airspace. Additionally, the program will add equipment to meet outstanding National Security Agency mandates for encryption of voice communications. The C-5 CNS/ATM program ensures systems standardization and interoperability with other DoD systems to the maximum extent possible and directly supports airworthiness certification of the C-5. CNS/ATM requirements include, but are not limited to, capabilities such as automatic dependence surveillance-broadcast out (ADS-B Out), Identification Friend or Foe (IFF) Mode 5, satellite communication equipment replacement, and beyond line-of-sight voice radio replacement. It is anticipated equipment will be predominately commercial off-the-shelf or non-developmental items.

The current ARC-210 radio for VHF voice communications is facing diminishing manufacturing source (DMS) supply issues and additionally will no longer be capable of providing secure voice communications due to the development of new crypto algorithms. Addition of next generation ARC-210 radios and associated cryptologic equipment will enable the C-5 to meet NSA mandates for secure communications and allow aircrews to continue to communicate securely over VHF, UHF, HF or MILSATCOM.

The current generation of satellites, which support services used on the C-5 to provide oceanic Controller/Pilot Data Link Communications (CPDLC) to Air Traffic Control and Aircraft Communications Addressing and Reporting System (ACARS) beyond-line-of-sight command and control messages will no longer be functional after 2016. The next generation of satellites will accommodate legacy C-5 SATCOM equipment for an interim period of time to allow for integration of upgraded SATCOM equipment compatible with this satellite constellation. Without this modification, the C-5 will be unable to fly oceanic tracks and would be unable to meet aircraft separation distance requirements for civil airspace access.

ADS-B Out is a next generation surveillance technology that transitions key aspects of Air Traffic Control from terrestrial based technologies to satellite enabled technologies to provide controllers a more accurate picture of aircraft positioning. ADS-B Out will allow aircraft to provide continuous broadcast of aircraft position to both controllers and other aircraft equipped with ADS-B In capable avionics. International mandates for ADS-B Out for civil airspace access call for equipage by 2019 with mandates in 2020 for access to the US NAS.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)	<b>Project (Number/Name)</b> 675359 / CNS/ATM Mode5 Swift Broadband BLOS/LOS Radio
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This program is a Budget Activity 7, Operations 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 and subsequent fiscal years.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<b>Title:</b> EMD	-	-	30.461	-	30.461
<b>Description:</b> C-5 CNS/ATM program will install multiple aircraft avionics equipment pieces to enable the C-5 to meet multiple NSA encryption and international/national airspace access mandates while mitigating diminishing manufacturing source issues.					
<b>FY 2014 Accomplishments:</b> N/A					
<b>FY 2015 Plans:</b> N/A					
<b>FY 2016 Base Plans:</b> Support CNS/ATM system design to accommodate incorporation of: ARC-210 Gen V radios, SATCOM replacement equipment, ADS-B Out, and IFF Mode 5 into the C-5. Efforts will include software design as well as hardware analysis for compatibility with existing C-5 system architecture.					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	30.461	-	30.461

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # C00500: C-5 - CNS/ATM modification	-	-	-	-	-	-	8.321	24.196	30.005	Continuing	Continuing
• APAF: BA06: Line Item # C00500: C-5 - CNS/ATM modification	-	-	-	-	-	-	5.761	5.076	4.752	-	-

**Remarks**

**D. Acquisition Strategy**

CNS/ATM program: Engineering, manufacturing, development (EMD) for incorporation of the ARC-210 Gen V radio, SATCOM replacement equipment, ADS-B Out, and IFF Mode 5 into the C-5 begins in FY16. The acquisition strategy for this program will consider every opportunity to use commercial components to modernize the

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / <i>C-5 Airlift Squadrons (IF)</i>	<b>Project (Number/Name)</b> 675359 / <i>CNS/ATM Mode5 Swift Broadband BLOS/LOS Radio</i>
<p>C-5 CNS/ATM equipment to meet mandates for global civil airspace access. The strategy is for the prime contractor, Lockheed Martin Aero (LMA) to procure CNS/ATM equipment, develop software, test and integrate those components, and install on two (2) EMD aircraft. The equipment integration will require RDT&amp;E funding for commercial off-the-shelf and non-developmental item proofing.</p> <p>Milestone Dates: -MDD/ASP Jan 2015 -MS B Sep 2015 -CA EMD Feb 2016 -MS C Apr 2018 -CA PROD Jun 2018</p> <p><b>E. Performance Metrics</b> 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.</p>		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)	<b>Project (Number/Name)</b> 675359 / CNS/ATM Mode5 Swift Broadband BLOS/LOS Radio
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CNS/ATM hardware/ software design, development, integration, data management, technical data rights, systems engineering, and program management,	Various	Lockheed Martin Aero : Marietta, GA	-	-		-		20.320	Feb 2015	-		20.320	Continuing	Continuing	109.045
<b>Subtotal</b>			-	-		-		20.320		-		20.320	-	-	109.045

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Travel	Various	AFLCMC/WLS : Dayton, OH	-	-		-		0.330	Feb 2015	-		0.330	Continuing	Continuing	1.320
Training	Various	Lockheed Martin Aero : Marietta, GA	-	-		-		-	Feb 2015	-		-	Continuing	Continuing	1.200
Other Gov Costs	Various	Various : TBD,	-	-		-		2.126	Feb 2015	-		2.126	Continuing	Continuing	8.504
Peculiar SE	Various	Lockheed Martin Aero : Marietta, GA	-	-		-		-	Feb 2015	-		-	Continuing	Continuing	0.205
Trainers	Various	Lockheed Martin Aero : Marietta, GA	-	-		-		-	Feb 2015	-		-	Continuing	Continuing	9.000
<b>Subtotal</b>			-	-		-		2.456		-		2.456	-	-	20.229

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Test/Qual	Various	Lockheed Martin Aero : Marietta, GA	-	-		-		3.200	Feb 2015	-		3.200	Continuing	Continuing	-
SIL	Various	Various : TBD,	-	-		-		2.400	Feb 2015	-		2.400	Continuing	Continuing	2.700
<b>Subtotal</b>			-	-		-		5.600		-		5.600	-	-	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)	<b>Project (Number/Name)</b> 675359 / CNS/ATM Mode5 Swift Broadband BLOS/LOS Radio

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Material Development					■																							
Milestone B								■																				
Engineering, Manufacturing, and Development (EMD)									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
EMD Contract Awards									■																			
Preliminary Design Review											■	■																
Critical Design Review											■	■																
Training Development																	■	■	■	■	■	■	■	■	■	■	■	■
Integrated Developmental/Operational Test and Evaluation																	■	■	■	■	■	■	■	■	■	■	■	■
Milestone C																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401119F / C-5 Airlift Squadrons (IF)	<b>Project (Number/Name)</b> 675359 / CNS/ATM Mode5 Swift Broadband BLOS/LOS Radio

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Material Development	2	2015	2	2015
Milestone B	4	2015	4	2015
Engineering, Manufacturing, and Development (EMD)	2	2016	1	2019
EMD Contract Awards	2	2016	2	2016
Preliminary Design Review	3	2016	3	2016
Critical Design Review	4	2016	4	2016
Training Development	1	2018	4	2018
Integrated Developmental/Operational Test and Evaluation	1	2018	4	2018
Milestone C	3	2018	3	2018



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401130F / <i>C-17 Aircraft (IF)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	97.134	82.948	54.807	-	54.807	32.877	83.604	100.185	28.973	-	480.528
672569: <i>C-17A Aircraft</i>	-	97.134	82.948	54.807	-	54.807	32.877	83.604	100.185	28.973	-	480.528
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	2	-		

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

The C-17 can perform the entire spectrum of airlift missions and is specifically designed to operate effectively and efficiently in both strategic and theater environments. Airlift provides essential flexibility when responding to contingencies on short notice anywhere in the world. It is a major element of America's national security strategy and constitutes the most responsive means of meeting mobility requirements. Specific tasks associated with the airlift mission include deployment, employment, sustaining support, retrograde, and combat redeployment. Not only can the C-17 deliver outsize cargo to austere tactical environments, but it also reduces ground time during airland operations. The C-17 will perform its airlift mission well into this century.

C-17 RDT&E funding efforts support, but are not limited to: aircraft performance improvements and airspace access mandates (i.e., Communications/Navigation Improvements); flight test activities and facilities; development of solutions for obsolescence and safety of flight issues; systems engineering/program management administration support; support for avionics laboratories; block development/change management; proposal preparation for new projects; cost estimating and engineering/acquisition studies not related to requirements generation.

In FY16, the Efforts in the C-17 R2 part C, "Accomplishments/Planned Programs", transition from Performance Improvement and Obsolescence, Systems Engineering, and Test in FY14 & 15 to link RDT&E funding directly to Programs on the Air Force Acquisition Master List (AML).

As a result, funding on lines that appear as unfunded in FY16 have transitioned to the following Programs: Common Configuration (CC), Communications/Navigation and Capability Mandates(CN/CM), Extended Range Onboard Inert Gas Generating System (ER/OBIGGS)II and Beyond Line of Sight (BLOS).

CC includes several projects: Modernized Replacement Core Integrated Processor (M-RCIP), Communication and Navigation Capability (Comm Nav), Replacement Heads Up Display (RHUD), Identification Friend or Foe (IFF) & Global Air Traffic Management (GATM) updates, and Airdrop Improvements.

CN/CM includes Communication, Navigation, Surveillance & Air Traffic Management (CNS/ATM) which is Automatic Dependent Surveillance Broadcast Out (ADS-B out).

ER OBIGGS II includes Onboard Inert Gas Generating System (OBIGGS) Filter Fire Fix which is a redesign of the OBIGGS II shutoff valve.

BLOS modernization includes satellite communications and increased broadband capabilities. AERO I modernization is multi-channel voice and data delivered via an intermediate-gain antenna.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401130F / <i>C-17 Aircraft (IF)</i>
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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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	97.134	83.773	56.172	-	56.172
Current President's Budget	97.134	82.948	54.807	-	54.807
Total Adjustments	-	-0.825	-1.365	-	-1.365
• Congressional General Reductions	-	-0.825			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-1.365	-	-1.365

**Change Summary Explanation**

FY16 - Reduction due to restructuring the replacement heads-up display development

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Performance Improvement and Obsolescence	74.498	57.273	-	-	-
<b>Description:</b> Continued development of C-17 aircraft performance improvements for its avionics, aircraft and mission systems and the development of solutions to emergent obsolescence and safety of flight issues, airspace access mandates and engineering/acquisition studies not related to requirements generation.					
<b>FY 2014 Accomplishments:</b> Continued development of C-17 aircraft performance improvements/mandates to include projects, but not limited to, RHUD, Instrument Landing System & Flight Control Computer (ILS & FCC), Comm Nav, M-RCIP, and ADS-B out. Completes Airdrop, Comm Nav Capabilities, RCIP and IFF & GATM.					
<b>FY 2015 Plans:</b> Continues development of C-17 aircraft performance improvements/mandates to include projects, but not limited to, RHUD and ADS-B out. Completes ILS & FCC updates. Begins efforts to redesign On-Board Inert Gas					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0401130F I C-17 Aircraft (IF)				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p>Generation System II (OBIGGS II) shut off valve to eliminate the potential for OBIGGS II filter fires and improve fuel efficiency.</p> <p><b>FY 2016 Base Plans:</b> N/A</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>						
<p><b>Title:</b> Systems Engineering/Program Management</p> <p><b>Description:</b> Continuation of Systems Engineering/prime contractor Program Management (SE/PM). Funding supports software updates, system integration, software development, laboratories, test facilities, and programmatic efforts in support of C-17.</p> <p><b>FY 2014 Accomplishments:</b> Continuation of SE/PM. Funding supported software updates, system integration and software development laboratories, test facilities, and programmatic efforts in support of C-17.</p> <p><b>FY 2015 Plans:</b> Continuation of SE/PM. Funding supports software updates, system integration and software development laboratories, test facilities, and programmatic efforts in support of C-17.</p> <p><b>FY 2016 Base Plans:</b> N/A</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>		7.976	9.000	-	-	-
<p><b>Title:</b> Boeing Flight Test</p> <p><b>Description:</b> Continues contractor testing of new capabilities as required. Costs include maintenance on test aircraft, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.</p> <p><b>FY 2014 Accomplishments:</b></p>		8.160	9.175	-	-	-

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0401130F / <i>C-17 Aircraft (IF)</i>				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Continued contractor testing of new capabilities as required. Costs included maintenance on test aircraft, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.  <b>FY 2015 Plans:</b> Continues contractor testing of new capabilities as required. Costs include maintenance on test aircraft, contractor engineering support for test related technical and safety of flight issues, test planning, test analysis and test execution.  <b>FY 2016 Base Plans:</b> N/A  <b>FY 2016 OCO Plans:</b> N/A						
<b>Title:</b> Edwards Flight Test  <b>Description:</b> Continues direct costs of flight testing. The costs include ramp space, fuel, air traffic control, range costs, etc., which are items each weapon system must pay when using Air Force flight test locations.  <b>FY 2014 Accomplishments:</b> Continued direct costs of flight testing. The costs included ramp space, fuel, air traffic control, range costs, etc., which are items each weapon system must pay for when using Air Force flight test locations.  <b>FY 2015 Plans:</b> Continues direct costs of flight testing. The costs include ramp space, fuel, air traffic control, range costs, etc., which are items each weapon system must pay for when using Air Force flight test locations.  <b>FY 2016 Base Plans:</b> N/A  <b>FY 2016 OCO Plans:</b> N/A		6.500	7.500	-	-	-
<b>Title:</b> Common Configuration  <b>Description:</b> Common Configuration (CC) is a multiple development, integration and retrofit project to support achievement of the C-17 A Block 18+ baseline. It consists of projects including M-RCIP, Comm Nav, and RHUD that lead to modifications and upgrades to the C-17. Support for on going flight test, software labs, system		-	-	29.685	-	29.685

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force				<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0401130F / <i>C-17 Aircraft (IF)</i>				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>						
engineering, program management and engineering/acquisition studies not related to requirements generation are included in the overall program cost.						
<b>FY 2014 Accomplishments:</b> N/A						
<b>FY 2015 Plans:</b> N/A						
<b>FY 2016 Base Plans:</b> Will continue development of RHUD. Support for on going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation are included in the overall program cost.						
<b>FY 2016 OCO Plans:</b> N/A						
<b>Title:</b> Communications/Navigation and Capability Mandates						
<b>Description:</b> Communication/Navigation & Capability Mandates is a program to develop, integrate and retrofit C-17 A CNS/ATM mandates required functionality improvements and updates beyond the C-17 A baseline. It includes the ADS-B out project. Support for on going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation are included in the overall program cost.						
<b>FY 2014 Accomplishments:</b> N/A						
<b>FY 2015 Plans:</b> N/A						
<b>FY 2016 Base Plans:</b> Completes ADS-B out.						
<b>FY 2016 OCO Plans:</b> N/A						
<b>Title:</b> Extended Range Onboard Inert Gas Generating System II						
		-	-	-	-	-
		-	-	18.010	-	18.010

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401130F I C-17 Aircraft (IF)
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
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**Description:** ER/OBIGGS II Filter Fire Fix is a program that redesigns the OBIGGS II shutoff valve and makes software changes to the Warning and Caution Computer (WCC). It includes support for on going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation.

**FY 2014 Accomplishments:**  
N/A

**FY 2015 Plans:**  
N/A

**FY 2016 Base Plans:**  
This program will continue efforts to redesign On-Board Inert Gas Generation System (OBIGGS) II shut off valve to eliminate the potential for OBIGGS II filter fires and improve fuel efficiency. It will include support for on going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation.

**FY 2016 OCO Plans:**  
N/A

<b>Title:</b> Beyond Line of Sight	-	-	7.112	-	7.112
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**Description:** Beyond Line-Of-Sight (BLOS) modernization modifications is a development, integration, and retrofit program for C-17 communications. BLOS modifies and improves hardware and software for voice and data communications on the C-17. The program will modify both integrated aircraft avionics as well as back-end mission communications and could utilize both military and commercial satellite systems to extend communication ranges. The current efforts include but are not limited to AERO-I modernization (multi-channel voice and data delivered via an intermediate-gain antenna), increased broadband and secure data capability. It includes support for on going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation.

**FY 2014 Accomplishments:**  
N/A

**FY 2015 Plans:**

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401130F / C-17 Aircraft (IF)
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
<b><i>FY 2016 Base Plans:</i></b> Efforts will include, but are not limited, to AERO-I modernization (multi-channel voice and data delivered via an intermediate-gain antenna) and increased broadband capabilities. It will include support for on going flight test, software labs, system engineering, program management and engineering/acquisition studies not related to requirements generation.					
<b><i>FY 2016 OCO Plans:</i></b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	97.134	82.948	54.807	-	54.807

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF: BA05: Line Item # C01700: <i>Aircraft Modifications</i>	98.197	89.394	46.997	-	46.997	73.678	61.880	41.330	52.846	Continuing	Continuing
• APAF: BA07: Line Item # C01700: <i>Aircraft Support Equipment &amp; Facilities</i>	49.952	20.111	30.108	-	30.108	36.369	4.822	-	-	Continuing	Continuing
• APAF: BA06: Line Item # 000999: <i>Initial Spares and Repair Parts</i>	10.218	14.105	12.943	-	12.943	13.721	13.333	13.060	13.281	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**  
 The C-17 Acquisition Strategy is based on several separate contracts to support the entire scope of the C-17 weapon system. Globemaster Operational Enhancement (GLOBE) is an indefinite delivery, indefinite quantity (IDIQ) contract used to purchase services and research articles (through delivery orders) to support all RDT&E with our prime contractor. In addition, purchase orders are used to support flight test activities at Edwards AFB. Additional contract vehicles could be utilized as required.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401130F / C-17 Aircraft (IF)	<b>Project (Number/Name)</b> 672569 / C-17A Aircraft
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<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Performance Improvement and Obsolescence	Various	Boeing : Long Beach, CA	-	74.498	Dec 2013	57.273	Nov 2014	-		-		-	Continuing	Continuing	-
Systems Engineering/ Program Management	Various	Boeing : Long Beach, CA	-	7.976	Nov 2013	9.000	Nov 2014	-		-		-	Continuing	Continuing	-
Common Configuration	Various	Boeing : Long Beach, CA	-	-		-		29.685	Nov 2015	-		29.685	Continuing	Continuing	107.941
Extended Range Onboard Inert Gas Generating System II	Various	Boeing : Long Beach, CA	-	-		-		18.010	May 2016	-		18.010	Continuing	Continuing	18.010
Beyond Line of Sight	Various	Boeing : Long Beach, CA	-	-		-		7.112	Jun 2016	-		7.112	Continuing	Continuing	-
<b>Subtotal</b>			-	82.474		66.273		54.807		-		54.807	-	-	-

<b>Support (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Edwards Flight Test	PO	AFTC : Edwards, CA	-	6.500	Oct 2013	7.500	Nov 2014	-		-		-	Continuing	Continuing	-
Boeing Flight Test	SS/CPPIF	Boeing : Long Beach, CA	-	8.160	Dec 2013	9.175	Nov 2014	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	14.660		16.675		-		-		-	-	-	-





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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401130F / C-17 Aircraft (IF)	<b>Project (Number/Name)</b> 672569 / C-17A Aircraft
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Airdrop Improvements	████████																											
Comm Nav Capabilities	████████																											
Replacement Core Integrated Processor	████████																											
IFF and GATM Mode 5	██████████																											
ILS and FCC updates	██████████████																											
CNS/ATM ADS-B out	██████████████████																											
-- Critical Design Review (CDR)			██																									
-- Begin Flight Test					██																							
OBIGGS II Filter Fire Fix					██████████████████																							
- CDR									██																			
- Begin Flight Test											██																	
AERO I Modernization									██████████████████																			
- Test Readiness Review											██																	
- Flight Test Begins															██													
Replacement Heads up Display (RHUD)	██████████████████				██████████████████				██████████████████				██████████████████				██████████████████				██████████████████							
-- CDR									██																			
-- Flight Test Begins															██													
-- 2 RHUD RDTE Articles																			██									

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401130F / C-17 Aircraft (IF)	<b>Project (Number/Name)</b> 672569 / C-17A Aircraft
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Airdrop Improvements	1	2014	3	2014
Comm Nav Capabilities	1	2014	3	2014
Replacement Core Integrated Processor	1	2014	3	2014
IFF and GATM Mode 5	1	2014	4	2014
ILS and FCC updates	1	2014	3	2015
CNS/ATM ADS-B out	1	2014	2	2016
-- Critical Design Review (CDR)	3	2014	3	2014
-- Begin Flight Test	2	2015	2	2015
OBIGGS II Filter Fire Fix	3	2015	2	2017
- CDR	2	2016	2	2016
- Begin Flight Test	4	2016	4	2016
AERO I Modernization	4	2016	2	2019
- Test Readiness Review	1	2017	1	2017
- Flight Test Begins	3	2018	3	2018
Replacement Heads up Display (RHUD)	1	2014	4	2019
-- CDR	1	2016	1	2016
-- Flight Test Begins	2	2018	2	2018
-- 2 RHUD RDTE Articles	1	2019	1	2019

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	187.908	22.443	26.715	31.010	-	31.010	26.390	12.853	7.146	0.665	31.072	346.202
675061: C-130J	185.578	20.343	25.026	31.010	-	31.010	26.390	12.853	7.146	0.665	31.072	340.083
675062: C-130J TRAINERS	2.330	2.100	1.689	-	-	-	-	-	-	-	-	6.119

**MDAP/MAIS Code:** 220

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

The C-130J is a medium-sized transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments. The C-130J aircraft, with its extended (by 15 feet) fuselage, provides additional cargo carrying capacity for the USAF combat delivery mission compared with legacy C-130E/H and the C-130J (short). Special mission variants of the C-130J conduct airborne psychological operations (EC-130J), weather reconnaissance (WC-130J), search and rescue (HC-130J), and special operations (MC-130J and AC-130J). All aircraft variants must be capable of worldwide operations.

This program provides RDT&E funding for required capabilities that are grouped as "Block" upgrades or "Capability" updates. Currently, Block 7.0/8.1 and Capability Management Updates (CMUs) add capabilities to address Communication, Navigation, Surveillance, and Air Traffic Management (CNS/ATM) requirements. All are collaborative efforts between Seven Nations. Content/requirements for block modifications is documented in International Program Directives (IPDs) as determined in the Cooperative Systems and Software Upgrade Requirements Management (COSSURM) process.

The HC/MC Recap Program will integrate the common-core capabilities developed under this program into the HC-130J, MC-130J and AC-130J.

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.

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program
--	--

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	22.443	26.715	31.216	-	31.216
Current President's Budget	22.443	26.715	31.010	-	31.010
Total Adjustments	-	-	-0.206	-	-0.206
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.206	-	-0.206

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program				<b>Project (Number/Name)</b> 675061 / C-130J			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675061: C-130J	185.578	20.343	25.026	31.010	-	31.010	26.390	12.853	7.146	0.665	31.072	340.083
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The C-130J is a medium-sized transport aircraft capable of performing a variety of combat delivery (tactical airlift) operations across a broad range of mission environments. The C-130J aircraft, with its extended (by 15 feet) fuselage, provides additional cargo carrying capacity for the USAF combat delivery mission compared with legacy C-130E/H and the C-130J (short). Special mission variants of the C-130J conduct airborne psychological operations (EC-130J), weather reconnaissance (WC-130J), search and rescue (HC-130J), and special operations (MC-130J and AC-130J). All aircraft variants must be capable of worldwide operations.

This project provides RDT&E funding for required capabilities that are grouped as "Block" upgrades or "Capability" updates. Content/requirements for block modifications is documented in International Program Directives (IPDs) as determined in the Cooperative Systems and Software Upgrade Requirements Management (COSSURM) process. This project will integrate the common-core capabilities developed under this program into the HC-130J, MC-130J and AC-130J.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> Cooperative Systems and Software Upgrade Requirements Management (COSSURM)</p> <p><b>Description:</b> COSSURM - Collects potential requirements for inclusion into a Block Upgrade or Capability Management Update.</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> CMU COSSURM efforts include the Design Approach and Approval Meeting (DAAM), Requirements Approval Meeting (RAM), Systems Requirements Review (SRR), System Design Review (SDR), Certification Working Group (CertWG) and approval to proceed to Request for Proposal (RFP).</p> <p><b>FY 2016 Plans:</b> Continuation of CMU COSSURM requirements review and analysis.</p>	-	0.248	0.367
<p><b>Title:</b> Block 7.0</p> <p><b>Description:</b> BLOCK 7.0: Adds Link 16, a new Flight Management System (FMS), Civil Global Positioning System (GPS) Navigation, and a Special Mission Processor-Interface (SMP-I). DCMA Support is included here.</p> <p><b>FY 2014 Accomplishments:</b></p>	0.603	1.939	0.100

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675061 / C-130J		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Updated software to accomodate the Windows 7 Data Transfer and Diagnostic System(DTADS)and Item Unique Identification(IUID).  <b>FY 2015 Plans:</b> Completion of Data Transfer and Diagnostic System(DTADS) software and Item Unique Identification(IUID) software development.  <b>FY 2016 Plans:</b> Complete integration of DTADS and IUID software updates				
<b>Title:</b> Block 8.1  <b>Description:</b> BLOCK 8.1 Adds Identification Friend or Foe (IFF) Mode 5, Civil Data Link, Automatic Dependent Surveillance - Broadcast (ADS-B), Air Traffic Services (ATS)/Airline Operational Control(AOC) Data Link for Line of Sight (LOS) and Beyond Line of Sight (BLOS) communication, enhanced covert lighting, improved Public Address(PA) System, and Approach Procedure with Vertical guidance (APV)/ Localizer Performance with Vertical guidance(LPV) approach capability. Several avionics platforms are impacted that include Flight Management System Software, Mission Computer Software, Bus Interface Unit software, and Maintenance Management System.  <b>FY 2014 Accomplishments:</b> The Block 8.1 effort continued the Common Core hardware and software development. Major milestones included the completion of Critical Design Review (CDR), receipt of the Trial Kit Installation (TKI) aircraft and began Block 8.1 DT&E.  <b>FY 2015 Plans:</b> The Block 8.1 effort will continue with the Common Core software development. Continuation of DT&E Block 8.1 development.  <b>FY 2016 Plans:</b> Complete Block 8.1 DT&E. Integration of TKI efforts for the USAF short/stretch Aircraft (A/C). Funding increase from prior year is driven by the combined Block 7.0/8.1 Trial Kit integration efforts.		17.807	16.733	25.169
<b>Title:</b> Test & Evaluation  <b>Description:</b> Test and evaluation planning, conduct, and support for developmental, and operational testing.  <b>FY 2014 Accomplishments:</b> Follow-on test planning and support that included Formal Qualification Test (FQT) #1  <b>FY 2015 Plans:</b> Continuation of test planning and support that includes FQT #2  <b>FY 2016 Plans:</b>		1.474	3.346	3.014



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675061 / C-130J		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Completion of Delta test planning and support				
<p><b>Title:</b> Capability Management Update (CMU)</p> <p><b>Description:</b> CMU's refine Block upgrade modifications that improve operational effectiveness, satisfy emerging operational needs, and enhance human machine interface (HMI) to allow a workload that meets human factors standards and maintains the present crew complement. Avionics software impacted includes Flight Management System (FMS) Software, Mission Computer (MC) Software, Bus Interface Unit (BIU) software, and Maintenance Management System.</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> Award contract and Common Core software development will begin</p> <p><b>FY 2016 Plans:</b> Continuation of Common Core software development</p>		-	2.160	2.160
<p><b>Title:</b> Other AMC Initiatives</p> <p><b>Description:</b> C-130J initiatives/studies</p> <p><b>FY 2014 Accomplishments:</b> Mission Planning software studies and updates continue</p> <p><b>FY 2015 Plans:</b> Mission Planning software studies and updates continue</p> <p><b>FY 2016 Plans:</b> Mission Planning software studies and updates continue</p>		0.410	0.500	0.100
<p><b>Title:</b> IPO Program Management</p> <p><b>Description:</b> International Program Office (IPO) Support. Funds for contract services, travel, supplies and DFAS Support.</p> <p><b>FY 2014 Accomplishments:</b> Travel, Supplies, and DFAS Support</p> <p><b>FY 2015 Plans:</b> Travel, Supplies, and DFAS Support</p> <p><b>FY 2016 Plans:</b></p>		0.049	0.100	0.100

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675061 / C-130J
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Travel, Supplies, and DFAS Support			
<b>Accomplishments/Planned Programs Subtotals</b>	20.343	25.026	31.010

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

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APAF: BA05: Line Item # C1300J: C-130J Mods	-	-	28.716	-	28.716	77.422	79.054	120.841	133.033	1,137.800	1,576.875

**Remarks**

The Mods above are linked to C-130J R&D. There are other C-130J modification projects without associated R&D.

**D. Acquisition Strategy**

The C-130J aircraft will be modified using a "block upgrade" strategy. The CNS/ATM, navigation safety requirement will initially, be met in three block upgrades. Block 6.0 development was funded from FY03-07. Block 7.0 started in FY07, and Block 8.1 which began in FY12. Subsequently, C-130J modifications will be grouped into smaller CNS/ATM software only updates known as Capability Management Updates (CMU). CMU development is planned to commence upon contract award Q3/2015. Other AMC initiatives include Mission Planning (Mission Computer) upgrades due to Flight Management System (FMS) Software updates.

In order to better manage the fleet and to avoid having to simultaneously support three separate aircraft configurations (Block 6, Block 7 and Block 8.1) the USAF has decided to combine the Block 7 and Block 8.1 mods. This will allow the aircraft and trainers to only have to be modified one time.

The proportion of CNS/ATM and navigation safety requirements allocated to Blocks 6.0 through 8.1 was determined via a design trade study conducted by Lockheed Martin (the C-130J prime contractor) and verified by the C-130J system program office and AMC. The development costs are being shared via a global Project Arrangement (PA) by the United States (USAF, USMC, USCG), the United Kingdom, Italy, Australia, Denmark, Canada, and Norway. An international program office (IPO), with USAF lead (Wright Patterson AFB, OH), manages the block upgrades development effort. Retrofit of a Block on the aircraft is the responsibility of each nation.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675061 / C-130J
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block 7.0, Air Force Life Cycle Mgmt Ctr (AFMC), WPAFB, OH	SS/CPAF	Lockheed Martin Aeronautics : Marietta, GA	126.845	0.603	Apr 2014	1.939	Nov 2014	0.100	Nov 2015	-		0.100	-	129.487	129.487
Block 8.1, Air Force Life Cycle Mgmt Ctr (AFMC), WPAFB, OH	SS/CPAF	Lockheed Martin Information Sysyems : Marietta, GA	47.385	17.807	Apr 2014	16.733	Apr 2015	25.169	Apr 2016	-		25.169	71.249	178.343	179.443
Capability Management Upgrades (CMU) 1 & 2, Air Force Life Cycle Mgmt Ctr (AFMC), WPAFB, OH	SS/CPAF	Lockheed Martin Aero : Marietta, GA	0.000	-		2.160	Jun 2015	2.160	Apr 2016	-		2.160	4.320	8.640	8.640
12.459/AMC-Initiatives, Air Force Life Cycle Mgmt Ctr (AFMC), WPAFB, OH	SS/CPAF	Laockheed Martin Aero : Marietta, GA	8.959	0.410	Feb 2014	0.500	Feb 2015	0.100	Feb 2016	-		0.100	2.000	11.969	12.369
<b>Subtotal</b>			183.189	18.820		21.332		27.529		-		27.529	77.569	328.439	329.939

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Block 8.1 DT&E	PO	EGLIN AFB : Eglin, FL	0.336	1.474	Nov 2013	3.346	Nov 2014	3.014	Nov 2015	-		3.014	-	8.170	6.670
<b>Subtotal</b>			0.336	1.474		3.346		3.014		-		3.014	-	8.170	6.670

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675061 / C-130J
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<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
IPO Support	TBD	TBD : ,	0.625	0.049	Nov 2013	0.100	Nov 2014	0.100	Nov 2015	-		0.100	0.400	1.274	1.274
COSSURM	TBD	TBD : TBD,	1.428	-		0.248	Jan 2015	0.367	Jan 2016	-		0.367	0.157	2.200	2.200
<b>Subtotal</b>			2.053	0.049		0.348		0.467		-		0.467	0.557	3.474	3.474

**Remarks**  
IPO Support(includes Travel & Supplies)and COSSURM are not included in the baseline

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	185.578	20.343	25.026	31.010	-	31.010	78.126	340.083	340.083

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675061 / C-130J
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Block 7.0 Development Test & Evaluation																												
Block 7.0 FCA/ PCA (Functional & Physical Configuration Audit)																												
Block 7.0 Trial Kit Installation (TKI) 1																												
Block 8.1 Development																												
Block 8.1 Development Test & Evaluation																												
Block 8.1 FCA/ PCA (Functional & Physical Configuration Audit)																												
Carbon Brake Test and Evaluation																												
Block 7.0/ 8.1 Trial Kit Installation (TKI) 2 - 7																												
CMU #1																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675061 / C-130J
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 7.0 Development Test & Evaluation	1	2014	2	2014
Block 7.0 FCA/ PCA (Functional & Physical Configuration Audit)	2	2014	2	2014
Block 7.0 Trial Kit Installation (TKI) 1	4	2014	2	2015
Block 8.1 Development	1	2014	3	2016
Block 8.1 Development Test & Evaluation	1	2015	3	2016
Block 8.1 FCA/ PCA (Functional & Physical Configuration Audit)	2	2016	2	2016
Carbon Brake Test and Evaluation	2	2016	3	2016
Block 7.0/ 8.1 Trial Kit Installation (TKI) 2 - 7	4	2015	1	2019
CMU #1	1	2016	2	2018

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0401132F / C-130J Program				Project (Number/Name) 675062 / C-130J TRAINERS			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675062: C-130J TRAINERS	2.330	2.100	1.689	-	-	-	-	-	-	-	-	6.119
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

Project completes in 2015

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

This project will enhance aircrew simulator fidelity utilizing aircraft flight tests to gather data to accurately emulate ground effect, nose wheel and engine-out data points. Currently the simulator is approved to accomplish only 50% of annual assault landings. This added capability will allow more training to be accomplished in the simulator so the aircraft will be available for more real world missions. The ability to accomplish more training in the simulator also reduces the annual aircraft O&M requirement.

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> Aero Data Collection	2.100	1.689	-
<b>Description:</b> Utilize aircraft flight tests, gather data for simulator to accurately emulate ground effect, nose wheel and single engine data points to make simulator land like the aircraft. Simulator is currently approved to accomplish only 50% of assault landings. Effort includes aircraft modification to collect all data points and de-modification after data collection to return aircraft to previous status.			
<b>FY 2014 Accomplishments:</b> Continue collection and analysis of Aero Data. De-instrument aircraft.			
<b>FY 2015 Plans:</b> Integration of the Aero Data collected in 2014 into the Weapon System Trainer (WST) software			
<b>FY 2016 Plans:</b> N/A			
<b>Accomplishments/Planned Programs Subtotals</b>	2.100	1.689	-

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

N/A

**Remarks**

There is not a hardware modification program linked to this RDT&E effort.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Air Force Date: February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675062 / C-130J TRAINERS
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**D. Acquisition Strategy**

One C-130J will be instrumented to collect data during takeoff, approach and landing phases of flight. This data will be used to enable the C-130J Weapon System Trainers to more accurately emulate ground effect, nose wheel, and engine out data points so the simulator will land more like the aircraft. The ability to accomplish more training in the simulator also reduces the annual aircraft O&M requirement.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675062 / C-130J TRAINERS
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Simulator Aero Data	SS/FFP	Lockheed Martin GTL : Orlando, FL	2.330	2.100	Jun 2014	1.689	Jun 2015	-		-		-	-	6.119	-
<b>Subtotal</b>			2.330	2.100		1.689		-		-		-	-	6.119	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			2.330	2.100	1.689	-	-	-	-	6.119	-

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675062 / C-130J TRAINERS
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Aircraft Instrumentation/ Data Collection																												
Software Development Testing & Evaluation																												
Aircraft De-modification																												
Training Devices Software Update																												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401132F / C-130J Program	<b>Project (Number/Name)</b> 675062 / C-130J TRAINERS
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aircraft Instrumentation/ Data Collection	2	2014	4	2014
Software Development Testing & Evaluation	4	2014	1	2016
Aircraft De-modification	1	2015	3	2016
Training Devices Software Update	1	2016	3	2016

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401134F / <i>Large Aircraft IR Countermeasures (LAIRCM)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	4.116	4.672	6.802	-	6.802	5.845	5.318	5.416	5.512	Continuing	Continuing
674942: <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>	-	4.116	4.672	6.802	-	6.802	5.845	5.318	5.416	5.512	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Large Aircraft Infrared Countermeasures (LAIRCM) system is an evolutionary acquisition program that provides significantly improved defensive systems capability for DoD aircraft to counter the infrared (IR) man-portable air-defense systems (MANPADS) missile threat. The current LAIRCM system configuration [AN/AAQ-24V] consists of an ultra-violet missile warning sensor (MWS), a laser transmitter assembly, control interface unit (CIU) and processors to detect, track, jam and counter incoming IR missiles. The number of sensors and turrets per aircraft is determined by the size and signature of the aircraft. The system is fully automatic following system power-up. LAIRCM requirements are documented in the multi-command Operational Requirements Document (ORD) LAIRCM ORD 314-92, validated on 03 Aug 98. The system was first fielded on the C-17 aircraft.

The baseline program development is complete and consists of the small laser transmitter assembly (SLTA), ultra-violet MWS, processor, control interface unit (CIU) and a repeater (on some aircraft) to meet the need for advanced IR countermeasures. The Guardian Laser Transmitter Assembly (GLTA) is an upgrade to the baseline transmitter equipment to improve reliability, enhance performance, address obsolescence issues, reduce mass and improve overall functionality. First production GLTA delivery occurred in June 08.

Development of the Next Generation Missile Warning System (NexGen MWS) is complete and includes new hardware that improves capability. Baseline equipment (ultra-violet MWS) will be retrofitted with the NexGen MWS as it becomes available. Developmental test/operational test (DT/OT) was conducted in FY10 with initial operational test and evaluation (IOT&E) in FY11.

Per DoD direction, LAIRCM program will accomplish aircraft integration and testing and provide integration support/Hardware buys to incorporate LAIRCM on new platforms, upon request of AMC, AFSOC, multiple potential tanker aircraft variants, and other federal agencies. The last integration effort will be completed in FY14.

LAIRCM upgrades include, but are not limited to hardware and software upgrades and testing of the LAIRCM system to maintain defensive capability against new and emerging threats. Capabilities include engagement reporting (ER), Closed Loop Infrared Countermeasures (CLIRCM) and other emerging capabilities to upgrade/update system threat defeating ability.

Current and future efforts include Threat Analysis; Modeling, Simulation and Emulation Test; Hardware, Software and Firmware Upgrades; Virtual System Integration Lab (SIL) Development; and Studies and Analysis.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force Date: February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401134F / <i>Large Aircraft IR Countermeasures (LAIRCM)</i>
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**Threat Analysis:** Threat analysis encompasses the activities to support threat exploitation analysis of a variety of threats (both known and emerging) against the current LAIRCM jam code with the intent of determining if jam code updates are required. Typical threat analysis activities include: Threat seeker characterization; model development for advanced threat IR seekers; development and testing of new infrared countermeasures concepts, techniques, and hardware; new technology assessment for potential incorporation into the LAIRCM system, and the evaluation/exploitation of new threats and threat characteristics relative to IRCM.

**Modeling, Simulation, and Emulation Testing:** Modeling, simulation, and emulation activities verify and validate the information obtained from the threat analysis activities. These activities include: Evaluation of infrared countermeasures (IRCM) techniques used in defeating real threat hardware; developing and evaluating jam code; validating and verifying integration of LAIRCM system components to newly developed jam codes, software or hardware; evaluating system effectiveness; performing platform integration support tests; and conducting predictive risk reduction tests prior to Live Missile Fire Test (LMFT) or on aircraft flight testing.

**Hardware, Software, and Firmware Upgrades:** Includes changes of any kind to any LAIRCM hardware components/support equipment with the purpose of adding capability, features, and enhancements which do not presently exist to ensure the LAIRCM system remains viable against current and emerging threats.

-----Hardware upgrade activities include engineering tasks required to design, develop, test and produce new capabilities, features, and enhancements, and changes of any kind to any portion of LAIRCM hardware with the purpose of adding capability, features and enhancements which do not presently exist.

-----Software upgrade activities include engineering tasks required to design, develop, and test the new or modified code that result in new capabilities, features, and enhancements and changes of any kind to any portion of LAIRCM software with the purpose of adding capability, features and enhancements which do not presently exist. Software upgrades can occur in any of the Line Replaceable Unit (LRU) Operation Flight Programs as well as any of the software residing in other LAIRCM-associated components including those systems which support development and test or the LAIRCM support equipment.

-----Firmware upgrade activities include engineering tasks required to design, develop, and test the upgrades and those changes resulting from hardware and software updates/modifications as well as firmware upgrades which add new features.

**Virtual SIL Development:** Incrementally design, develop, integrate, and test software code and purchase associated infrastructure (i.e., computers, servers, commercial-of-the-self (COTS) software, etc.) necessary to develop and implement a virtual SIL providing a critical capability for testing the LAIRCM system to ensure continued effectiveness against current and emerging threats.

**Studies and Analysis:** Includes logistics, programmatic, and engineering studies and analysis activities to ensure continued system viability and sustainability and compliance with acquisition directives. These activities may include the evaluation of low cost/high payback opportunities to reduce software development/implementation cost, enhance production efficiency, and improve life cycle costs through increased reliability and reduced repair and return cost.

Program management and administration efforts consist of, but are not limited to contract services and Government costs.

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.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force				<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		<b>R-1 Program Element (Number/Name)</b> PE 0401134F I Large Aircraft IR Countermeasures (LAIRCM)				
<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	
Previous President's Budget	4.116	5.172	7.502	-	7.502	
Current President's Budget	4.116	4.672	6.802	-	6.802	
Total Adjustments	-	-0.500	-0.700	-	-0.700	
• Congressional General Reductions	-	-				
• Congressional Directed Reductions	-	-0.500				
• Congressional Rescissions	-	-				
• Congressional Adds	-	-				
• Congressional Directed Transfers	-	-				
• Reprogrammings	-	-				
• SBIR/STTR Transfer	-	-				
• Other Adjustments	-	-	-0.700	-	-0.700	
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>				<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> LAIRCM Integration				1.716	-	-
<b>Description:</b> Continue Mobility Platform integration efforts to include Software development, and Hardware buys.						
<b>FY 2014 Accomplishments:</b> Continued AC-130U and MC-130H integration efforts; Software and Hardware buys. Completes in 2015.						
<b>FY 2015 Plans:</b> N/A						
<b>FY 2016 Plans:</b> N/A						
<b>Title:</b> Threat Analysis				0.816	2.054	1.887
<b>Description:</b> Encompasses the activities to support threat exploitation analysis of a variety of threats against the current LAIRCM jam code with the intent of determining if jam code updates are required.						
<b>FY 2014 Accomplishments:</b> Continued work on Threat analysis in the Guided Weapon Evaluation Facility (GWEF), and Dynamic Infrared Missile Evaluation Facility (DIME)Lab.						
<b>FY 2015 Plans:</b>						

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0401134F / <i>Large Aircraft IR Countermeasures (LAIRCM)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Continue work on Threat analysis in the Guided Weapon Evaluation Facility (GWEF),and Dynamic Infrared Missile Evaluation Facility (DIME)Lab. <b>FY 2016 Plans:</b> Continue work on Threat analysis in the Guided Weapon Evaluation Facility (GWEF),and Dynamic Infrared Missile Evaluation Facility (DIME)Lab.				
<b>Title:</b> Modeling, Simulation and Emulation Testing <b>Description:</b> Activities that verify and validate the information obtained from threat analysis activities. <b>FY 2014 Accomplishments:</b> Continued work in Modeling, Simulation and Emulation Tests. This is a continued effort from LAIRCM Development in previous years. <b>FY 2015 Plans:</b> Continue work in Modeling, Simulation and Emulation Tests. This is a continued effort from LAIRCM Development in previous years. <b>FY 2016 Plans:</b> Continue work in Modeling, Simulation and Emulation Tests. This is a continued effort from LAIRCM Development in previous years.		0.834	0.872	0.995
<b>Title:</b> Hardware/Software/Firmware Upgrades <b>Description:</b> This program (Hardware/Software/Firmware Upgrades) is a new start. Includes changes of any kind to any LAIRCM hardware components/support equipment with the purpose of adding capability, features, and enhancements which do not presently exist to ensure the LAIRCM system remains viable against current and emerging threats. <b>FY 2014 Accomplishments:</b> N/A <b>FY 2015 Plans:</b> N/A <b>FY 2016 Plans:</b>		-	-	0.200



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0401134F / <i>Large Aircraft IR Countermeasures (LAIRCM)</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Changes of any kind to any LAIRCM hardware components/support equipment with the purpose of adding capability, features, and enhancements which do not presently exist to ensure the LAIRCM system remains viable against current and emerging threats.				
<p><b>Title:</b> Virtual SIL Development</p> <p><b>Description:</b> This program (Virtual SIL Development) is a new start. Incrementally design, develop, integrate, and test software code and purchase associated infrastructure (i.e., computers, servers, COTS software, etc.) necessary to develop and implement a virtual SIL providing a critical capability for testing the LAIRCM system to ensure continued effectiveness against current and emerging threats.</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> N/A</p> <p><b>FY 2016 Plans:</b> Incrementally design, develop, integrate, and test software code and purchase associated infrastructure (i.e., computers, servers, COTS software, etc.) necessary to develop and implement a virtual SIL providing a critical capability for testing the LAIRCM system to ensure continued effectiveness against current and emerging threats.</p>		-	-	3.016
<p><b>Title:</b> Studies and Analysis</p> <p><b>Description:</b> Includes logistics, programmatic, and engineering studies and analysis activities to ensure continued system viability and sustainability and compliance with acquisition directives. These activities may include the evaluation of low cost/high payback opportunities to reduce software development/implementation cost, enhance production efficiency, and improve life cycle costs through increased reliability and reduced repair and return cost.</p> <p><b>FY 2014 Accomplishments:</b> Initiated two year statutorily required Logistics (Product Support) Business Case Analysis (PSBCA). Worked logistics, programmatic, and engineering tasks to ensure continued systems viability and sustainability. This is a continued effort from LAIRCM Development in previous years.</p> <p><b>FY 2015 Plans:</b> Continuation of the PSBCA which is a regulatory requirement to review and validate the program's overarching sustainment strategy. Initiate the Best Value IR Sensor Study which provides Headquarters Air Mobility Command (HQ AMC) with an IR sensor comparison of the current IR sensor and the newly developed advanced threat warning (ATW) sensor; purpose of</p>		0.750	1.746	0.704

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401134F / <i>Large Aircraft IR Countermeasures (LAIRCM)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
analysis is to determine the best value IR sensor solution. Initiate the Virtual SIL Implementation Study which refines the virtual SIL concept into an executable program; deliverables include an implementation plan (allowing for the delivery of incremental capability) and a cost estimate. Virtual SIL reduces the amount of government furnished equipment needed for lab integration efforts and reduces overall life cycle costs associated with SIL activity.  <b>FY 2016 Plans:</b> Complete the Product Support Business Case Analysis (PSBCA), Best Value IR Sensor Study, and Virtual SIL Implementation Study.			
<b>Accomplishments/Planned Programs Subtotals</b>	4.116	4.672	6.802

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2016</b>	<b>FY 2016</b>						
<b>Line Item</b>			<b>Base</b>	<b>OCO</b>	<b>Total</b>					<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA05: Line Item #	160.247	13.159	84.335	-	84.335	-	-	-	-	-	-
LAIRCM: <i>Large Aircraft Infrared Countermeasures Mods</i>											

**Remarks**

**E. Acquisition Strategy**  
 Efforts awarded on an annual basis, exercising existing contract options, support threat analysis and system effectiveness. The LAIRCM program office partners with the Air Force Research Laboratory (AFRL) and the 782d Test Squadron to conduct threat analysis research and Modeling, Simulation, and Emulation Testing. AFRL contracts with the Guided Weapon Evaluation Facility (GWEF) to provide hardware-in-the-loop developmental test simulation capability on a level-of-effort (LOE) basis. AFRL's Dynamic Infrared Missile Evaluation (DIME) Laboratory performs threat analysis. The existing LAIRCM contract will be used to award the various study efforts.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401134F / Large Aircraft IR Countermeasures (LAIRCM)	<b>Project (Number/Name)</b> 674942 / Large Aircraft Infrared Counter Measures (LAIRCM)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LAIRCM S/W Upgrades for Platform Integration	SS/T&M	NGC : Rolling Meadows, IL	-	1.509	May 2014	-		-		-		-	-	1.509	-
Threat Analysis	SS/CPAF	DIME LAB : WPAFB, OH	-	0.816	Feb 2014	0.975	Mar 2015	0.975	Jan 2016	-		0.975	Continuing	Continuing	-
Hardware/Software/Firmware Upgrades	SS/CPAF	NGC : Rolling Meadows, IL	-	-		-		0.200	Mar 2016	-		0.200	Continuing	Continuing	-
Virtual SIL Development	SS/CPAF	NGC : Rolling Meadows, IL	-	-		-		3.016	Feb 2016	-		3.016	Continuing	Continuing	-
Studies and Analysis	Various	Various : Various,	-	0.750	Jul 2014	1.746	Feb 2015	0.704	Jan 2016	-		0.704	Continuing	Continuing	-
<b>Subtotal</b>			-	3.075		2.721		4.895		-		4.895	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Various Test Organizations	Various	Various : Various,	-	0.834	Jun 2014	1.440	Apr 2015	1.557	Jan 2016	-		1.557	-	3.831	-
<b>Subtotal</b>			-	0.834		1.440		1.557		-		1.557	-	3.831	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
A/C Survivability Division (Program Office)	Various	Various:Various, ,	-	0.207		0.511		0.350		-		0.350	-	1.068	-





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401134F / <i>Large Aircraft IR Countermeasures (LAIRCM)</i>	<b>Project (Number/Name)</b> 674942 / <i>Large Aircraft Infrared Counter Measures (LAIRCM)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Development Program and Remaining Integration	1	2014	2	2015
Threat Analysis	1	2014	4	2020
Modeling , Simulation, and Emulation Testing	1	2014	4	2020
Studies and Analysis: Product Support BCA	4	2014	3	2016
Studies and Analysis: Best Value IR Sensor Study	3	2015	1	2016
Studies and Analysis: Virtual SIL Implementation Study	3	2015	2	2016
Virtual SIL Development	2	2016	3	2017
Hardware/Software/Firmware Upgrades	2	2016	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401219F / KC-10s
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	-	2.714	1.799	-	1.799	-	-	-	-	-	4.513
675195: <i>Aircraft Modernization Program (AMP)</i>	-	-	2.714	1.799	-	1.799	-	-	-	-	-	4.513
Quantity of RDT&E Articles	-	-	-	1	-	1	-	-	-	-		

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

The KC-10A Extender is an aerial refueling asset built on the commercial DC-10 airframe. The aircraft creates an air bridge enabling rapid global mobility and global strike missions. There are 59 KC-10A aircraft in the USAF tanker fleet. RDT&E funds throughout the FYDP will be used to support the Mode 5 modification effort.

The Mode 5 modification is a DoD-mandated (JROCOM 047-07, 5 Mar 07 directs KC-10 IOC by 2014, FOC by 2020) upgrade to the KC-10's Identification Friend or Foe (IFF) system (the primary means of aircraft identification, used for command and control, during Air Defense operations). The Mode 5 upgrade increases anti-spoofing capabilities and lowers the possibility of aircraft/aircrew loss due to misidentification of friendly aircraft. The modification includes a APX-119 Mode 5 capable transponder, new KIV-77 Mode 5 crypto applique replacing the KIV-119, integration into the CNS/ATM avionics with control via the Central Display Unit, removal of the existing IFF control panel, and minor wiring changes.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	-	2.714	1.811	-	1.811
Current President's Budget	-	2.714	1.799	-	1.799
Total Adjustments	-	-	-0.012	-	-0.012
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.012	-	-0.012

**Change Summary Explanation**

FY16 adjustment for inflation.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401219F / KC-10s
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Mode 5  <b>Description:</b> DoD-mandated upgrade to the IFF system to increase anti-spoofing and exploitation capabilities and lower the possibility of aircraft/aircrew loss due to misidentification of friendly aircraft.  <b>FY 2015 Plans:</b> Engineering design and analysis effort to include upgrade of APX-119 transponder with Mode 5 capability, integration with CNS/ATM control panel, and replaces KIV-119 with KIV-77.  <b>FY 2016 Plans:</b> Engineering design and analysis effort to include upgrade of APX-119 transponder with Mode 5 capability, integration with CNS/ATM control panel, and replaces KIV-119 with KIV-77.	-	2.714	1.799
<b>Accomplishments/Planned Programs Subtotals</b>	-	2.714	1.799

<b>D. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• APAF:BA05:Line Item #C01000: KC-10 Mods	48.169	77.513	5.611	-	5.611	6.162	5.730	4.762	4.841	-	152.788

**Remarks**

**E. Acquisition Strategy**

Acquisition Approach Summary:

The acquisition strategy will be a sole source 18-month RDT&E effort followed by procurement of kits and modification of fleet.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401219F / KC-10s	<b>Project (Number/Name)</b> 675195 / Aircraft Modernization Program (AMP)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CNS/ATM	C/FFP	Rockwell Collins : Cedar Rapids, IA	-	-		-		-		-		-	Continuing	Continuing	20.459
Mode 5 IFF EMD	SS/FFP	Rockwell Collins : Cedar Rapids, IA	-	-		2.514	Sep 2015	1.311	Jan 2016	-		1.311	Continuing	Continuing	3.825
<b>Subtotal</b>			-	-		2.514		1.311		-		1.311	-	-	24.284

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Gov Test and Evaluation (CNS/ATM)	Various	Contract Crew, AMC/TE, FAA : McGuire AFB, NJ	-	-		-		-		-		-	Continuing	Continuing	29.531
Gov Test and Evaluation (Mode 5)	Various	Contract Crew, AMC/TE, FAA : McGuire AFB, NJ	-	-		-		0.288	Jul 2016	-		0.288	-	0.288	0.288
<b>Subtotal</b>			-	-		-		0.288		-		0.288	-	-	29.819

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Mission Support	Various	Various : Tinker AFB, OK	-	-		-		-		-		-	Continuing	Continuing	3.000



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>			<b>Date: February 2015</b>		
<b>Appropriation/Budget Activity</b> 3600 / 7		<b>R-1 Program Element (Number/Name)</b> PE 0401219F / KC-10s		<b>Project (Number/Name)</b> 675195 / Aircraft Modernization Program (AMP)	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Mode 5 EMD Contract Award								■																				
Mode 5 EMD								■	■	■	■	■																
Mode 5 Production of Kits													■	■	■	■												
Mode 5 Kit Installation																	■	■	■	■								

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401219F / KC-10s	<b>Project (Number/Name)</b> 675195 / Aircraft Modernization Program (AMP)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mode 5 EMD Contract Award	4	2015	4	2015
Mode 5 EMD	4	2015	2	2017
Mode 5 Production of Kits	1	2017	1	2018
Mode 5 Kit Installation	1	2018	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	19.000	38.538	27.784	48.453	-	48.453	16.155	-	-	-	Continuing	Continuing
675355: <i>Presidential Aircraft Recapitalization</i>	19.000	6.403	-	-	-	-	-	-	-	-	-	25.403
676024: <i>VC-25 Avionics Modernization Program</i>	0.000	32.135	27.784	48.453	-	48.453	16.155	-	-	-	Continuing	Continuing

**MDAP/MAIS Code:** 425

**Note**

FY15 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.

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

This line item previously supported two Presidential support airlift modernization efforts: Presidential Aircraft Recapitalization (PAR) and VC-25A Avionics Modernization Program (AMP). FY15 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; this line item is dedicated solely to VC-25A AMP.

VC-25A AMP assures unrestricted global access to civilian and military airspace to support the President of the United States as Head of State, Chief Executive, and Commander in Chief. AMP upgrades use a systems approach to aid pilot awareness and alleviate task saturation enhancing safety in a high technology concentrated airspace environment. VC-25A AMP is a required modification to address safety of flight and to ensure the viability of the Presidential support airlift fleet until PAR is fielded.

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	38.538	27.784	38.376	-	38.376
Current President's Budget	38.538	27.784	48.453	-	48.453
Total Adjustments	-	-	10.077	-	10.077
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	10.077	-	10.077

**Change Summary Explanation**

FY14 adjustment is a Congressional Directed Reduction due to program decrease (\$6.153M).

Note: FY15 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.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>				<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675355: <i>Presidential Aircraft Recapitalization</i>	19.000	6.403	-	-	-	-	-	-	-	-	-	25.403
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

In FY 2015, PE 0401314 Presidential Aircraft Replacement, Project 675355 Presidential Aircraft Recapitalization, was transferred to PE 0401319 Presidential Aircraft Replacement, Project 655250 Presidential Aircraft Recap (PAR), BA07 to improve transparency for ACAT I program.

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

The PAR program plans to replace the current VC-25A fleet with a new fleet of aircraft to meet the requirements for the President of the United States to execute the three roles of Head of State, Chief Executive, and Commander in Chief. The PAR aircraft will be a four engine commercial derivative wide-body aircraft, uniquely missionized to provide the President of the United States, staff, and guests with safe and reliable air transportation with the equivalent level of communications capability and security available in the White House. Modifications will include: electrical upgrades to include dual Auxiliary Power Units (APUs); mission communications system; passenger communications; work and rest environment; executive interiors; military avionics; self-defense systems; autonomous enplaning and deplaning; and autonomous baggage loading. There will be no significant change in the Concept of Operations (CONOPS) or Concept of Employment (CONEMP) from the existing VC-25A platform.

On 28 August 2012, the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) approved the PAR Materiel Development Decision (MDD) and tasked the Air Force to conduct a Requirements and Sustainment Trade Analysis (RASTA). RASTA analysis identified the non-tradable requirements and revalidated the need for a four-engine wide-body aircraft. The RASTA results were presented to the Defense Acquisition Board in August 2013 and were incorporated into the Capability Development Document (CDD). The CDD was validated by the Air Force Requirements Oversight Council (AFROC) in May 2014 and by the Joint Requirements Oversight Council (JROC) in November 2014.

This budget supports acquisition planning efforts and studies as well as pre-Engineering and Manufacturing Development (EMD) contract studies for PAR. Acquisition planning, program documentation and risk reduction studies include systems engineering strategy and analysis; risk analysis and management; concept definition and trade studies; test and evaluation strategy; life cycle cost estimates; sustainment and logistics analysis; information support and network analysis; technology and manufacturing maturity analysis and other government costs.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Acquisition Program Planning	6.403	-	-
<b>Description:</b> Acquisition Planning/Program Documentation			
<b>FY 2014 Accomplishments:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>	<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Updated acquisition planning products: Systems engineering strategy and analysis; risk reduction analysis and management; concept definition, requirements analysis and trade studies; test and evaluation strategy; life cycle cost estimates; sustainment and logistics analysis; information support and network analysis; and technology and manufacturing maturity analysis.			
<b>FY 2015 Plans:</b> FY 2015 Presidential Aircraft Recapitalization efforts are executed in PE 0401319F, Project 675355 BA 07.			
<b>FY 2016 Plans:</b> FY 2016 Presidential Aircraft Recapitalization efforts are executed in PE 0401319F, Project 655250 BA 05.			
<b>Accomplishments/Planned Programs Subtotals</b>	6.403	-	-

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE: BA07: PE0401319F: <i>Presidential Aircraft Recap (PAR)</i>	-	11.006	-	-	-	-	-	-	-	-	11.006
• RDTE: BA05: PE0401319F: <i>Presidential Aircraft Recap (PAR)</i>	-	-	102.620	-	102.620	480.977	505.899	513.607	458.672	Continuing	Continuing

**Remarks**  
FY 2015 Presidential Aircraft Recapitalization efforts are executed in PE 0401319F, Project 675355 BA 07; FY 2016 Presidential Aircraft Recapitalization efforts are executed in PE 0401319F, Project 655250 BA 05

**D. Acquisition Strategy**  
The acquisition is strategy dependent on Milestone Decision Authority approval.

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>	<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Government Studies	Various	AFLCMC/WLJC : Dayton, OH	18.678	5.809	Feb 2014	-		-		-		-	-	24.487	-
<b>Subtotal</b>			18.678	5.809		-		-		-		-	-	24.487	-

**Remarks**  
 Costs associated with development planning, risk reduction and preliminary planning activities including systems engineering strategy and analysis; risk reduction analysis and management; concept definition, requirements analysis and trade studies; test and evaluation strategy; life cycle cost estimates; sustainment and logistics analysis; information support and network analysis; technology and manufacturing maturity analysis; and acquisition planning.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Activities	Various	AFLCMC/WLJC : Dayton, OH	0.322	0.594	Oct 2013	-		-		-		-	-	0.916	-
<b>Subtotal</b>			0.322	0.594		-		-		-		-	-	0.916	-

**Remarks**  
 Program Management Administration enables operation of program office management and oversight to support PAR. Management activities include A&AS support and travel to support developmental planning efforts.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>				<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>				

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	19.000	6.403	-	-	-	-	-	25.403	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>	<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Acquisition Strategy Development	[REDACTED]																											
Develop RFP	[REDACTED]																											
CDD	[REDACTED]																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>	<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Acquisition Strategy Development	1	2014	4	2014
Develop RFP	1	2014	4	2014
CDD	1	2014	4	2014

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>				<b>Project (Number/Name)</b> 676024 / <i>VC-25 Avionics Modernization Program</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
676024: <i>VC-25 Avionics Modernization Program</i>	-	32.135	27.784	48.453	-	48.453	16.155	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

VC-25A Avionics Modernization Program (AMP) assures unrestricted global access to civilian and military airspace to support the President of the United States as Head of State, Chief Executive, and Commander in Chief. AMP upgrades use a systems approach to aid pilot awareness and alleviate task saturation enhancing safety in a high technology concentrated airspace environment. VC-25A AMP is a required modification to ensure the viability of the Presidential support airlift fleet until the Presidential Aircraft Recapitalization (PAR) program is fielded.

AMP complies with mandates for civil Automatic Dependent Surveillance-Broadcast (ADS-B) Out and Identification Friend or Foe (IFF) Mode 5 and provides an improved Advisory Vertical Navigation (VNAV) capability. It will incorporate multiple subsystems, to include, but not limited to, maneuver camera system, large cockpit displays, and navigation radios to increase the utility and safety of the VC-25A. Provisions for the military ADS-B Out will also be provided. Installations are aligned with the aircraft heavy maintenance schedule.

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)**

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Design and Test	32.135	27.784	48.453
<b>Description:</b> Design and Test efforts include stand-up of a Systems Integration Laboratory (SIL), non-recurring engineering, material buys for the SIL, as well as design, test and evaluation, and installation of the avionics systems. All modifications to be performed on the aircraft must be proven on the ground prior to installation.			
<b>FY 2014 Accomplishments:</b> Funding will be used for continuing non-recurring engineering, material buys and testing of the SIL; as well as funding Preliminary Design Review (PDR).			
<b>FY 2015 Plans:</b> Funding will be used for continuing non-recurring engineering, material buys and Critical Design Review (CDR). SIL engineering and test continues for Flight Management System (FMS) software.			
<b>FY 2016 Plans:</b>			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>	<b>Project (Number/Name)</b> 676024 / <i>VC-25 Avionics Modernization Program</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Funding will be used for material buys, Install kit, Ground Test and Flight Test.			
<b>Accomplishments/Planned Programs Subtotals</b>	32.135	27.784	48.453

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• APAF: BA05: PE0401314F: VC-25A	0.263	1.072	18.873	-	18.873	30.340	53.306	40.515	-	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

VC-25A AMP is accomplished by developmental integration of commercial off-the-shelf systems, hardware procurement and installation is accomplished to align with heavy maintenance depot schedules. An Unfinitized Contract Action (UCA) was issued in Jun 12. The UCA will be definitized with a Cost Plus Incentive Fee (CPIF) type contract. The CPIF contract covers the engineering RDT&E effort through CDR in FY15. The remaining RDT&E effort including the first kit, install and flight test will be awarded in FY15 and conclude in FY18 with delivery of the first aircraft.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>	<b>Project (Number/Name)</b> 676024 / <i>VC-25 Avionics Modernization Program</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
VC-25 AMP Engineering	SS/CPPIF	Oklahoma City : Tinker, AFB, OK	0.000	32.105	Apr 2014	26.784	Feb 2015	47.453	Feb 2015	-		47.453	Continuing	Continuing	-
<b>Subtotal</b>			0.000	32.105		26.784		47.453		-		47.453	-	-	-

**Remarks**  
Product Development costs include modification engineering design, first modification kit, Systems Integration Laboratory design and development, ground and flight testing and certification.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
VC-25 AMP Program Management Activities	SS/CPPIF	OC-ALC : Oklahoma City, OK	0.000	0.030	Dec 2013	1.000	Sep 2015	1.000	Jan 2015	-		1.000	Continuing	Continuing	-
<b>Subtotal</b>			0.000	0.030		1.000		1.000		-		1.000	-	-	-

**Remarks**  
Program Management Administration enables operation of program office management and oversight to support VC-25A AMP efforts. Management Services include travel to support Critical Design Review, engineering oversight, and depot visit support.







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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401314F / <i>Operational Support Airlift</i>	<b>Project (Number/Name)</b> 676024 / <i>VC-25 Avionics Modernization Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Systems Integration Laboratory engineering	1	2014	2	2016
Definitize UCA	1	2014	1	2014
Preliminary Design Review	4	2014	4	2014
Kit #1 Procurement	2	2015	3	2016
Critical Design Review	2	2015	2	2015
Kit #1 Installation	3	2016	2	2018
Test and Evaluation	1	2017	1	2018
Kit #2 Procurement	4	2017	4	2017
Kit #2 Installation	4	2018	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	0.000	-	38.719	36.576	-	36.576	17.369	14.324	14.595	14.856	74.005	210.444
676033: <i>CV-22 RDT&amp;E POST PRODUCTION</i>	0.000	-	38.719	36.576	-	36.576	17.369	14.324	14.595	14.856	74.005	210.444
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**MDAP/MAIS Code:** 212  
**Other MDAP/MAIS Code(s):** N42

**Note**  
 In FY2015, PE 0401318F (BA05), CV-22, Project 654103 CV-22, efforts were transferred to PE 0401318F (BA07), 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.

In FY2016, Project 676033 includes new start effort for Aircraft Electrical Power upgrade.

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

The CV-22 is a Special Operations Forces (SOF) variant of the 1st generation V-22 tilt-rotor, multi-mission aircraft. CV-22 RDT&E funding provides for development, integration, testing, and enhancement of mission critical capabilities to insert, extract, and re-supply SOF in politically and/or militarily denied areas.

Block 20: RDT&E funding provides for improved long-range communications, situational awareness capabilities, and additional aircraft software upgrades needed to address operational requirements specified in the V-22 Block C/20 Capabilities Production Document.

Enhanced Self-Deployment: RDT&E funding provides for the design, development, and testing of aircraft modifications to improve aircraft self-deployment capabilities (e.g., operating range, global response time).

Improved Inlet Solution (IIS): RDT&E funding provides for design, development, and testing of modifications to the CV-22 propulsion system to reduce ingestion of sand/dust and other particulate matter in austere operating environments. These upgrades will significantly improve engine Time on Wing (TOW) and overall aircraft readiness/availability, and reduce platform operating/life cycle costs.

Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM): RDT&E funding provides for upgrades and enhancements to the CV-22 navigation, flight management, and aircraft Identification Friend or Foe (IFF) systems that will bring the aircraft into compliance with Federal Aviation Administration (FAA) and international mandates and other technical guidance for access to, and operations within worldwide airspace.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22
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Aircraft Electrical Power: RDT&E funding provides for upgrades to the CV-22 electrical power distribution system to meet the power demands of on-going and planned avionics system improvements. This modification also addresses single-point failure modes in the aircraft Variable Frequency Generator (VFG) system that put aircraft and flight crew at risk from disabled ice protection, avionics cooling, and fuel management systems. Additionally, components in the VFG have experienced poor reliability, high failure rates, and long repair turnaround times. This upgrade will provide more of the needed electrical power than the current system is capable of supplying.

Other/Future Capabilities: The V-22 Joint Program Office continually assesses user-specified requirements for improved operational safety, suitability, and mission effectiveness. Funding also provides for future modification planning, and for aircraft engineering changes/upgrades to address diminishing manufacturing source (DMS) and component obsolescence issues that adversely effect aircraft readiness and operational availability rates.

USSOCOM and USAF jointly fund many CV-22 development projects. USSOCOM funds the development, integration and testing of SOF-unique mission equipment/capabilities, while the USAF funds service-common/basic air vehicle enhancements, CV-22 implementation and testing of MV-22 configuration changes, integration of Air Force and Navy maintenance and information systems used with the CV-22, and support for aircraft qualification and operational testing. USSOCOM and USAF jointly fund corrective measures for identified aircraft deficiencies, and for Block 20 development. Block 20 Increments 1 and 3 were developed with USAF funds, and Increment 2 was developed with USSOCOM funds.

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 year.

In FY2016, Project 676033 includes new start effort for Aircraft Electrical Power upgrade.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	-	38.719	26.422	-	26.422
Current President's Budget	-	38.719	36.576	-	36.576
Total Adjustments	-	-	10.154	-	10.154
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	10.154	-	10.154

**Change Summary Explanation**

The CV-22 RDT&E budget transitioned from BA05 System Development & Demonstration (SDD) to BA07 Operational Systems Development in FY2015.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22
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FY16: Funding increase for Improved Inlet Solution (IIS) development and testing activities

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p><b>Title:</b> CV-22 Block 20 RDT&amp;E</p> <p><b>Description:</b> Develop, test, and evaluate additional capabilities for the CV-22 aircraft. The V-22 Joint Program Office is developing improved operational safety, suitability, and effectiveness configuration changes. Block 20 development includes improved communications, software, and other requirements specified in the V-22 Block C/20 Capabilities Production Document.</p> <p><b>FY 2014 Accomplishments:</b> See BA05 Program Element 0401318F CV-22 for FY14 activities and funding.</p> <p><b>FY 2015 Plans:</b> Beyond Line of Sight (BLOS) communications system ground and flight testing</p> <p><b>FY 2016 Base Plans:</b> N/A</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>	-	12.940	-	-	-
<p><b>Title:</b> Enhanced Self-Deployment Capabilities</p> <p><b>Description:</b> Future capabilities increment to enhance self-deployment capabilities such as improved ice protection, engine performance, navigation, communications, and networking capabilities; weapons systems; defensive systems; weight reduction initiatives; and changes to the underlying aircraft systems necessary to enable these capabilities. The enhanced self-deployment capabilities major thrust contains funding for the initial risk reduction and trade studies that may result in other major thrusts.</p> <p><b>FY 2014 Accomplishments:</b> See BA05 Program Element 0401318F CV-22 for FY14 activities and funding.</p> <p><b>FY 2015 Plans:</b> Conduct risk reduction and assessment of emerging operational capability requirements and existing technologies/solutions.</p> <p><b>FY 2016 Base Plans:</b></p>	-	3.900	12.214	-	12.214

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force			<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>						
		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p>Conduct risk reduction and assessment of emerging and existing technologies (e.g., weapon systems, improved engine performance, and weight reduction initiatives). Start design/development to integrate Intelligence Broadcast Receiver upgrade (obsolescence issue).</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>						
<p><b>Title:</b> Improved Inlet Solution (IIS)</p> <p><b>Description:</b> Provides for modifications to the CV-22 propulsion system to reduce sand/dust and other particulate matter ingestion, increase engine time on wing and overall aircraft readiness/availability rates, and reduce operations and support costs. This is Air Force Special Operations Command's #1 modification priority for the CV-22 weapon system.</p> <p>IIS is a joint V-22 effort being developed in conjunction with the Department of the Navy.</p> <p><b>FY 2014 Accomplishments:</b> See BA05 Program Element 0401318F CV-22 for FY14 activities and funding.</p> <p><b>FY 2015 Plans:</b> Continue design and development. Conduct Preliminary Design Review (PDR). Purchase modification kit and instrumentation for flight test aircraft.</p> <p><b>FY 2016 Base Plans:</b> Continue design and development. Conduct Critical Design Review (CDR). Conduct wind tunnel icing test.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>		-	14.179	19.396	-	19.396
<p><b>Title:</b> Communication, Navigation, Surveillance / Air Traffic Management (CNS/ATM)</p> <p><b>Description:</b> Improvements to current navigation, flight management, and Identification Friend or Foe (IFF) systems that will bring the CV-22 into compliance with US and international mandates and other technical guidance for continued access to, and interoperability with worldwide airspace.</p> <p><b>FY 2014 Accomplishments:</b></p>		-	7.700	3.200	-	3.200

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force			<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>						
		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
N/A						
<b>FY 2015 Plans:</b> Conduct Crew Systems Design, Display Interface Documentation and SRR for RNAV(GPS).						
<b>FY 2016 Base Plans:</b> Joint Avionics Software Suite (JASS) and Display Software Development SRR JASS and Display Software Development PDR Mission Planning Software Development SRR Mission Planning Software Development PDR						
<b>FY 2016 OCO Plans:</b> N/A						
<b>Title:</b> Aircraft Electrical Power		-	-	1.766	-	1.766
<b>Description:</b> Re-design power distribution system.						
This is a joint V-22 effort being developed in conjunction with the Department of the Navy.						
This project is a FY2016 new start.						
<b>FY 2014 Accomplishments:</b> N/A						
<b>FY 2015 Plans:</b> N/A						
<b>FY 2016 Base Plans:</b> Start design/development activities for Generator Control Unit						
<b>FY 2016 OCO Plans:</b> N/A						
<b>Accomplishments/Planned Programs Subtotals</b>		-	38.719	36.576	-	36.576

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22
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**D. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDT&E: BA05: PE 0401318F: CV-22	46.705	-	-	-	-	-	-	-	-	-	415.035
• RDT&E: BA07: PE 1160421BB: <i>Special Operations, CV-22 Development</i>	-	-	-	-	-	-	-	-	-	-	520.411
• RDT&E: BA07: PE 1160403BB: <i>Special Operations, Aviation Systems</i>	2.817	0.182	-	-	-	0.707	14.372	21.806	-	-	39.884
• APAF: BA02: Line Item #1000CV2200: <i>CV-22 Modification</i>	104.199	21.578	18.832	-	18.832	20.158	18.522	23.307	21.505	-	1,713.822
• APAF: BA04: Line Item #V022A0: <i>CV-22 (MYP)</i>	285.998	15.000	-	-	-	-	-	-	-	-	4,244.528
• APAF: BA05: Line Item #V02200: <i>CV-22 Mods</i>	19.555	74.874	58.828	-	58.828	63.960	66.420	69.400	71.367	138.529	692.634
• APAF: BA07: B00100: <i>CV-22 Post-Production Support</i>	-	16.931	3.353	-	3.353	-	-	-	-	-	20.284
• RDT&E: BA005: PE 0604262N: <i>V-22A</i>	42.205	57.749	87.918	-	87.918	138.217	126.239	88.584	56.037	245.000	9,879.554

**Remarks**

**E. Acquisition Strategy**

The V-22 Joint Program Office NAVAIRSYSCOM PMA-275 is developing new capabilities for the V-22 in block increments. Block 0 and Block 10 have been developed & fielded, and Block 20 development is scheduled to complete 31 Dec 2015. NAVAIRSYSCOM awarded a cost plus fixed fee contract for IIS development and test in June 2014 with BA05 funds. After FY14, BA07 funds continue this effort. CNS/ATM development will be contracted with Raytheon and Bell-Boeing. The FY15 effort will be purchased sole source on a delivery order to an existing IDIQ (Indefinite Delivery Indefinite Quantity) contract with Raytheon. The FY16 effort will be purchased sole source on a delivery order to an existing BOA (Basic Ordering Agreement) with Bell-Boeing.

Development activities for the V-22 program are performed primarily by the prime contractor, Bell-Boeing, selected on a sole-source basis. Bell-Boeing is a strategic partnership between Bell Helicopter and Boeing Integrated Defense Systems. Efforts are underway to increase competition where feasible, depending primarily on the level of platform integration required.

OSD re-designated the V-22 program from ACAT ID to ACAT IC on 24 Jul 2012.



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22	

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22	<b>Project (Number/Name)</b> 676033 / CV-22 RDT&E POST PRODUCTION
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<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
CV-22 Osprey Block 20 Development	SS/CPFF	Bell Boeing : Amarillo, TX	0.000	-		7.420	Feb 2015	-		-		-	-	7.420	161.014
CV-22 Osprey Enhanced Self-deployment Capability	Various	Various : Various,	0.000	-		3.900	Mar 2015	8.519	Mar 2016	-		8.519	76.524	88.943	-
CV-22 Osprey Improved Inlet Solution (IIS)	SS/CPFF	Bell Boeing : Amarillo, TX	0.000	-		14.179	Feb 2015	15.396	Dec 2015	-		15.396	9.958	39.533	69.660
CV-22 Osprey CNS/ATM	SS/CPFF	Various : Various,	0.000	-		5.700	Jul 2015	3.200	Feb 2016	-		3.200	1.226	10.126	-
CV-22 Osprey Aircraft Electrical Power	SS/CPFF	Bell Boeing : Amarillo, TX	0.000	-		-		1.766	Jun 2016	-		1.766	13.799	15.565	-
<b>Subtotal</b>			0.000	-		31.199		28.881		-		28.881	101.507	161.587	-

**Remarks**  
 Block 20 Development Target Value of Contract differs from total cost because most of the Block 20 development cost is shown in BA05 PE 0401318F. In addition, the Special Operations Forces (SOF) peculiar development efforts were funded by USSOCOM MFP-11 funding.

IIS Development Target Value of Contract differs from total cost because this is a Joint development funded by Navy and Air Force. Navy funding for IIS is shown in RDT&E,N PE 0604262N budget exhibit.

<b>Support (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
CV-22 Osprey Test & Evaluation Technical Support	MIPR	Various : Various,	0.000	-		2.420	Feb 2015	2.468	Dec 2015	-		2.468	18.714	23.602	-
<b>Subtotal</b>			0.000	-		2.420		2.468		-		2.468	18.714	23.602	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22	<b>Project (Number/Name)</b> 676033 / CV-22 RDT&E POST PRODUCTION

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Block 20 Increment 3 Development, Test and Evaluation																												
-- Long range comm upgrades ground and flight test																												
Enhanced Self Deployment																												
-- Risk Reduction Analysis																												
--Intelligence Broadcast Receiver Design and Development																												
Improved Inlet solution																												
-- IIS development and design reviews																												
-- IIS ground and flight test																												
CNS/ATM																												
-- RNP RNAV (GPS) Development and design reviews																												
-- RNP RNAV (GPS) ground and flight tests																												
Aircraft Electrical Power																												
--Development and design reviews																												
-- Component/system qualification testing																												
--Ground and flight test																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22	<b>Project (Number/Name)</b> 676033 / CV-22 RDT&E POST PRODUCTION

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 20 Increment 3 Development, Test and Evaluation	2	2015	1	2016
-- Long range comm upgrades ground and flight test	2	2015	1	2016
Enhanced Self Deployment	2	2015	4	2020
-- Risk Reduction Analysis	2	2015	4	2020
--Intelligence Broadcast Receiver Design and Development	3	2016	4	2017
Improved Inlet solution	2	2015	4	2017
-- IIS development and design reviews	2	2015	4	2016
-- IIS ground and flight test	1	2017	4	2017
CNS/ATM	4	2015	3	2019
-- RNP RNAV (GPS) Development and design reviews	4	2015	4	2017
-- RNP RNAV (GPS) ground and flight tests	4	2017	3	2019
Aircraft Electrical Power	3	2016	4	2020
--Development and design reviews	3	2016	4	2017
-- Component/system qualification testing	1	2018	2	2019
--Ground and flight test	2	2019	4	2019

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / <i>Presidential Aircraft Replacement (PAR)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	0.000	-	11.006	-	-	-	-	-	-	-	-	11.006
675355: <i>Presidential Aircraft Recapitalization</i>	0.000	-	11.006	-	-	-	-	-	-	-	-	11.006
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	

**MDAP/MAIS Code:** 425

**Note**

In FY 2015, PE 0401314F, Operational Support Airlift, Project 675355, Presidential Aircraft Recapitalization efforts were transferred to PE 0401319F, Presidential Aircraft Recap (PAR), Project 655250 Presidential Aircraft Recapitalization, in order to improve transparency for ACAT I acquisition programs.

In FY 2016, PE 0401319F, Presidential Aircraft Recapitalization, Project 655250 Presidential Aircraft Recapitalization is transferred to BA 05 PE 0401319F, Presidential Aircraft Recapitalization, Project 655250 Presidential Aircraft Recapitalization to align BA with stage of development.

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

The PAR program plans to replace the current VC-25A fleet with a new fleet of aircraft to meet the requirements for the President of the United States to execute the three roles of Head of State, Chief Executive, and Commander in Chief. The PAR aircraft will be a four engine commercial derivative wide-body aircraft, uniquely missionized to provide the President of the United States, staff, and guests with safe and reliable air transportation with the equivalent level of communications capability and security available in the White House. Specialized mission equipment will include: electrical upgrades to include dual Auxiliary Power Units (APUs); mission communications system; passenger communications; work and rest environment; executive interiors; military avionics; self-defense systems; autonomous enplaning and deplaning; and autonomous baggage loading. There will be no significant change in the Concept of Operations (CONOPS) or Concept of Employment (CONEMP) from the existing VC-25A platform.

On 28 August 2012, the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) approved the PAR Materiel Development Decision (MDD) and tasked the Air Force to conduct a Requirements and Sustainment Trade Analysis (RASTA). RASTA analysis identified the non-tradable requirements and revalidated the need for a four-engine wide-body aircraft. The RASTA results were presented to the Defense Acquisition Board in August 2013 and were incorporated into the Capability Development Document (CDD). The CDD was validated by the Air Force Requirements Oversight Council (AFROC) in May 2014 and by the Joint Requirements Oversight Council (JROC) in November 2014.

This budget supports acquisition planning efforts and studies as well as pre-Engineering and Manufacturing Development (EMD) contract studies for PAR. Acquisition planning, program documentation and risk reduction studies include systems engineering strategy and analysis; risk analysis and management; concept definition and trade studies; test and evaluation strategy; life cycle cost estimates; sustainment and logistics analysis; information support and network analysis; technology and

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / <i>Presidential Aircraft Replacement (PAR)</i>
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manufacturing maturity analysis and other government costs. PAR pre-EMD studies support requirements decomposition, improve affordability and reduce program execution risk.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	-	11.006	103.302	-	103.302
Current President's Budget	-	11.006	-	-	-
Total Adjustments	-	-	-103.302	-	-103.302
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-103.302	-	-103.302

**Change Summary Explanation**

FY16, PE 0401319F, Project 675355 efforts were transferred to PE 0401319F, Project 655250, BA 05 in order to improve transparency for ACAT I acquisition programs.

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> Acquisition Planning	-	11.006	-
<b>Description:</b> Acquisition Planning, Program Documentation and Studies			
<b>FY 2014 Accomplishments:</b> FY 2014 Presidential Aircraft Recapitalization efforts are executed in PE0401314F, Project 675355 BA 07.			
<b>FY 2015 Plans:</b> Activities involved with acquisition planning, program documentation and risk reduction activities including systems engineering strategy and analysis; risk reduction analysis and management; concept definition, requirements analysis and trade studies; test and evaluation strategy; life cycle cost estimates; sustainment and logistics analysis; information support and network analysis; and technology and manufacturing maturity analysis.			
<b>FY 2016 Plans:</b> FY 2016 Presidential Aircraft Recapitalization efforts are executed in PE0401319F, Project 655250 BA 05.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	11.006	-



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / <i>Presidential Aircraft Replacement (PAR)</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• RDTE: BA07: PE 0401314F: <i>Presidential Aircraft Recap (PAR)</i>	6.403	-	-	-	-	-	-	-	-	-	-
• RDTE: BA05: PE 0401319F: <i>Presidential Aircraft Recap (PAR)</i>	-	-	102.620	-	102.620	480.977	505.899	513.607	458.672	Continuing	Continuing

**Remarks**

FY 2014 and prior Presidential Aircraft Recapitalization efforts are executed in PE0401314F, Project 675355 BA 07; FY 2016 and beyond Presidential Aircraft Recapitalization efforts are executed in PE0401319F, Project 655250 BA 05.

**E. Acquisition Strategy**

Acquisition Strategy in development; anticipating Milestone Decision Authority (MDA) approval in 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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / <i>Presidential Aircraft Replacement (PAR)</i>	<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PAR Program Documentation and Studies	Various	TBD : ,	0.000	-		9.047	Mar 2015	-		-		-	-	9.047	-
<b>Subtotal</b>			0.000	-		9.047		-		-		-	-	9.047	-

**Remarks**  
 Costs associated with acquisition planning, program documentation and risk reduction activities including systems engineering strategy and analysis; risk reduction analysis and management; concept definition, requirements analysis and trade studies; test and evaluation strategy; life cycle cost estimates; sustainment and logistics analysis; information support and network analysis; and technology and manufacturing maturity analysis

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PAR Program Management Activities	Various	AFLCMC/WLJC : Dayton, OH	0.000	-		1.959	Oct 2014	-		-		-	-	1.959	-
<b>Subtotal</b>			0.000	-		1.959		-		-		-	-	1.959	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / <i>Presidential Aircraft Replacement (PAR)</i>	<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>
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<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
Program Management Administration enables operation of program office management and oversight to support PAR. Management activities include A&AS support and travel to support developmental planning efforts.

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	-	11.006	-	-	-	-	11.006	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / <i>Presidential Aircraft Replacement (PAR)</i>	<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Program Documentation and Risk Reduction Studies																												
Acquisition Strategy Development																												
Develop Request for Proposal																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401319F / <i>Presidential Aircraft Replacement (PAR)</i>	<b>Project (Number/Name)</b> 675355 / <i>Presidential Aircraft Recapitalization</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Program Documentation and Risk Reduction Studies	1	2015	4	2015
Acquisition Strategy Development	1	2015	4	2015
Develop Request for Proposal	1	2015	4	2015

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0408011F / <i>Special Tactics / Combat Control</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	6.021	8.312	7.963	-	7.963	8.046	8.146	8.194	8.341	Continuing	Continuing
675138: <i>ST System Development</i>	-	6.021	8.312	7.963	-	7.963	8.046	8.146	8.194	8.341	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Special Tactics/Combat Control, Special Tactics (ST) System Development project focuses on modernization developments for the Battlefield Airmen Operations (BAO) Kit. The project is a program within the overarching Battlefield Airmen Modernization (BA-Mod) Program. BAO Kit will develop, test, train and modernize the existing and future Family of Systems (FoS) that provides a state-of-the-art Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) suite for Air Force Special Operations Command's (AFSOC's) Battlefield Airmen. Efforts in the Special Tactics System Development project focus on reducing the risk of fratricide and substantially reducing size and weight of the equipment carried through three core capabilities: Human Machine Interface (HMI), Line of Sight (LOS) targeting, and Machine to Machine (M2M) C4ISR System.

This program will develop and enhance technologies for Battlefield Airmen Special Tactics Operators (STO)/Combat Controllers (CCT) to recognize, identify, range, nominate and designate targets during both day and night operations. BAO Kit will also significantly reduce the time required to find, fix, track, target and engage the enemy by providing highly accurate target grid coordinates in three dimensions, generating target imagery both pre and post-strike, and transmitting target data to Command and Control centers. All BAO Kit systems are light, compact and portable for use by dismounted Battlefield Airmen. FY16 BAO Kit funding will provide significant improvements in operational capability, situational awareness and precision lethality in the battle space and continue to build and enhance the BAO Kit system of systems. These efforts will deliver enhanced capability for the dismounted soldier in terms of dramatic weight reduction and increased mission effectiveness across the conflict spectrum.

The Special Tactics (ST) System Development activities also include studies and analysis to support both current and future program planning and execution.

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.

The FY2016 funding request was reduced by \$0.260 million to account for the availability of prior execution balances.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0408011F / <i>Special Tactics / Combat Control</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	6.174	8.405	8.275	-	8.275
Current President's Budget	6.021	8.312	7.963	-	7.963
Total Adjustments	-0.153	-0.093	-0.312	-	-0.312
• Congressional General Reductions	-	-0.093			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.153	-			
• Other Adjustments	-	-	-0.312	-	-0.312

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Human Machine Interface	1.350	3.481	3.796	-	3.796
<b>Description:</b> HMI is a system of systems that provides integrated operator interface between all the machine components by using unified visual and auditory displays and controls, such as head-mounted displays, tactical earplug connectivity with man pack or handheld communications, integrated tactical computing solution and power generation and management systems.					
<b>FY 2014 Accomplishments:</b>					
- Spectrum Management: testing and certification of new waveforms via 88th Communications Group.					
- Handheld Link-16: Collaborated with Southern Command (SOCOM) for encryption modular size reduction; enabling form factor usage in handheld devices. This effort enables reduction in weight of the unit for Special Operations Forces (SOF) operators in critical capabilities in Area of Responsibility (AOR)s allowing intra-operations with US and coalition air assets.					
<b>FY 2015 Plans:</b>					
- Will continue to develop/test special tactics integrated combat system. System development will enhance combat situational awareness and precision lethality in the battle space. Combines heads up display, increased audio capabilities and integrated tactical system for combat effects.					
- Develop alternative energy and power capabilities to support special tactics mission sets and mission durations. Industry has evolved with more robust solutions while decreasing size and weight allowing the dismounted operator more capability in the battle space. Handheld Link-16 receiver/transmitter will be a focus					



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0408011F / <i>Special Tactics / Combat Control</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
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for the dismounted operator and interaction with next generation aircraft. Capability will align in the digitally aided combat air support operations.

- Handheld Link-16: Continue development in the handheld form factor enabling the legacy waveform to be utilized by the operators in the field.

Spectrum Management: Continue research, test and analysis of waveform usage as they evolve.

- Communications Development: Continue upgrading effort of the PRC-152 to the PRC-152A. This evolution would reduce the SWAP (Size, Weight and Power) additionally; the SPO is exploring opportunities to integrate the Selective Availability Anti-Spoofing Module (SAASM) GPS hardware into the PRC-152A to mirror the capability PRC-117G Manpack radio.

**FY 2016 Base Plans:**

- Mobile User Objective System (MUOS) waveform will allow DoD to operate without the dependency of civilian SATCOM services.
- Secondly, the Navy is expected to complete their latest SATCOM constellation in FY16 that specifically supports MUOS simultaneous multi-channel radios (manpack and handheld). The proposed simultaneous multi-channel radios will offer additional operations capabilities by reducing the current configuration of two handheld radios to one unit while providing up to three operational channels (voice and data) simultaneously.
- Handheld Link-16 receiver/transmitter will be a focus for the dismounted operator and interaction with next generation aircraft. Capability will align in the digitally aided combat air support operations.
- Implementation of the Netted Iridium (Cosmic-Empyre State) waveform granting DoD dedicated airtime. This new satellite constellation is expected to provide SATCOM on the move capability enabling operators to maintain a more constant link for voice and data services.
- Web-based Geographic Information System (GIS) management tool, used to store, display, update, and report operational information on sensitive global airfields and Assault Zones (AZ) while incorporating approval processes designed to support rapid Global Mobility missions for the USG.
- Talon Point consists of three main system functions: A fully relational database with associated storage, visual GIS tool and a management tool/web application.

**FY 2016 OCO Plans:**  
N/A

<b>Title:</b> Line of Sight	1.885	0.481	-	-	-
<b>Description:</b> Line of Sight-Short targeting enables the ST Battlefield Airmen to find, fix, track, target and engage the enemy at close range during day or night operations by providing highly accurate target coordinates in three					

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0408011F / <i>Special Tactics / Combat Control</i>				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<p>dimensions and generates vital imagery both pre and post-strike at a fraction of the weight and more efficiently than legacy equipment carried by the operator.</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Completed assembly of Engineering, Manufacturing &amp; Development (EMD) Unit #1</li> <li>- Finalized plans for combined contractor qualification testing and government development testing.</li> <li>- Completed initial integration with BAO Kit software suite, and began assembly process for EMD Units #2 and #3.</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue development and enhancement of a three in one target/geo-locate/designate capability for dismounted operations.</li> <li>- Enhanced capability will increase capability in the battle space while decreasing 27+ lbs to ground forces.</li> </ul> <p><b>FY 2016 Base Plans:</b> N/A</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>						
<p><b>Title:</b> Machine to Machine C4ISR System</p> <p><b>Description:</b> A suite of map-centric software applications that enables M2M transfer of precision targeting, information management, C4ISR and Situational Awareness (SA) information. Provides the ST Battlefield Airmen the ability to find, fix, track, target and engage the enemy which greatly reduces the kill chain and drastically decreases the possibility of fratricide by enhancing the operator's situational awareness on the battlefield.</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Developed and tested material prototypes of M2M interfaces for C4ISR, provided enhanced Video Data Link (VDL) capability enabling greater battlefield situational awareness and interoperability.</li> <li>- Optimized system configuration and troubleshooting to drastically decrease operator burden; while incorporating Digitally Aided Close Air Support (DACAS) standardization ensuring digital communication interoperability across DoD and Coalition platforms increasing battle space interoperability and reducing the possibility of fratricide.</li> </ul>		2.786	4.350	4.167	-	4.167

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0408011F / <i>Special Tactics / Combat Control</i>
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**C. Accomplishments/Planned Programs (\$ in Millions)**

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- The BAO Kit software release has been created, tested and fielded to operational units supporting overseas contingency operations.  <b>FY 2015 Plans:</b> Continue to develop and test material prototypes of M2M interfaces for C4ISR; enhanced target mensuration, increasing precision strike capabilities, enabling a reduced kill chain and increase in speed of effects and lethality; continued critical tactical data link implementation, increasing digital communication and situational awareness capabilities; mapping engine optimization, providing greater battlefield situational awareness while engaged with the enemy; incorporation of Low Probability of Detection (LPD) communications for near peer adversaries in the Anti-Access Area-Denial (A2AD) environment; increase interoperability with land and sea based fire systems and enhancing lethality.  <b>FY 2016 Base Plans:</b> Will continue to develop and test material prototypes of M2M interfaces for C4ISR; investigate alternate operating systems and application development; continued 5th Generation fighter integration; exploration of Net Enabled Weapons (NEW) employment; exploration of wireless and Bluetooth technologies to reduce the Size, Weight and Power of the system reducing operator load; exploitation of two-way Video Data Link capability, increasing interoperability; incorporation of theatre level intelligence systems enhancing SA to the war fighter and increasing survivability of the strike force.  <b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	6.021	8.312	7.963	-	7.963

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPAF: BA03: Line Item # 837100: <i>Tactical C-E Equipment</i>	14.339	16.520	11.207	-	11.207	15.258	15.493	15.547	16.038	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

The evolutionary acquisition strategy will focus on meeting immediate requirements with current technology while pursuing future increments for improved accuracy, increased vertical and horizontal integration, and reduced weight. Future increments will be incorporated as funding and technology allow.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0408011F / <i>Special Tactics / Combat Control</i>	

**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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)					Project (Number/Name)						
3600 / 7				PE 0408011F / <i>Special Tactics / Combat Control</i>					675138 / <i>ST System Development</i>						
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Human Machine Interface (HMI)	C/Various	Various : Various, NA	-	0.850	Sep 2014	2.661	Jan 2015	3.296	Oct 2015	-		3.296	Continuing	Continuing	-
Line of Sight	C/FPIF	Argon ST, Inc : Orlando, FL	-	1.885	Nov 2013	0.481	Oct 2014	-		-		-	Continuing	Continuing	-
Machine-To-Machine Software Development	C/CPFF	Systems Research & Applications Corp : Dayton, OH	-	2.786	Jan 2014	4.350	Oct 2014	4.167	Oct 2015	-		4.167	Continuing	Continuing	-
<b>Subtotal</b>			-	5.521		7.492		7.463		-		7.463	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Agency Support	RO	46 TS : Eglin AFB, FL	-	0.500	Jan 2014	0.820	Oct 2014	0.500	Oct 2015	-		0.500	Continuing	Continuing	-
<b>Subtotal</b>			-	0.500		0.820		0.500		-		0.500	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0408011F / <i>Special Tactics / Combat Control</i>	<b>Project (Number/Name)</b> 675138 / <i>ST System Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Human Machine Interface (HMI)	1	2014	4	2020
Line of Sight (LOS)	1	2014	4	2015
Machine to Machine C4ISR System	1	2014	4	2020



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0702207F / <i>Depot Maintenance (Non-IF)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	1.605	1.407	1.525	-	1.525	1.533	1.537	1.513	1.540	Continuing	Continuing
673326: <i>Precision Measurement &amp; Calibration</i>	-	1.605	1.407	1.525	-	1.525	1.533	1.537	1.513	1.540	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

This program develops, tests, and evaluates national and Air Force measurement standards (hardware) and calibration equipment in support of all Air Force programs and activities, including Precision Measurement Equipment Laboratories (PMELs) worldwide. Metrology research and development provides technology to support systems in all phases of development and acquisition, as well as Air Force R&D laboratories, test ranges, ground test facilities, and operational weapons systems support. Rapidly changing technology requires continuing research and development of measurement standards and calibration equipment to ensure modern weapon systems meet Air Force readiness objectives. This program addresses all metrology disciplines and includes the technology areas of laser, infrared, microwave, millimeter wave, optical, physical, mechanical, electrical, electronic, and ionizing radiation measurements. Metrology is a technical discipline devoted to the science of measurements and to the study and improvement of measurement technology. Measurements are the foundation of military system development, quality assurance, hardware conformance testing and system readiness tests. The integrity of these tests is assured through calibration and traceability assurance schemes. The capability to measure and calibrate must parallel the emergence of new technology, new ranges, and new capabilities of military systems. Lack of new measurement capability impedes or blocks the successful exploitation of new technologies, especially in the movement from development laboratory to production to deployment. R&D efforts are essential within the DoD to pace these requirements, otherwise, these same new systems will suffer time delays, excessive cost, and increased risk due to unreliable test results in all phases of development, production, deployment and operation.

Program is managed by Air Force Material Command, Agile Combat Support Directorate, Air Force Metrology Division (WNM).

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.

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0702207F / <i>Depot Maintenance (Non-IF)</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	1.605	1.407	1.664	-	1.664
Current President's Budget	1.605	1.407	1.525	-	1.525
Total Adjustments	-	-	-0.139	-	-0.139
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.139	-	-0.139

<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Weapons Systems Measurement Standards	0.843	0.440	0.565	-	0.565
<b>Description:</b> Continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.					
<b>FY 2014 Accomplishments:</b> Project development continues on infrared/laser/electro-optical weapon system support.					
<b>FY 2015 Plans:</b> Project development continues on infrared/laser/electro-optical weapon system support.					
<b>FY 2016 Base Plans:</b> Project development continues on infrared/laser/electro-optical weapon system support.					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Title:</b> Electrical Measurements	0.160	0.396	-	-	-
<b>Description:</b> Continue development of standards for electrical measurements to support high accuracy electronic test equipment.					
<b>FY 2014 Accomplishments:</b>					



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0702207F / <i>Depot Maintenance (Non-IF)</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p>Calibration standards which support physical, mechanical and electro-mechanical support equipment will continue to be developed to meet ever changing technology.</p> <p><b>FY 2015 Plans:</b> Calibration standards which support physical, mechanical and electro-mechanical support equipment will continue to be developed to meet ever changing technology.</p> <p><b>FY 2016 Base Plans:</b> Calibration standards which support physical, mechanical and electro-mechanical support equipment will continue to be developed to meet ever changing technology.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>					
<p><b>Title:</b> Analytical Metrology</p> <p><b>Description:</b> Continue development of standards, models, and procedures to support analytical metrology applications.</p> <p><b>FY 2014 Accomplishments:</b> Began evaluating the technical feasibility of a Vision system in metrology applications for the purpose of reducing manpower requirements.</p> <p><b>FY 2015 Plans:</b> Projects continue in development phase to meet changing technology.</p> <p><b>FY 2016 Base Plans:</b> Projects continue in development phase to meet changing technology.</p> <p><b>FY 2016 OCO Plans:</b> N/A</p>	0.142	0.060	0.100	-	0.100
<b>Accomplishments/Planned Programs Subtotals</b>	1.605	1.407	1.525	-	1.525

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

**Remarks**

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0702207F / <i>Depot Maintenance (Non-IF)</i>
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**E. Acquisition Strategy**  
Primarily accomplished through intergovernmental transfer between the Department of Defense and other Federal Departments.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0702207F / Depot Maintenance (Non-IF)	<b>Project (Number/Name)</b> 673326 / Precision Measurement & Calibration
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
National Institute of Standards & Technology	MIPR	AFMETCAL : Heath, OH	-	1.088	Aug 2014	0.974	Aug 2015	1.100	Aug 2016	-		1.100	Continuing	Continuing	-
Department of Defense	MIPR	AFMETCAL : Heath, OH	-	0.010	Aug 2014	0.260	Aug 2015	0.200	Aug 2016	-		0.200	Continuing	Continuing	-
Industry	SS/T&M	AFMETCAL : Heath, OH	-	0.507	Aug 2014	0.173	Aug 2015	0.225	Aug 2016	-		0.225	Continuing	Continuing	-
<b>Subtotal</b>			-	1.605		1.407		1.525		-		1.525	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	1.605	1.407	1.525	-	1.525	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2016 Air Force							<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0702207F / <i>Depot Maintenance (Non-IF)</i>			<b>Project (Number/Name)</b> 673326 / <i>Precision Measurement &amp; Calibration</i>				

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
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<b>Remarks</b>									

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0702207F / <i>Depot Maintenance (Non-IF)</i>	<b>Project (Number/Name)</b> 673326 / <i>Precision Measurement &amp; Calibration</i>
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FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

Standards Development	
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0702207F / <i>Depot Maintenance (Non-IF)</i>	<b>Project (Number/Name)</b> 673326 / <i>Precision Measurement &amp; Calibration</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Standards Development	1	2014	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>
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COST (\$ in Millions)	Prior Years <sup>(+)</sup>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	58.532	62.894	112.676	-	112.676	1.430	3.602	4.781	4.847	Continuing	Continuing
675207: <i>Logistics IT System Modernization</i>	-	58.532	62.894	112.676	-	112.676	1.430	3.602	4.781	4.847	Continuing	Continuing

<sup>(+)</sup> The sum of all Prior Years is \$655.115 million less than the represented total due to several projects ending

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

The Air Force requires an integrated logistics capability that provides timely, accurate and reliable information to decision makers at all levels of command and across the full range of military operations.

The Air Force is applying the lessons learned from the Expeditionary Combat Support System (ECSS) Acquisition Incident Review (AIR) in development of a hybrid approach of core logistics system remediation / modification and transformation, to include transitioning to a common IT hosting environment.

Financial Improvement Audit Readiness (FIAR) and Software Upgrades

The remediation and modification of core logistics systems is necessary for the Air Force to meet statutory Financial Improvement Audit Readiness (FIAR) by 2017 and align with the Joint Chiefs of Staff J-4 Concept for Logistics and the Air Force Logistics Board's approved Enterprise Logistics Strategy (ELS). The Air Force planned for ECSS to subsume most of the Service's core logistics systems upon fielding and therefore placed them in barebones reduced maintenance status during the ECSS program. Due to the cancellation of ECSS, the Air Force must sustain and modernize these systems through both FIAR Remediation, to address the most immediate gaps in meeting FIAR by the 2017 statutory deadline, and Software Upgrades, to reduce high operating costs, implement previously deferred statutory compliance requirements and improve near term system performance.

Systems contained in these business areas include, but are not limited to, the Air Force Equipment Management System (AFEMS), Integrated Maintenance Data System (IMDS), Reliability and Maintainability Information System (REMIS), Combat Ammunitions System (CAS), Enhanced Maintenance Operations Center (EMOC), Aircraft Structural Integrity Management Information System (ASIMIS), Integrated Logistics System-Supply (ILS-S), Cargo Movement Operations System (CMOS), Stock Control System (SCS), Purchase Request Process System (PRPS), Automated Logistics Management Support System (ALMSS), Depot Maintenance Accounting and Production System (DMAPS), Enhanced Technical Information Management System (ETIMS), and Weapon System Management Information System (WSMIS).

Transformation

The Air Force must transform its logistics business processes and transition away from using numerous stovepipe systems and process flows that execute the same tasks. Eliminating process redundancies across the logistics enterprise will enable the Air Force to execute more efficient, cost-effective and integrated logistics in the

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	
<p>long term. The objective of Transformation is to conduct business process reengineering (BPR) to identify and eliminate overlaps in our current processes and where appropriate, implement the use of new information technology systems.</p> <p>The Air Force Service Development and Delivery Process (SDDP) is being applied as part of this BPR effort to apply discipline and focus to the task of process reengineering and requirements development in order to reduce risk and successfully transform logistics IT systems. In the SDDP, the requirements definition, architecture and design for an IT capability is a government-owned process. The SDDP ensures the AF end user and Sponsor consider all possible doctrine, organization, training, material, leadership, personnel and facility (DOTMLPF) solutions to the end user's need/problem before a materiel solution is sought. The SDDP is a six-step process, each step with its own specific product outcomes that serve as the basis for downstream activities in the SDDP and facilitating enterprise-level analysis to maximize reuse of existing capabilities. Maximizing reuse will eliminate duplicate implementation actions across the Air Force and assure individual user problems or needs are not solved at the cost of overall enterprise benefits. The outcome of using the SDDP is a well-described requirement which may include a materiel solution, in which case the SDDP details the acquisition and implementation activities to support delivery of the capability. Alternatively, success may be demonstrated by the resolution of the user's problem without a materiel solution.</p> <p>The Air Force logistics enterprise is comprised of multiple overarching functional areas, to include maintenance, repair and overhaul, end-to-end supply chain support, base supply inventories, and predictive analysis and forecasting. The Air Force will standardize its business processes within each major logistics functional area through Transformation Capability Initiatives (CI). Transformation CIs include, but are not limited to: Maintenance, Repair and Overhaul (MROi), Supply Chain Management (SCM), and Product Lifecycle Management (PLM).</p> <p>-MROi will create an integrated capability that plans, schedules, and executes organic depot maintenance support functions critical to agile planning, optimized workload assignment, resource allocation and throughput, thereby increasing depot maintenance support to the warfighter.</p> <p>-SCM includes Supply, Item Master, and Government Furnished Materiel (GFM) initiatives.</p> <p>-SCM Supply encompasses centralized planning and management of items and equipment such as: repairables, consumables, Nuclear Weapons-Related Materiel (NWRM) and cryptographic items and comprises business operations and inventory for the Air Force Base Supply community.</p> <p>-SCM Item Master provides the capability to manage comprehensive, accurate, reliable item master data (e.g., accurate identification and authorization of owners and users of items).</p> <p>-SCM GFM will provide AF accountability for contractor managed government material and reporting of logistics and financial data. AF will be able to track end-to-end logistics and financial transactions, provide total asset visibility (TAV) and report equipment and material inventory values.</p> <p>-PLM enables Air Force engineering/logistics communities to define, track, protect and manage product data for Air Force weapon systems and equipment. The Air Force requires the ability to control configuration of the product throughout the life of the asset. Standardized configuration control will ensure validity, accuracy and</p>		

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>
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reliability, currency, and security of the product information which will increase weapon system readiness by decreasing costs to manage, protect, store and deliver product information.

-BA 7 - 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.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	60.410	109.685	90.179	-	90.179
Current President's Budget	58.532	62.894	112.676	-	112.676
Total Adjustments	-1.878	-46.791	22.497	-	22.497
• Congressional General Reductions	-	-0.141			
• Congressional Directed Reductions	-	-46.650			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.878	-			
• Other Adjustments	-	-	22.497	-	22.497

**Change Summary Explanation**

Increase in FY16 supports Logistics Transformation and operational software upgrade requirements.

FY14: Reduction for higher AF priorities.

FY15: Congressional reduction for prioritizing audit readiness / excess funds.

FY16: Increase supports requirements related to remaining audit readiness needs, development of Maintenance, Repair and Overhaul initiative (MROi) and cost-effective legacy software upgrades.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>				<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675207: <i>Logistics IT System Modernization</i>	-	58.532	62.894	112.676	-	112.676	1.430	3.602	4.781	4.847	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Financial Improvement Audit Readiness (FIAR) and Software Upgrades

Systems contained in these business areas include, but are not limited to, the Air Force Equipment Management System (AFEMS), Integrated Maintenance Data System (IMDS), Reliability and Maintainability Information System (REMIS), Combat Ammunitions System (CAS), Enhanced Maintenance Operations Center (EMOC), Aircraft Structural Integrity Management Information System (ASIMIS), Integrated Logistics System-Supply (ILS-S), Cargo Movement Operations System (CMOS), Stock Control System (SCS), Purchase Request Process System (PRPS), Automated Logistics Management Support System (ALMSS), Depot Maintenance Accounting and Production System (DMAPS), Enhanced Technical Information Management System (ETIMS), and Weapon System Management Information System (WSMIS).

Transformation

The Air Force logistics enterprise is comprised of multiple overarching functional areas, to include maintenance, repair and overhaul, end-to-end supply chain support, base supply inventories, and predictive analysis and forecasting. The Air Force will standardize its business processes within each major logistics functional area through Transformation Capability Initiatives (CI). Transformation CIs include but are not limited to: Maintenance, Repair and Overhaul (MROi), Supply Chain Management (SCM), and Product Lifecycle Management (PLM).

-MROi will create an integrated capability that plans, schedules, and executes organic depot maintenance support functions critical to agile planning, optimized workload assignment, resource allocation and throughput, thereby increasing depot maintenance support to the warfighter.

-SCM includes Supply, Item Master, and Government Furnished Materiel (GFM) Accountability initiatives.

-SCM Supply encompasses centralized planning and management of items and equipment such as: repairables, consumables, Nuclear Weapons-Related Materiel (NWRM) and cryptographic items and comprises business operations and inventory for the Air Force Base Supply community.

-SCM Item Master provides the capability to manage comprehensive, accurate, reliable item master data (e.g., accurate identification and authorization of owners and users of items).

-SCM GFM Accountability will provide AF accountability for contractor managed government material and reporting of logistics and financial data. AF will be able to track end-to-end logistics and financial transactions, provide total asset visibility (TAV) and report equipment and material inventory values.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>

-PLM enables Air Force engineering/logistics communities to define, track, protect and manage product data for Air Force weapon systems and equipment. The Air Force requires the ability to control configuration of the product throughout the life of the asset. Standardized configuration control will ensure validity, accuracy and reliability, currency, and security of the product information which will increase weapon system readiness by decreasing costs to manage, protect, store and deliver product information.

-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>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> Automated Logistics Management Support System (ALMSS) Financial Improvement Audit Readiness (FIAR)</p> <p><b>Description:</b> Modify ALMSS software to support Financial Improvement Audit Readiness (FIAR).</p> <p><b>FY 2014 Accomplishments:</b> Program initiation revised from FY14 to FY15 to support higher AF priorities.</p> <p><b>FY 2015 Plans:</b> Modify ALMSS to support FIAR requirements.</p> <p><b>FY 2016 Plans:</b> Continue to modify ALMSS to support FIAR requirements.</p>	-	0.850	0.100
<p><b>Title:</b> Combat Ammunition System (CAS) Software Upgrade</p> <p><b>Description:</b> Modify CAS software to an object oriented/modular design, provide a more sustainable and scalable baseline, and improve operational performance. Modify CAS software to support Financial Improvement and Audit Readiness (FIAR).</p> <p><b>FY 2014 Accomplishments:</b> Initiated CAS software upgrade effort.</p> <p><b>FY 2015 Plans:</b> Continue to modify the CAS software to an object oriented/modular design, provide an enhanced sustainable and scalable baseline, and improve operational performance. Modify CAS software to support FIAR requirements.</p> <p><b>FY 2016 Plans:</b> Continue work to modify CAS software to an object oriented/modular design, provide an enhanced sustainable and scalable baseline, and improve operational performance. Modify CAS software to support FIAR.</p>	7.000	4.798	8.442
<p><b>Title:</b> Depot Maintenance Accounting and Production System (DMAPS) Financial Improvement Audit Readiness (FIAR)</p>	-	2.410	1.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> Modify DMAPS software to support Financial Improvement and Audit Readiness (FIAR).</p> <p><b>FY 2014 Accomplishments:</b> NA</p> <p><b>FY 2015 Plans:</b> Modify DMAPS to comply with FIAR requirements.</p> <p><b>FY 2016 Plans:</b> Continue to modify DMAPS to support FIAR requirements.</p>				
<p><b>Title:</b> Integrated Logistics Systems-Supply (ILS-S) Financial Improvement Audit Readiness (FIAR)</p> <p><b>Description:</b> Modify software to support Financial Improvement and Audit Readiness (FIAR) Increment II. FY14/15 effort broken down into multiple releases to primarily address the following requirements. Release 3 (R3) - Expand orders management to include all orders Release 4 (R4) - Comply with Rehabilitation Act Section 508 Release 5 (R5) - Modify process for managing in-transit and inventory requirements.</p> <p><b>FY 2014 Accomplishments:</b> Initiated Increment II modification of software to support FIAR.</p> <p><b>FY 2015 Plans:</b> Continue modification of software to support FIAR Increment II.</p> <p><b>FY 2016 Plans:</b> Continue modification of software to support FIAR Increment II.</p>		2.046	3.740	2.206
<p><b>Title:</b> Integrated Logistics Systems-Supply (ILS-S) Software Modification - Re-Platform</p> <p><b>Description:</b> Previous ILS-S Software Upgrade effort was divided into two separate efforts: ILS-S Software Modification - Wrapper and ILS-S Software Modification - Re-Platform. The ILS-S Software Modification - Re-platform effort is to migrate the Standard Base Supply System (SBSS) source code and data from the current UNISYS mainframe Common Business-Oriented Language (COBOL) based SBSS environment to a mid-tier Java environment.</p> <p><b>FY 2014 Accomplishments:</b> NA</p> <p><b>FY 2015 Plans:</b></p>		-	8.950	8.225



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>Begin to migrate the SBSS source code and data from the current UNISYS mainframe COBOL based SBSS environment to a mid-tier Java environment. Begin functional requirements analysis and testing of the entire ILS-S application (1.3 million lines of code), which will require additional Subject Matter Experts, software developers, software tools, and hardware/licenses to test the environments. Certification and accreditation support as well as hardware/software maintenance support is also required.</p> <p><b>FY 2016 Plans:</b> Continue SW Upgrade Modification and related efforts.</p>				
<p><b>Title:</b> Purchase Request Process System (PRPS) Financial Improvement Audit Readiness (FIAR)</p> <p><b>Description:</b> Modify software to support Financial Improvement and Audit Readiness (FIAR).</p> <p><b>FY 2014 Accomplishments:</b> NA</p> <p><b>FY 2015 Plans:</b> Modify software to support FIAR requirements.</p> <p><b>FY 2016 Plans:</b> Continue to modify PRPS software to support FIAR requirements.</p>		-	3.000	0.300
<p><b>Title:</b> Air Force Equipment Management System (AFEMS) Financial Improvement Audit Readiness (FIAR)</p> <p><b>Description:</b> Modify AFEMS software to support Financial Improvement and Audit Readiness (FIAR). AFEMS is a large system with many touchpoints / interfaces that enables the Air Force to determine, authorize, account for, and report the types and quantities of equipment required accomplishing the Air Force mission, and serves as primary basis for organizational equipment budget/buy programs.</p> <p><b>FY 2014 Accomplishments:</b> Modified AFEMS software to support FIAR.</p> <p><b>FY 2015 Plans:</b> Continue to modify AFEMS software to support FIAR.</p> <p><b>FY 2016 Plans:</b> Continue to modify AFEMS software to support FIAR.</p>		2.208	1.337	0.500
<p><b>Title:</b> Air Force Equipment Management System (AFEMS) Software Upgrade</p> <p><b>Description:</b> AFEMS is a large system with many touchpoints / interfaces that enables the Air Force to determine, authorize, account for, and report the types and quantities of equipment required accomplishing the Air Force mission, and serves as primary</p>		-	-	20.330

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>basis for organizational equipment budget/buy programs. Software upgrades are necessary to allow transition into a Common Computing Environment in order to meet regulatory and statutory mandates, comply with equipment reporting capabilities (Unique Item Identifier (UII), Enterprise Data Collection Layer (EDCL)) and Defense Logistics Management Standards (DLMS).</p> <p>This is not a new start; all post-ECSS FIAR remediation and modification efforts for AF IT logistics IT systems were documented in the FY13 and FY14 justification materials for PE 0708610F under the Mission Description and Budget Item justification sections.</p> <p><b>FY 2014 Accomplishments:</b> NA</p> <p><b>FY 2015 Plans:</b> NA</p> <p><b>FY 2016 Plans:</b> Modify AFEMS (large system with many touchpoints / interfaces with other legacy systems) to convert architecture and software code to allow transition into a Common Computing Environment in order to meet regulatory and statutory mandates. Modify AFEMS to comply with equipment reporting capabilities (UII, EDCL) and Defense Logistics Management Standards (DLMS).</p>			
<p><b>Title:</b> Enhanced Technical Information Management System (ETIMS) Software Upgrade</p> <p><b>Description:</b> Modify ETIMS software to incorporate Joint Computer-Aided Acquisition and Logistics Support (JCALS) functionality and integrate additional ETIMS enhancements. Effort previously titled: ETIMS/JCALS. ETIMS also has funding in FY14 in PE 0708611F.</p> <p><b>FY 2014 Accomplishments:</b> Completed modification of ETIMS software to incorporate JCALS functionality.</p> <p><b>FY 2015 Plans:</b> Initiate enhancement activities to continue ETIMS Software Upgrade.</p> <p><b>FY 2016 Plans:</b> Continue enhancement activities for the ETIMS Software Upgrade.</p>	5.504	5.780	5.488
<p><b>Title:</b> Enhanced Maintenance Operations Center (EMOC) Software Upgrade</p> <p><b>Description:</b> Modify EMOC software to support one-way interface from G081, which is an Air Mobility Command (AMC) maintenance data system designator for the Core Automated Maintenance System for Mobility. This provides the ability to</p>	1.075	1.068	0.400

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>update and view an Expeditionary base's aircraft in one EMOC display comprised of selected aircraft from multiple Integrated Maintenance Data System (IMDS) Enterprise Location Codes (ELCs).</p> <p><b>FY 2014 Accomplishments:</b> Initiate software upgrade of EMOC.</p> <p><b>FY 2015 Plans:</b> Continue EMOC software upgrade.</p> <p><b>FY 2016 Plans:</b> Complete EMOC software upgrade.</p>				
<p><b>Title:</b> Integrated Maintenance Data System - (IMDS) Training Business Area (TBA) Software Upgrade</p> <p><b>Description:</b> Modify TBA software to provide additional Career Development Course (CDC), On-The-Job Training (OJT) Management, and Milestone functionality.</p> <p>This is not a new start; all post-ECSS FIAR remediation and modification efforts for AF IT logistics IT systems were documented in the FY13 and FY14 justification materials for PE 0708610F under the Mission Description and Budget Item justification sections.</p> <p><b>FY 2014 Accomplishments:</b> NA</p> <p><b>FY 2015 Plans:</b> NA</p> <p><b>FY 2016 Plans:</b> Initiate TBA Software Upgrade.</p>		-	-	3.906
<p><b>Title:</b> Integrated Maintenance Data System - Central Database (IMDS CDB) Software Upgrade</p> <p><b>Description:</b> Modify IMDS CDB Software to comply with statutory/regulatory technical improvements (Internet Protocol version 6 [IPv6], Item Unique Identification (IUID), etc), and enable an infrastructure migration to significantly reduce annual operating costs of critical maintenance documentation system.</p> <p><b>FY 2014 Accomplishments:</b> NA</p> <p><b>FY 2015 Plans:</b></p>		-	4.220	8.100

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Initiate IMDS CDB Software Upgrade. <b>FY 2016 Plans:</b> Continue IMDS CDB Software Upgrade to comply with statutory/regulatory technical improvements and enable an infrastructure migration to significantly reduce annual operating costs of critical maintenance documentation. Where necessary, implement the integration of the G081 system and IMDS CDB.				
<b>Title:</b> Integrated Maintenance Data System - Central Database (IMDS CDB) Maintenance Scheduling Application Tool (MSAT) Software Upgrade <b>Description:</b> Modify IMDS Central Database (CDB) software to enable the subsumption of the Maintenance Scheduling Application Tool (MSAT) functionality into IMDS CDB, reducing the number of core logistics systems required to document base level maintenance. <b>FY 2014 Accomplishments:</b> NA <b>FY 2015 Plans:</b> Initiate IMDS CDB MSAT Software Upgrade. <b>FY 2016 Plans:</b> Complete IMDS CDB MSAT Software Upgrade.		-	1.655	0.400
<b>Title:</b> Reliability and Maintainability Information System (REMIS) Software Upgrade <b>Description:</b> Modify REMIS software to transition system into a single open architecture baseline which will allow it to transition into a Common Computing Environment (CCE) and comply with statutory/regulatory requirements. REMIS is the primary Air Force data system for collecting, validating, editing, processing, integrating, standardizing, and reporting equipment maintenance data, including reliability and maintainability data, on a global, world-wide basis (large system with many touchpoints / interfaces with other legacy systems). REMIS provides authoritative information on weapon system availability, reliability and maintainability, capability, utilization, and configuration. <b>FY 2014 Accomplishments:</b> Initiated the modification of REMIS software to transition system into a single open architecture baseline. <b>FY 2015 Plans:</b>		3.402	8.867	4.053

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Continue to modify REMIS system into a single open architecture baseline, then transition to deferred enhancements and subsumption of other maintenance systems.  <b>FY 2016 Plans:</b> Continue REMIS Software Upgrade.				
<b>Title:</b> Stock Control System (SCS) Financial Improvement Audit Readiness (FIAR) <b>Description:</b> Modify SCS software to support Financial Improvement and Audit Readiness (FIAR).  <b>FY 2014 Accomplishments:</b> Awarded development contract to support Financial Improvement and Audit Readiness (FIAR). <b>FY 2015 Plans:</b> Continue SCS software to support Financial Improvement and Audit Readiness (FIAR). <b>FY 2016 Plans:</b> Continue SCS software to support Financial Improvement and Audit Readiness (FIAR).		1.799	7.608	14.714
<b>Title:</b> Transformation Capability Initiative - Supply Chain Management (SCM) Supply <b>Description:</b> SCM Supply encompasses centralized planning and management of items and equipment such as: repairables, consumables, Nuclear Weapons-Related Materiel (NWRM), cryptographic items; and comprises business operations and inventory for the Air Force Base Supply community.  Note: This is not a new start. The FY15 PB submission included all Supply Chain Management efforts (SCM Supply, SCM Item Master, and SCM Government Furnished Materiel (GFM)) under a single initiative called Supply Chain Management (SCM). In the FY16 PB, the AF divided SCM into three sub-initiatives to provide additional visibility into the specific mission process areas that will be addressed.  <b>FY 2014 Accomplishments:</b> NA <b>FY 2015 Plans:</b> NA <b>FY 2016 Plans:</b> Stand up program management support team and initiate SCM Supply effort.		-	-	1.340
<b>Title:</b> Transformation Capability Initiative - Supply Chain Management (SCM) Item Master		-	-	0.796

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> Provides the capability to manage comprehensive, accurate and reliable item data. SCM will initiate SDDP activities and will focus on preliminary system design to address Inventory Planning, Demand Planning, Supply Planning and Exception Management.</p> <p>Note: This is not a new start. The FY15 PB submission included all Supply Chain Management efforts (SCM Supply, SCM Item Master, and SCM Government Furnished Materiel (GFM)) under a single initiative called Supply Chain Management (SCM). In the FY16 PB, the AF divided SCM into three sub-initiatives to provide additional visibility into the specific mission process areas that will be addressed.</p> <p><b>FY 2014 Accomplishments:</b> NA</p> <p><b>FY 2015 Plans:</b> NA</p> <p><b>FY 2016 Plans:</b> Stand up program management team and initiate SCM Item Master effort.</p>			
<p><b>Title:</b> Transformation Capability Initiative - Supply Chain Management (SCM) Government Furnished Materiel (GFM)- Accountability</p> <p><b>Description:</b> SCM GFM Accountability will provide AF accountability for contractor managed government material and reporting of logistics and financial data. AF will be able to track end-to-end logistics and financial transactions, provide total asset visibility (TAV) and report equipment and material inventory values.</p> <p>Note: This is not a new start. The FY15 PB submission included all Supply Chain Management efforts (SCM Supply, SCM Item Master, and SCM Government Furnished Materiel (GFM)) under a single initiative called Supply Chain Management (SCM). In the FY16 PB, the AF divided SCM into three sub-initiatives to provide additional visibility into the specific mission process areas that will be addressed.</p> <p><b>FY 2014 Accomplishments:</b> NA</p> <p><b>FY 2015 Plans:</b> Stand up SCM GFM Accountability program management support team and initiate SCM GFM Accountability.</p> <p><b>FY 2016 Plans:</b></p>	-	0.259	0.717

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
In FY16 SCM GFM Accountability will continue activities supporting the Technical Demonstration, complete Department of Defense Architecture Framework (DoDAF) Architecture Artifacts, and the program management support team will complete Preferred Solution Analysis and initial cost estimate development.				
<p><b>Title:</b> Transformation Capability Initiative - Maintenance, Repair and Overhaul (MRO)</p> <p><b>Description:</b> The MRO Initiative (MROi) transformation effort will create an integrated capability for planning, scheduling, and executing organic depot maintenance to support agile planning, optimized workload assignment and resource allocation.</p> <p><b>FY 2014 Accomplishments:</b> MROi initiated Services Development, Delivery Process (SDDP) activities and preliminary system design to develop standardized work control processes supporting the planning, scheduling, and execution of depot maintenance tasks for commodities and stand up of the program office.</p> <p><b>FY 2015 Plans:</b> Supports MROi program office efforts in preparation for Milestone B and System Implementer award to assist the functional customer and program office with configuring the MROi application into AF re-engineered business processes (re-engineered up front to reduce RICE (Reports, Interfaces, Conversions and Extensions). Includes integration with engineering for configuration management of MRO master configurations as well as assistance request processes and integration with Supply capabilities for material requisitions, receipt of material, and ability to assess inventory availability across the enterprise. Continues modification of the existing legacy systems as well as new interfaces to the MROi tool.</p> <p><b>FY 2016 Plans:</b> Supports formulation, review, approval and execution of acquisition activities targeting a Q1FY16 MS B decision and Contract Award for System Implementer (SI). The SI will begin to integrate the commercial-off-the-shelf (COTS) software onto the hosting infrastructure (hosting environment plans currently in work).</p>		1.727	5.964	27.054
<p><b>Title:</b> Logistics, Installations, Maintenance Support - Enterprise View (LIMS-EV) Modernization</p> <p><b>Description:</b> Expand Logistics, Installations and Mission Support - Enterprise View (LIMS-EV) Secure Internet Protocol Router Network (SIPRNet) capabilities development effort.</p> <p><b>FY 2014 Accomplishments:</b> Completed LIMS-EV SIPRNet Secure Asset View (SAV) define need phase and infrastructure activities. SAV will provide a fleet-wide view of all Air Force aircraft, engines, equipment and vehicles in a secure environment. This capability will provide</p>		33.769	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
operational planners total asset visibility of critical assets in classified and unclassified locations throughout the world. The LIMS-EV SIPRNet activities will continue in FY15 under PE 0708611F, Support Systems Development.  <b>FY 2015 Plans:</b> FY15 efforts transferred to PE 0708611F.  <b>FY 2016 Plans:</b> NA				
<b>Title:</b> Transformation Capability Initiative - Product Lifecycle Management (PLM)  <b>Description:</b> PLM capability will enable AF engineering/logistics communities to define, track, protect and manage product data for AF weapon systems and equipment enabling collaboration connecting field users with center engineers, OEMs with equipment specialists, and internal and external stakeholders and modernize the means used to manage PLM information from cradle to grave.  <b>FY 2014 Accomplishments:</b> NA  <b>FY 2015 Plans:</b> Initiate PLM effort and stand up PLM program office.  <b>FY 2016 Plans:</b> The PLM Integrated Program Office will continue requirements refinement and other analysis prior to the system integration contract, including, performing solution refinement (through Market Research and Business Process Re-Engineering following a robust Systems Engineering Requirements Maturity Model) to deliver a Systems Requirement Document (SRD). This allows the PLM team to update the Analysis of Alternatives as needed, perform program planning and definition, and develop the Business Case, Program Charter, Program Schedule, and Program Office Estimate.		-	1.606	2.226
<b>Title:</b> Aircraft Structural Integrity Management Information System (ASIMIS) Software Upgrade  <b>Description:</b> ASIMIS modification to rehost and modernize the system in a web-based format.  <b>FY 2014 Accomplishments:</b> Program initiation revised to FY15 due to higher AF priorities.  <b>FY 2015 Plans:</b> Initiate data migration and data recompilation activities to move data from mainframe to web-based architecture.  <b>FY 2016 Plans:</b>		-	0.782	0.679



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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Continue data migration and data recompilation activities to move data from mainframe to web-based architecture.			
<p><b>Title:</b> Weapon System Management Information System (WSMIS) Software Upgrade</p> <p><b>Description:</b> Upgrade the WSMIS Requirements/Execution Availability Logistics Module (REALM) to incorporate functional requirements previously on hold. The system requires upgrades to software and hardware to bring the system back to operational status and meet approved functional requirements and mandates (i.e. Section 508 compliance).</p> <p><b>FY 2014 Accomplishments:</b> Completed the WSMIS-REALM upgrade to incorporate functional requirements previously on hold. Operational testing occurred in FY14. WSMIS-REALM software successfully released into production 18 Apr 14.</p> <p><b>FY 2015 Plans:</b> NA</p> <p><b>FY 2016 Plans:</b> NA</p>	0.002	-	-
<p><b>Title:</b> Weapons System Management Information System (WSMIS) Software Upgrade 2</p> <p><b>Description:</b> Implement changes to Sustainability Assessment Module (SAM) such as incorporation of the tools into SAM Operational Plans (OPLANS) that will allow it to access multiple OPLANS and multiple versions of an OPLAN. The current SAM production software is designed to support the assessment of individual units to support Status of Resources and Training System (SORTS) assessments, etc.</p> <p>This is not a new start; all post-ECSS FIAR remediation and modification efforts for AF IT logistics IT systems were documented in the FY13 and FY14 justification materials for PE 0708610F under the Mission Description and Budget Item justification sections.</p> <p><b>FY 2014 Accomplishments:</b> NA</p> <p><b>FY 2015 Plans:</b> NA</p> <p><b>FY 2016 Plans:</b> Initiate WSMIS Software Upgrade Program (SUP) 2 for SAM OPLAN, etc.</p>	-	-	1.700
<b>Accomplishments/Planned Programs Subtotals</b>	58.532	62.894	112.676

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

Line Item	FY 2014	FY 2015	FY 2016	FY 2016	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Cost To	
			Base	OCO	Total					Complete	Total Cost
• OPAF:BA03:Line Item # 834430: <i>Global Combat Support System-Air Force (GCSS-AF)</i>	3.000	2.974	24.719	-	24.719	7.206	7.331	7.461	7.592	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

Air Force Program Executive Office - Business Enterprise Systems (AFPEO-BES) is evaluating systems under the DoDI 5000.02 to approve milestone decisions for each core logistics system remediation/modification project.

These projects will use Firm Fixed Price contracts to the maximum extent possible as the programs establish new contracts or task orders. To improve the efficiency of the contracting process and reduce contract cycle time, the core logistics system program offices plan to use the existing NETCENTS-2 contract vehicle utilizing Best Value acquisition methodology where possible.

**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.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>											<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7						<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>					<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>				

<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Automated Logistics Management Support System (ALMSS) Financial Improvement Audit Readiness (FIAR) - Developer	C/T&M	NETCENTS-2 : WPAFB, OH	-	-		0.850	Oct 2015	0.100	Jan 2016	-		0.100	Continuing	Continuing	-
Combat Ammunition System (CAS) Software Upgrade - Developer	C/CPFF	SI Sys Tech : Gunter Annex, AL	-	7.000	Sep 2014	3.840	Apr 2015	6.270	Dec 2015	-		6.270	Continuing	Continuing	-
Depot Maintenance Accounting and Production System (DMAPS) FIAR - Developer	C/FFP	NETCENTS-2 : WPAFB, AL	-	-		2.176	Jun 2015	0.817	May 2016	-		0.817	Continuing	Continuing	-
Integrated Logistics Systems-Supply (ILS-S) FIAR - Developer	C/CPFF	Array : Gunter Annex, AL	-	1.606	Sep 2014	2.977	May 2015	1.350	Dec 2015	-		1.350	Continuing	Continuing	-
ILS-S Software Modification - Re-Platform - Developer	C/CPFF	NETCENTS-2 : Gunter Annex, AL	-	-		5.154	Mar 2015	3.661	Dec 2015	-		3.661	Continuing	Continuing	-
ILS-S Software Modification - Re-Platform - Legacy Adapter	C/FFP	NETCENTS-2 : Gunter Annex, AL	-	-		1.926	Mar 2015	1.750	Dec 2015	-		1.750	Continuing	Continuing	-
ILS-S Software Modification - Re-Platform - Hardware	C/FFP	NETCENTS-2 : Gunter Annex, AL	-	-		0.715	Apr 2015	0.689	Dec 2015	-		0.689	Continuing	Continuing	-
ILS-S Software Modification - Re-Platform - COTS Software	C/FFP	NETCENTS-2 : Gunter Annex, AL	-	-		0.495	Apr 2015	1.240	Dec 2015	-		1.240	Continuing	Continuing	-
Purchase Request Process System (PRPS) FIAR - Developer	SS/FFP	NGIT : WPAFB, OH	-	-		2.006	Jul 2015	0.300	Jul 2016	-		0.300	Continuing	Continuing	-
Air Force Equipment Management System	C/FFP	MacAuley Brown : WPAFB, OH	-	1.527	May 2014	1.337	Feb 2015	0.500	Dec 2015	-		0.500	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(AFEMS) FIAR - Developer															
AFEMS Software Upgrade - Developer	C/Various	NETCENTS-2 : WPAFB, OH	-	-		-		20.330	Mar 2016	-		20.330	Continuing	Continuing	-
Enhanced Technical Information Management System (ETIMS) Software Upgrade-Developer	C/CPFF	SAIC/NETCENTS-2 : WPAFB, OH	-	5.479	Jan 2015	5.780	Sep 2015	4.642	Dec 2015	-		4.642	Continuing	Continuing	-
Enhanced Maintenance Operations Center (EMOC) Software Upgrade - Developer	C/CPFF	Indrasoft : Gunter AFB, AL	-	0.987	Jul 2014	0.786	Apr 2015	0.400	Dec 2015	-		0.400	Continuing	Continuing	-
Integrated Maintenance Data System - Central Database (IMDS CDB) Software Upgrade - Developer	C/CPFF	NETCENTS-2 : Gunter Annex, AL	-	-		3.639	Sep 2015	7.258	Jan 2016	-		7.258	Continuing	Continuing	-
IMDS CDB Maintenance Scheduling Application Tool (MSAT) Software Upgrade - Developer	C/CPFF	NETCENTS-2 : Gunter Annex, AL	-	-		1.420	Apr 2015	0.400	Jan 2016	-		0.400	Continuing	Continuing	-
IMDS Training Business Area (TBA) Software Upgrade - Developer	C/CPFF	NETCENTS-2 : Gunter Annex, AL	-	-		-		3.906	Feb 2016	-		3.906	Continuing	Continuing	-
Reliability and Maintainability Information System (REMIS) Software Upgrade - Developer	SS/FFP	NGIT : WPAFB, OH	-	2.068	Oct 2014	8.207	Aug 2015	3.413	Jan 2016	-		3.413	Continuing	Continuing	-
Stock Control System (SCS) FIAR - Developer	C/Various	NETCENTS-2 : WPAFB, OH	-	1.799	Nov 2014	6.304	Feb 2015	13.360	Jan 2016	-		13.360	Continuing	Continuing	-
Transformation Capability Initiative - Maintenance, Repair and Overhaul (MRO) Design/ Development	C/Various	NETCENTS-2 : WPAFB, OH	-	-		-		13.618	Dec 2015	-		13.618	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Logistics Installations and Mission Support-Enterprise View (LIMS-EV) - Developer	C/CPFF	Lockheed Martin : WPAFB, OH	-	33.769	Sep 2014	-		-		-		-	Continuing	Continuing	-
Transformation Capability Initiative - Product Lifecycle Management (PLM)	C/Various	NETCENTS-2 : WPAFB, OH	-	-		-		0.826	Aug 2016	-		0.826	Continuing	Continuing	-
Aircraft Structural Integrity Management Information System (ASIMIS) Software Upgrade - Developer	SS/CPFF	GCSS-AF : Tinker AFB, OK	-	-		0.782	May 2015	0.679	Apr 2016	-		0.679	Continuing	Continuing	-
<b>Subtotal</b>			-	54.235		48.394		85.509		-		85.509	-	-	-

<b>Support (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
CAS Software Upgrade Support	C/FFP	NETCENTS-2 : Gunter Annex, AL	-	-		0.678	Feb 2015	1.639	Dec 2015	-		1.639	Continuing	Continuing	-
DMAPS FIAR - Security (PMO) Support	C/FFP	ETASS II : Gunter AFB, AL	-	-		0.039	Jun 2015	0.035	May 2016	-		0.035	Continuing	Continuing	-
ILS-S FIAR - SME Support	C/FFP	CENTECH : Gunter Annex, AL	-	0.381	Nov 2014	0.609	Apr 2015	0.717	Dec 2015	-		0.717	Continuing	Continuing	-
ILS-S Software Modification - Re-Platform - SME Support	C/FFP	NETCENTS -2 : Gunter Annex, AL	-	-		0.535	Mar 2015	0.713	Dec 2015	-		0.713	Continuing	Continuing	-
ETIMS SUP - Support	C/FFP	NETCENTS-2 : WPAFB, OH	-	-		-		0.668	Dec 2015	-		0.668	Continuing	Continuing	-
EMOC Software Upgrade - Support	C/Various	Various : Gunter Annex, AL	-	-		0.083	Mar 2015	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 0708610F / Logistics Information Technology (LOGIT)				675207 / Logistics IT System Modernization							
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
IMDS CDB Software Upgrade - Architecture Support	C/FFP	Copper River : Gunter Annex, AL	-	-		0.131	Aug 2015	0.155	Apr 2016	-		0.155	Continuing	Continuing	-
IMDS CDB MSAT Software Upgrade - Architecture Support	C/FFP	Copper River : Gunter Annex, AL	-	-		0.015	Feb 2015	-		-		-	Continuing	Continuing	-
PRPS FIAR - SME Support	C/FFP	NETCENTS-2 : WPAFB, OH	-	-		0.745	Aug 2015	-		-		-	Continuing	Continuing	-
Air Force Equipment Management System (AFEMS) FIAR- SME Support	C/FFP	Excellus / CACI : WPAFB, OH	-	0.428	May 2014	-		-		-		-	Continuing	Continuing	-
REMIS SUP - SME Support	C/FFP	NETCENTS-2 : WPAFB, OH	-	-		0.200	Mar 2015	0.100	Jan 2016	-		0.100	Continuing	Continuing	-
REMIS SUP - IA Support	C/CPFF	SNIM : WPAFB, OH	-	1.216	May 2014	0.150	May 2015	0.100	May 2016	-		0.100	Continuing	Continuing	-
REMIS SUP - ISP Support	C/CPFF	Copper River : Gunter Annex, AL	-	0.118	Jul 2014	0.120	Sep 2015	0.100	Mar 2016	-		0.100	Continuing	Continuing	-
SCS FIAR - ISP Support	C/FFP	Copper River : WPAFB, OH	-	-		0.079	Jan 2015	0.081	Jan 2016	-		0.081	Continuing	Continuing	-
SCS FIAR - SME Support	C/FFP	NETCENTS-2 : WPAFB, OH	-	-		0.756	Apr 2015	0.786	Apr 2016	-		0.786	Continuing	Continuing	-
MRO Initiative - ISP Support	C/CPFF	Copper River : Gunter Annex, AL	-	0.519	Sep 2014	0.563	Sep 2015	-		-		-	Continuing	Continuing	-
MRO Initiative - Hosting Environment Support	MIPR	DISA : Gunter Annex, AL	-	-		1.833	Jan 2015	10.189	Dec 2015	-		10.189	Continuing	Continuing	-
MRO Initiative - Mitre	SS/FP	Mitre : WPAFB, AL	-	-		0.337	Oct 2014	0.347	Oct 2015	-		0.347	Continuing	Continuing	-
<b>Subtotal</b>			-	2.662		6.873		15.630		-		15.630	-	-	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
DMAPS FIAR - Test Support	C/FFP	NETCENTS-2 : Gunter AFB, AL	-	-		0.155	Jun 2015	0.108	May 2016	-		0.108	Continuing	Continuing	-
ETIMS SUP - Test and Evaluation	C/FFP	GSA : WPAFB, OH	-	-		-		0.178	May 2016	-		0.178	Continuing	Continuing	-
EMOC Software Upgrade - Test Support	MIPR	GSA : Gunter Annex, AL	-	-		0.053	May 2015	-		-		-	Continuing	Continuing	-
IMDS CDB Software Upgrade - Test Support	MIPR	GSA : Gunter Annex, AL	-	-		0.065	Sep 2015	0.095	Jun 2016	-		0.095	Continuing	Continuing	-
IMDS CDB MSAT Software Upgrade - Test Support	MIPR	GSA : Gunter Annex, AL	-	-		0.080	Feb 2015	-		-		-	Continuing	Continuing	-
Air Force Equipment Management System (AFEMS) FIAR - Test Support	MIPR	GSA : WPAFB, OH	-	0.064	Sep 2014	-		-		-		-	Continuing	Continuing	-
REMIS SUP - Test Support	C/Various	Various : WPAFB, OH	-	-		0.150	Sep 2015	0.300	Mar 2016	-		0.300	Continuing	Continuing	-
SCS FIAR - Test Support	MIPR	GSA : WPAFB, OH	-	-		0.068	Apr 2015	0.070	Jul 2016	-		0.070	Continuing	Continuing	-
MRO Initiative - Test Support	MIPR	GSA : WPAFB, OH	-	0.067	Sep 2014	0.399	Feb 2015	0.014	Feb 2016	-		0.014	Continuing	Continuing	-
Weapon System Management Information System (WSMIS) Software Upgrade - Test Support	WR	605 T&E : WPAFB, OH	-	0.002	Feb 2014	-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.133		0.970		0.765		-		0.765	-	-	-

<b>Management Services (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
CAS Software Upgrade PMA	C/Various	BTAS : Gunter Annex, AL	-	-		0.280	Aug 2015	0.533	Dec 2015	-		0.533	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DMAPS FIAR - Travel OTO/PMO - PMA	C/FFP	DTS : Gunter AFB, AL	-	-		0.040	Jun 2015	0.040	May 2016	-		0.040	Continuing	Continuing	-
ILS-S FIAR - Cost Support	C/CPFF	Tecolote : Gunter Annex, AL	-	0.050	Sep 2014	0.040	Aug 2015	0.041	Oct 2015	-		0.041	Continuing	Continuing	-
ILS-S FIAR - Advisory and Assistance Services	C/Various	Oasis/BTAS : Gunter Annex, AL	-	-		0.090	Jan 2015	0.074	Dec 2015	-		0.074	Continuing	Continuing	-
ILS-S FIAR - Travel	Various	DTS : Gunter AFB, AL	-	0.009	Sep 2014	-		-		-		-	Continuing	Continuing	-
ILS-S FIAR - ETASS	C/CPFF	Jacobs Tech : Gunter AFB, AL	-	-		0.024	Apr 2015	0.024	Apr 2016	-		0.024	Continuing	Continuing	-
ILS-S Software Modification - Re-Platform - Cost Support	C/CPFF	Tecolote : Gunter Annex, AL	-	-		0.076	Mar 2015	0.038	Oct 2015	-		0.038	Continuing	Continuing	-
ILS-S Software Modification - Re-Platform - Advisory and Assistance Services	C/Various	BTAS : Gunter Annex, AL	-	-		0.039	Jan 2015	0.093	Dec 2015	-		0.093	Continuing	Continuing	-
ILS-S Software Modification - Re-Platform - ETASS	C/CPFF	Jacobs Tech : Gunter Annex, AL	-	-		0.010	Mar 2015	0.041	Dec 2015	-		0.041	Continuing	Continuing	-
ETIMS SUP - Management Services	C/Various	Oasis/BTAS : WPAFB, OH	-	0.025	May 2014	-		-		-		-	Continuing	Continuing	-
EMOC Software Upgrade - PMA	C/CPFF	Jacobs Tech : Gunter Annex, AL	-	0.088	Aug 2014	0.136	Feb 2015	-		-		-	Continuing	Continuing	-
EMOC Software Upgrade - Cost Support	C/CPFF	Tecolote : Gunter Annex, AL	-	-		0.010	Oct 2015	-		-		-	Continuing	Continuing	-
IMDS CDB Software Upgrade - PMA	C/FFP	BTAS : Gunter Annex, AL	-	-		0.301	May 2015	0.420	Jan 2016	-		0.420	Continuing	Continuing	-
IMDS CDB Software Upgrade - Cost Support	C/CPFF	Tecolote : Gunter Annex, AL	-	-		0.084	Sep 2015	0.172	Jan 2016	-		0.172	Continuing	Continuing	-
IMDS CDB MSAT - PMA	C/FFP	BTAS : Gunter Annex, AL	-	-		0.140	Mar 2015	-		-		-	Continuing	Continuing	-



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PRPS FIAR - A and AS Support	C/Various	BTAS : WPAFB, OH	-	-		0.249	Aug 2015	-		-		-	Continuing	Continuing	-
Air Force Equipment Management (AFEMS) FIAR - PMA	C/Various	Various : WPAFB, OH	-	0.189	Jul 2014	-		-		-		-	Continuing	Continuing	-
REMIS Software Upgrade - Advisory and Assistance Services	C/Various	BTAS : WPAFB, OH	-	-		0.040	Apr 2015	0.040	Jan 2016	-		0.040	Continuing	Continuing	-
SCS FIAR - Advisory and Assistance Services	C/Various	BTAS : WPAFB, OH	-	-		0.401	Apr 2015	0.417	Jan 2016	-		0.417	Continuing	Continuing	-
MRO Initiative - ETASS Support	C/CPFF	Jacobs : WPAFB, OH	-	0.688	May 2014	1.334	Jul 2015	1.366	Jan 2016	-		1.366	Continuing	Continuing	-
MRO Initiative - PASS Support	C/Various	Oasis/BTAS : WPAFB, OH	-	0.339	Jun 2014	0.838	Jul 2015	0.859	Jan 2016	-		0.859	Continuing	Continuing	-
MRO Initiative - Cost Analyst Support	C/CPFF	Tecolote : WPAFB, OH	-	0.103	Jun 2014	0.509	Oct 2014	0.521	Oct 2015	-		0.521	Continuing	Continuing	-
MRO Initiative - PMA	C/Various	Various : WPAFB, OH	-	0.011	Jun 2014	0.151	Nov 2014	0.140	Nov 2015	-		0.140	Continuing	Continuing	-
Transformation Capability Initiative - Product Lifecycle Management (PLM)	C/Various	Various : WPAFB, OH	-	-		1.606	Jul 2015	1.400	Jul 2016	-		1.400	Continuing	Continuing	-
Transformation Capability Initiative - Supply Chain Management (SCM) - Item Master - PMO Support	C/Various	Various : WPAFB, OH	-	-		-		0.796	Jan 2016	-		0.796	Continuing	Continuing	-
Transformation Capability Initiative - SCM GFM Accountability PMA	C/Various	Various : WPAFB, OH	-	-		0.259	Aug 2015	0.717	Jan 2016	-		0.717	Continuing	Continuing	-
Transformation Capability Initiative - SCM Supply PMA	C/Various	Various : WPAFB, OH	-	-		-		1.340	May 2016	-		1.340	Continuing	Continuing	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
ALMSS FIAR CCA							■																					
ALMSS FIAR MS B							■																					
ALMSS FIAR Award							■																					
ALMSS FIAR PDR							■																					
ALMSS FIAR CDR							■																					
ALMSS FIAR DT									■																			
ALMSS FIAR OT									■	■																		
ALMSS FIAR MS C/FOC											■																	
CAS Software Upgrade CCA			■																									
CAS Software Upgrade MS B				■																								
CAS Software Upgrade AWARD				■																								
CAS Software Upgrade PDR						■																						
CAS Software Upgrade CDR							■																					
CAS Software Upgrade DT									■																			
CAS Software Upgrade OT										■	■																	
CAS Software Upgrade FRR												■																
CAS Software Upgrade IOC													■															
CAS Software Upgrade (1) Award														■														
CAS Software Upgrade (1) PDR														■	■													
CAS Software Upgrade (1) CDR															■													
CAS Software Upgrade (1) DT															■	■												
CAS Software Upgrade (1) OT																■	■											
CAS Software Upgrade (1) FRR																	■	■										
CAS Software Upgrade (2) Award																		■										

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / Logistics Information Technology (LOGIT)	<b>Project (Number/Name)</b> 675207 / Logistics IT System Modernization
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
CAS Software Upgrade (2) PDR																												
CAS Software Upgrade (2) CDR																												
CAS Software Upgrade (2) DT																												
CAS Software Upgrade (2) OT																												
CAS Software Upgrade (2) MS C																												
CAS Software Upgrade (2) FRR																												
CAS Software Upgrade (2) FOC																												
DMAPS FIAR CCA																												
DMAPS FIAR MS B																												
DMAPS FIAR Award																												
DMAPS FIAR PDR																												
DMAPS FIAR CDR																												
DMAPS FIAR DT																												
DMAPS FIAR OT																												
DMAPS FIAR IOC																												
DMAPS FIAR (1) Award																												
DMAPS FIAR (1) PDR																												
DMAPS FIAR (1) CDR																												
DMAPS FIAR (1) DT																												
DMAPS FIAR (1) OT																												
DMAPS FIAR (1) MS C/FOC																												
ILS-S FIAR R2 OT and E																												
ILS-S FIAR R2 FOC																												
ILS-S FIAR R3 Award																												
ILS-S FIAR R3 PDR																												

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
ILS-S FIAR R3 CDR				■																								
ILS-S FIAR R3 DT							■																					
ILS-S FIAR R3 IOT and E								■																				
ILS-S FIAR R3 MS C/IOC									■																			
ILS-S FIAR R4 PDR							■																					
ILS-S FIAR R4 CDR							■																					
ILS-S FIAR R4 DT									■																			
ILS-S FIAR R4 IOT and E										■																		
ILS-S FIAR R4 FDD											■																	
ILS-S FIAR R5 PDR									■																			
ILS-S FIAR R5 CDR									■																			
ILS-S FIAR R5 DT										■																		
ILS-S FIAR R5 IOT and E											■																	
ILS-S FIAR R5 FOC												■																
ILS-S Software Modification - Re-Platform CCA			■																									
ILS-S Software Modification - Re-Platform MS B						■																						
ILS-S Software Modification - Re-Platform Award						■																						
ILS-S Software Modification - Re-Platform PDR						■																						
ILS-S Software Modification - Re-Platform CDR							■																					
ILS-S Software Modification - Re-Platform DT							■																					
ILS-S Software Modification - Re-Platform IOT and E															■													
ILS-S Software Modification - Re-Platform MS C															■													

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
ILS-S Software Modification - Re-Platform IOC																												
ILS-S Software Modification - Re-Platform FOC																												
PRPS FIAR CCA																												
PRPS FIAR MS B																												
PRPS FIAR Award																												
PRPS FIAR PDR																												
PRPS FIAR CDR																												
PRPS FIAR DT																												
PRPS FIAR OT																												
PRPS FIAR MS C/IOC																												
PRPS FIAR (1) Award																												
PRPS FIAR (1) PDR																												
PRPS FIAR (1) CDR																												
PRPS FIAR (1) DT																												
PRPS FIAR (1) OT																												
PRPS FIAR (1) FOC																												
AFEMS FIAR Transactional Testing DT																												
AFEMS FIAR Transactional Testing IOT and E																												
AFEMS FIAR Transactional Testing FRR/IOC																												
AFEMS FIAR Serialized Assets CDR																												
AFEMS FIAR Serialized Assets DT																												
AFEMS FIAR Serialized Assets IOT and E																												
AFEMS FIAR Serialized Assets FRR																												
AFEMS FIAR Government Furnished Equipment (GFE) CDR 1																												

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
AFEMS FIAR Government Furnished Equipment (GFE) CDR 2			■																									
AFEMS FIAR Government Furnished Equipment (GFE) DT						■																						
AFEMS FIAR Government Furnished Equipment (GFE) IOT and E								■	■	■																		
AFEMS FIAR Government Furnished Equipment (GFE) MS C/FOC									■																			
AFEMS SUP CCA									■																			
AFEMS SUP MS B										■																		
AFEMS SUP Award										■																		
AFEMS SUP PDR										■	■																	
AFEMS SUP CDR											■																	
AFEMS SUP DT											■	■																
AFEMS SUP OT												■																
AFEMS SUP MS C																■												
AFEMS SUP FOC															■													
ETIMS Software Upgrade OT			■																									
ETIMS Software Upgrade MS C				■																								
ETIMS Software Upgrade FOC				■																								
ETIMS Software Upgrade Enhancements Phase I CCA									■																			
ETIMS Software Upgrade Enhancements Phase I MS B										■																		
ETIMS Software Upgrade Enhancements Phase I Award											■																	

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
ETIMS Software Upgrade Enhancements Phase I PDR											■																	
ETIMS Software Upgrade Enhancements Phase I CDR												■																
ETIMS Software Upgrade Enhancements Phase I DT													■															
ETIMS Software Upgrade Enhancements Phase I OT														■														
ETIMS Software Upgrade Enhancements Phase I MS C																■												
ETIMS Software Upgrade Enhancements Phase I FOC																	■											
EMOC Software Upgrade CCA			■																									
EMOC Software Upgrade MS B				■																								
EMOC Software Upgrade Award					■																							
EMOC Software Upgrade PDR					■																							
EMOC Software Upgrade CDR						■	■																					
EMOC Software Upgrade DT								■																				
EMOC Software Upgrade IOT and E									■																			
EMOC Software Upgrade MS C/FOC										■																		
IMDS TBA CCA									■																			
IMDS TBA MS B										■																		
IMDS TBA Award											■																	
IMDS TBA CDR											■																	
IMDS TBA DT												■	■															
IMDS TBA OT														■														
IMDS TBA MS C/FOC																	■											



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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
IMDS CDB Software Upgrade CCA							■																					
IMDS CDB Software Upgrade MS B								■																				
IMDS CDB Software Upgrade Award								■																				
IMDS CDB Software Upgrade PDR								■	■																			
IMDS CDB Software Upgrade CDR									■	■																		
IMDS CDB Software Upgrade DT									■	■	■																	
IMDS CDB Software Upgrade OT											■	■																
IMDS CDB Software Upgrade FRR												■	■															
IMDS CDB Software Upgrade (1) Award												■	■															
IMDS CDB Software Upgrade (1) PDR												■	■	■														
IMDS CDB Software Upgrade (1) CDR													■	■														
IMDS CDB Software Upgrade (1) DT													■	■	■													
IMDS CDB Software Upgrade (1) OT														■	■													
IMDS CDB Software Upgrade (1) FRR															■	■												
IMDS CDB Software Upgrade (1) MS C/FOC																■	■											
IMDS CDB MSAT Software Upgrade CCA							■																					
IMDS CDB MSAT Software Upgrade MS B								■	■																			
IMDS CDB MSAT Software Upgrade Award								■	■																			
IMDS CDB MSAT Software Upgrade PDR								■	■																			
IMDS CDB MSAT Software Upgrade CDR								■	■	■																		
IMDS CDB MSAT Software Upgrade DT									■	■	■																	
IMDS CDB MSAT Software Upgrade OT											■	■																
IMDS CDB MSAT Software Upgrade MS C/FOC												■	■															
REMIS Software Upgrade MS B		■																										
REMIS Software Upgrade CCA							■																					

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
REMIS Software Upgrade Award				■																								
REMIS Software Upgrade PDR							■																					
REMIS Software Upgrade CDR								■	■																			
REMIS Software Upgrade DT										■																		
REMIS Software Upgrade IOT and E											■																	
REMIS Software Upgrade OT											■	■																
REMIS Software Upgrade MS C												■																
REMIS Software Upgrade FOC													■															
SCS FIAR CCA/MS B/Award					■																							
SCS FIAR PDR						■																						
SCS FIAR CDR							■																					
SCS FIAR DT								■	■																			
SCS FIAR OT										■																		
SCS FIAR MS C/IOC										■																		
SCS FIAR (1) PDR						■																						
SCS FIAR (1) CDR							■																					
SCS FIAR (1) DT								■	■																			
SCS FIAR (1) OT										■	■																	
SCS FIAR (1) MS C/Release											■																	
SCS FIAR (2) PDR						■																						
SCS FIAR (2) CDR							■																					
SCS FIAR (2) DT								■	■																			
SCS FIAR (2) OT										■																		
SCS FIAR (2) MS C/Release											■																	
SCS FIAR (3) PDR						■																						

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
SCS FIAR (3) CDR								■																				
SCS FIAR (3) DT								■	■	■	■																	
SCS FIAR (3) OT												■	■	■	■													
SCS FIAR (3) MS C/Release														■	■													
SCS FIAR (4) PDR											■	■																
SCS FIAR (4) CDR												■	■															
SCS FIAR (4) DT												■	■	■	■													
SCS FIAR (4) OT															■	■												
SCS FIAR (4) MS C/Release															■	■												
SCS FIAR (5) PDR												■	■															
SCS FIAR (5) CDR													■	■														
SCS FIAR (5) DT														■	■	■	■											
SCS FIAR (5) OT																■	■	■	■									
SCS FIAR (5) MS C/Release/FOC																	■	■										
Supply Chain Management - Supply MDD ADM													■	■														
Supply Chain Management - Supply Milestone A																■	■											
Supply Chain Management - Supply Milestone B																	■	■										
Supply Chain Management - Supply Milestone C																			■	■								
Supply Chain Management - Supply IOC																				■	■							
Supply Chain Management - Item Master MDD ADM																					■	■						
Supply Chain Management - Item Master Milestone A																												

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				
	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	
Supply Chain Management - Item Master Milestone B																■													
Supply Chain Management - Item Master Milestone C																													
Supply Chain Management - Item Master IOC																													
Supply Chain Management - GFM Accountability MDD ADM																													
Supply Chain Management - GFM Accountability Milestone A																													
Supply Chain Management - GFM Accountability Milestone B																													
Supply Chain Management - GFM Accountability Milestone C																													
Supply Chain Management - GFM Accountability IOC																													
Supply Chain Management - GFM Accountability Full Deployment																													
MRO MDD	■																												
MRO R1 Milestone A/B																													
MRO R1 Contract Award																													
MRO R1 CCB																													
MRO R1 LFD																													
MRO R1 IOT and E																													
MRO R1 FDD																													
MRO R1 IOC																													
MRO R2 CCB																													
MRO R2 LFD																													

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
MRO R2 IOT and E																												
MRO R2 FDD																												
MRO R2 FD																												
MRO R3 CCB																												
MRO R3 LFD																												
MRO R3 IOT and E																												
MRO R3 FDD																												
MRO R3 FD																												
MRO R4 CCB																												
MRO R4 LFD																												
MRO R4 IOT and E																												
MRO R4 FDD																												
MRO R4 FD																												
LIMS-EV Spiral Development Vehicle View SP-5																												
LIMS-EV Spiral Development RN View SP-2																												
LIMS-EV Spiral Development RN View SP-3																												
LIMS-EV Spiral Development SCM View SP-6																												
LIMS-EV Spiral Development Cost of Logistics																												
LIMS-EV Spiral Development F-35 Integration to LIMS-EV																												
LIMS-EV Spiral Development SIPR Infrastructure																												
LIMS-EV Spiral Development SIPR Operational View																												
PLM MDD ADM																												

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
PLM Milestone A										■																		
PLM Milestone B														■														
PLM Milestone C																				■								
PLM FDD																											■	
ASIMIS Software Modernization CCA							■																					
ASIMIS Software Modernization MS B								■																				
ASIMIS Software Modernization Award									■																			
ASIMIS Software Modernization PDR										■																		
ASIMIS Software Modernization CDR											■																	
ASIMIS Software Modernization DT												■																
ASIMIS Software Modernization OT														■														
ASIMIS Software Modernization MS C																												
ASIMIS Software Modernization FOC																											■	
WSMIS Software Upgrade OT																											■	
WSMIS Software Upgrade MS C/FOC																											■	
WSMIS SUP (2) MDD																											■	
WSMIS SUP (2) MS B																											■	
WSMIS SUP (2) Award																											■	
WSMIS SUP (2) MS C																											■	
WSMIS SUP (2) FOC																											■	

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ALMSS FIAR CCA	3	2015	3	2015
ALMSS FIAR MS B	3	2015	3	2015
ALMSS FIAR Award	3	2015	3	2015
ALMSS FIAR PDR	3	2015	3	2015
ALMSS FIAR CDR	3	2015	3	2015
ALMSS FIAR DT	4	2015	4	2015
ALMSS FIAR OT	4	2015	1	2016
ALMSS FIAR MS C/FOC	1	2016	1	2016
CAS Software Upgrade CCA	3	2014	3	2014
CAS Software Upgrade MS B	4	2014	4	2014
CAS Software Upgrade AWARD	4	2014	4	2014
CAS Software Upgrade PDR	2	2015	2	2015
CAS Software Upgrade CDR	3	2015	3	2015
CAS Software Upgrade DT	4	2015	4	2015
CAS Software Upgrade OT	1	2016	2	2016
CAS Software Upgrade FRR	3	2016	3	2016
CAS Software Upgrade IOC	4	2016	4	2016
CAS Software Upgrade (1) Award	4	2016	4	2016
CAS Software Upgrade (1) PDR	4	2016	1	2017
CAS Software Upgrade (1) CDR	1	2017	1	2017
CAS Software Upgrade (1) DT	1	2017	2	2017
CAS Software Upgrade (1) OT	2	2017	3	2017

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
CAS Software Upgrade (1) FRR	3	2017	2	2018
CAS Software Upgrade (2) Award	2	2018	2	2018
CAS Software Upgrade (2) PDR	2	2018	2	2018
CAS Software Upgrade (2) CDR	2	2018	3	2018
CAS Software Upgrade (2) DT	3	2018	4	2018
CAS Software Upgrade (2) OT	4	2018	4	2018
CAS Software Upgrade (2) MS C	2	2019	2	2019
CAS Software Upgrade (2) FRR	2	2019	3	2019
CAS Software Upgrade (2) FOC	4	2019	4	2019
DMAPS FIAR CCA	3	2015	3	2015
DMAPS FIAR MS B	3	2015	3	2015
DMAPS FIAR Award	3	2015	3	2015
DMAPS FIAR PDR	3	2015	4	2015
DMAPS FIAR CDR	4	2015	1	2016
DMAPS FIAR DT	1	2016	1	2016
DMAPS FIAR OT	1	2016	2	2016
DMAPS FIAR IOC	1	2017	1	2017
DMAPS FIAR (1) Award	3	2016	3	2016
DMAPS FIAR (1) PDR	3	2016	4	2016
DMAPS FIAR (1) CDR	4	2016	1	2017
DMAPS FIAR (1) DT	1	2017	1	2017
DMAPS FIAR (1) OT	1	2017	4	2017
DMAPS FIAR (1) MS C/FOC	1	2018	1	2018
ILS-S FIAR R2 OT and E	3	2014	3	2014
ILS-S FIAR R2 FOC	3	2014	3	2014



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

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Events	Start		End	
	Quarter	Year	Quarter	Year
ILS-S FIAR R3 Award	4	2014	4	2014
ILS-S FIAR R3 PDR	1	2015	1	2015
ILS-S FIAR R3 CDR	1	2015	2	2015
ILS-S FIAR R3 DT	3	2015	3	2015
ILS-S FIAR R3 IOT and E	4	2015	4	2015
ILS-S FIAR R3 MS C/IOC	1	2016	1	2016
ILS-S FIAR R4 PDR	3	2015	3	2015
ILS-S FIAR R4 CDR	3	2015	3	2015
ILS-S FIAR R4 DT	1	2016	1	2016
ILS-S FIAR R4 IOT and E	2	2016	2	2016
ILS-S FIAR R4 FDD	3	2016	3	2016
ILS-S FIAR R5 PDR	1	2016	1	2016
ILS-S FIAR R5 CDR	1	2016	2	2016
ILS-S FIAR R5 DT	2	2016	3	2016
ILS-S FIAR R5 IOT and E	3	2016	3	2016
ILS-S FIAR R5 FOC	4	2016	4	2016
ILS-S Software Modification - Re-Platform CCA	4	2014	4	2014
ILS-S Software Modification - Re-Platform MS B	2	2015	2	2015
ILS-S Software Modification - Re-Platform Award	2	2015	2	2015
ILS-S Software Modification - Re-Platform PDR	3	2015	3	2015
ILS-S Software Modification - Re-Platform CDR	4	2015	4	2015
ILS-S Software Modification - Re-Platform DT	4	2015	4	2015
ILS-S Software Modification - Re-Platform IOT and E	1	2017	1	2017
ILS-S Software Modification - Re-Platform MS C	1	2017	1	2017
ILS-S Software Modification - Re-Platform IOC	3	2017	3	2017

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Events	Start		End	
	Quarter	Year	Quarter	Year
ILS-S Software Modification - Re-Platform FOC	2	2018	2	2018
PRPS FIAR CCA	3	2015	3	2015
PRPS FIAR MS B	3	2015	3	2015
PRPS FIAR Award	4	2015	4	2015
PRPS FIAR PDR	4	2015	1	2016
PRPS FIAR CDR	1	2016	2	2016
PRPS FIAR DT	2	2016	3	2016
PRPS FIAR OT	3	2016	3	2016
PRPS FIAR MS C/IOC	3	2016	3	2016
PRPS FIAR (1) Award	3	2016	3	2016
PRPS FIAR (1) PDR	3	2016	1	2017
PRPS FIAR (1) CDR	1	2017	1	2017
PRPS FIAR (1) DT	1	2017	2	2017
PRPS FIAR (1) OT	2	2017	2	2017
PRPS FIAR (1) FOC	3	2017	3	2017
AFEMS FIAR Transactional Testing DT	4	2014	4	2014
AFEMS FIAR Transactional Testing IOT and E	2	2015	2	2015
AFEMS FIAR Transactional Testing FRR/IOC	3	2015	3	2015
AFEMS FIAR Serialized Assets CDR	3	2014	3	2014
AFEMS FIAR Serialized Assets DT	4	2014	4	2014
AFEMS FIAR Serialized Assets IOT and E	3	2015	3	2015
AFEMS FIAR Serialized Assets FRR	3	2015	3	2015
AFEMS FIAR Government Furnished Equipment (GFE) CDR 1	3	2014	3	2014
AFEMS FIAR Government Furnished Equipment (GFE) CDR 2	4	2014	4	2014
AFEMS FIAR Government Furnished Equipment (GFE) DT	2	2015	2	2015

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

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Events	Start		End	
	Quarter	Year	Quarter	Year
AFEMS FIAR Government Furnished Equipment (GFE) IOT and E	4	2015	1	2016
AFEMS FIAR Government Furnished Equipment (GFE) MS C/FOC	1	2016	1	2016
AFEMS SUP CCA	1	2016	1	2016
AFEMS SUP MS B	2	2016	2	2016
AFEMS SUP Award	2	2016	2	2016
AFEMS SUP PDR	2	2016	3	2016
AFEMS SUP CDR	3	2016	3	2016
AFEMS SUP DT	3	2016	4	2016
AFEMS SUP OT	4	2016	4	2016
AFEMS SUP MS C	1	2017	1	2017
AFEMS SUP FOC	1	2017	1	2017
ETIMS Software Upgrade OT	3	2014	3	2014
ETIMS Software Upgrade MS C	4	2014	4	2014
ETIMS Software Upgrade FOC	4	2014	4	2014
ETIMS Software Upgrade Enhancements Phase I CCA	4	2015	4	2015
ETIMS Software Upgrade Enhancements Phase I MS B	4	2015	4	2015
ETIMS Software Upgrade Enhancements Phase I Award	1	2016	1	2016
ETIMS Software Upgrade Enhancements Phase I PDR	3	2016	3	2016
ETIMS Software Upgrade Enhancements Phase I CDR	4	2016	4	2016
ETIMS Software Upgrade Enhancements Phase I DT	1	2017	1	2017
ETIMS Software Upgrade Enhancements Phase I OT	3	2017	3	2017
ETIMS Software Upgrade Enhancements Phase I MS C	4	2017	4	2017
ETIMS Software Upgrade Enhancements Phase I FOC	4	2017	4	2017
EMOC Software Upgrade CCA	3	2014	3	2014
EMOC Software Upgrade MS B	4	2014	4	2014

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

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Events	Start		End	
	Quarter	Year	Quarter	Year
EMOC Software Upgrade Award	1	2015	1	2015
EMOC Software Upgrade PDR	1	2015	1	2015
EMOC Software Upgrade CDR	2	2015	3	2015
EMOC Software Upgrade DT	1	2016	1	2016
EMOC Software Upgrade IOT and E	2	2016	2	2016
EMOC Software Upgrade MS C/FOC	2	2016	2	2016
IMDS TBA CCA	1	2016	1	2016
IMDS TBA MS B	2	2016	2	2016
IMDS TBA Award	3	2016	3	2016
IMDS TBA CDR	3	2016	3	2016
IMDS TBA DT	3	2016	1	2017
IMDS TBA OT	1	2017	1	2017
IMDS TBA MS C/FOC	3	2017	3	2017
IMDS CDB Software Upgrade CCA	3	2015	3	2015
IMDS CDB Software Upgrade MS B	4	2015	4	2015
IMDS CDB Software Upgrade Award	4	2015	4	2015
IMDS CDB Software Upgrade PDR	4	2015	1	2016
IMDS CDB Software Upgrade CDR	1	2016	1	2016
IMDS CDB Software Upgrade DT	1	2016	3	2016
IMDS CDB Software Upgrade OT	3	2016	3	2016
IMDS CDB Software Upgrade FRR	4	2016	4	2016
IMDS CDB Software Upgrade (1) Award	4	2016	4	2016
IMDS CDB Software Upgrade (1) PDR	4	2016	1	2017
IMDS CDB Software Upgrade (1) CDR	1	2017	1	2017
IMDS CDB Software Upgrade (1) DT	1	2017	3	2017

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Events	Start		End	
	Quarter	Year	Quarter	Year
IMDS CDB Software Upgrade (1) OT	3	2017	3	2017
IMDS CDB Software Upgrade (1) FRR	4	2017	4	2017
IMDS CDB Software Upgrade (1) MS C/FOC	1	2018	1	2018
IMDS CDB MSAT Software Upgrade CCA	2	2015	2	2015
IMDS CDB MSAT Software Upgrade MS B	3	2015	3	2015
IMDS CDB MSAT Software Upgrade Award	3	2015	3	2015
IMDS CDB MSAT Software Upgrade PDR	3	2015	3	2015
IMDS CDB MSAT Software Upgrade CDR	3	2015	4	2015
IMDS CDB MSAT Software Upgrade DT	4	2015	1	2016
IMDS CDB MSAT Software Upgrade OT	2	2016	2	2016
IMDS CDB MSAT Software Upgrade MS C/FOC	3	2016	3	2016
REMIS Software Upgrade MS B	2	2014	2	2014
REMIS Software Upgrade CCA	1	2015	1	2015
REMIS Software Upgrade Award	1	2015	1	2015
REMIS Software Upgrade PDR	3	2015	3	2015
REMIS Software Upgrade CDR	4	2015	1	2016
REMIS Software Upgrade DT	2	2016	2	2016
REMIS Software Upgrade IOT and E	3	2016	3	2016
REMIS Software Upgrade OT	3	2016	4	2016
REMIS Software Upgrade MS C	4	2016	4	2016
REMIS Software Upgrade FOC	1	2017	1	2017
SCS FIAR CCA/MS B/Award	1	2015	1	2015
SCS FIAR PDR	2	2015	2	2015
SCS FIAR CDR	3	2015	3	2015
SCS FIAR DT	4	2015	1	2016

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Events	Start		End	
	Quarter	Year	Quarter	Year
SCS FIAR OT	1	2016	1	2016
SCS FIAR MS C/IOC	1	2016	1	2016
SCS FIAR (1) PDR	2	2015	2	2015
SCS FIAR (1) CDR	3	2015	3	2015
SCS FIAR (1) DT	3	2015	1	2016
SCS FIAR (1) OT	1	2016	2	2016
SCS FIAR (1) MS C/Release	2	2016	2	2016
SCS FIAR (2) PDR	2	2015	2	2015
SCS FIAR (2) CDR	3	2015	3	2015
SCS FIAR (2) DT	4	2015	1	2016
SCS FIAR (2) OT	2	2016	2	2016
SCS FIAR (2) MS C/Release	2	2016	2	2016
SCS FIAR (3) PDR	2	2015	2	2015
SCS FIAR (3) CDR	4	2015	4	2015
SCS FIAR (3) DT	4	2015	2	2016
SCS FIAR (3) OT	4	2016	1	2017
SCS FIAR (3) MS C/Release	1	2017	1	2017
SCS FIAR (4) PDR	2	2016	2	2016
SCS FIAR (4) CDR	3	2016	3	2016
SCS FIAR (4) DT	3	2016	4	2016
SCS FIAR (4) OT	1	2017	1	2017
SCS FIAR (4) MS C/Release	1	2017	1	2017
SCS FIAR (5) PDR	2	2016	2	2016
SCS FIAR (5) CDR	4	2016	4	2016
SCS FIAR (5) DT	4	2016	3	2017

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<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
SCS FIAR (5) OT	4	2017	1	2018
SCS FIAR (5) MS C/Release/FOC	1	2018	1	2018
Supply Chain Management - Supply MDD ADM	2	2016	2	2016
Supply Chain Management - Supply Milestone A	2	2017	2	2017
Supply Chain Management - Supply Milestone B	1	2018	1	2018
Supply Chain Management - Supply Milestone C	1	2019	1	2019
Supply Chain Management - Supply IOC	2	2019	2	2019
Supply Chain Management - Item Master MDD ADM	4	2015	4	2015
Supply Chain Management - Item Master Milestone A	3	2016	3	2016
Supply Chain Management - Item Master Milestone B	1	2018	1	2018
Supply Chain Management - Item Master Milestone C	4	2018	4	2018
Supply Chain Management - Item Master IOC	1	2019	1	2019
Supply Chain Management - GFM Accountability MDD ADM	4	2015	4	2015
Supply Chain Management - GFM Accountability Milestone A	4	2016	4	2016
Supply Chain Management - GFM Accountability Milestone B	2	2017	2	2017
Supply Chain Management - GFM Accountability Milestone C	2	2018	2	2018
Supply Chain Management - GFM Accountability IOC	4	2018	4	2018
Supply Chain Management - GFM Accountability Full Deployment	3	2019	3	2019
MRO MDD	1	2014	1	2014
MRO R1 Milestone A/B	1	2016	1	2016
MRO R1 Contract Award	1	2016	1	2016
MRO R1 CCB	2	2016	2	2016
MRO R1 LFD	2	2018	2	2018
MRO R1 IOT and E	2	2018	3	2018
MRO R1 FDD	3	2018	3	2018

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
MRO R1 IOC	4	2018	4	2018
MRO R2 CCB	1	2018	1	2018
MRO R2 LFD	1	2019	1	2019
MRO R2 IOT and E	1	2019	2	2019
MRO R2 FDD	2	2019	2	2019
MRO R2 FD	3	2019	3	2019
MRO R3 CCB	1	2019	1	2019
MRO R3 LFD	3	2019	3	2019
MRO R3 IOT and E	3	2019	4	2019
MRO R3 FDD	4	2019	4	2019
MRO R3 FD	1	2020	1	2020
MRO R4 CCB	2	2019	2	2019
MRO R4 LFD	4	2019	4	2019
MRO R4 IOT and E	4	2019	1	2020
MRO R4 FDD	1	2020	1	2020
MRO R4 FD	2	2020	2	2020
LIMS-EV Spiral Development Vehicle View SP-5	2	2014	2	2015
LIMS-EV Spiral Development RN View SP-2	1	2014	4	2014
LIMS-EV Spiral Development RN View SP-3	1	2014	1	2015
LIMS-EV Spiral Development SCM View SP-6	2	2014	4	2015
LIMS-EV Spiral Development Cost of Logistics	3	2014	3	2015
LIMS-EV Spiral Development F-35 Integration to LIMS-EV	1	2014	2	2015
LIMS-EV Spiral Development SIPR Infrastructure	2	2014	2	2015
LIMS-EV Spiral Development SIPR Operational View	3	2014	3	2015
PLM MDD ADM	3	2015	3	2015



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708610F / <i>Logistics Information Technology (LOGIT)</i>	<b>Project (Number/Name)</b> 675207 / <i>Logistics IT System Modernization</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
PLM Milestone A	2	2016	2	2016
PLM Milestone B	1	2017	1	2017
PLM Milestone C	1	2018	1	2018
PLM FDD	3	2018	3	2018
ASIMIS Software Modernization CCA	1	2015	1	2015
ASIMIS Software Modernization MS B	2	2015	2	2015
ASIMIS Software Modernization Award	3	2015	3	2015
ASIMIS Software Modernization PDR	3	2015	1	2016
ASIMIS Software Modernization CDR	1	2016	2	2016
ASIMIS Software Modernization DT	2	2016	1	2017
ASIMIS Software Modernization OT	1	2017	4	2017
ASIMIS Software Modernization MS C	2	2018	2	2018
ASIMIS Software Modernization FOC	4	2018	4	2018
WSMIS Software Upgrade OT	2	2014	2	2014
WSMIS Software Upgrade MS C/FOC	2	2014	2	2014
WSMIS SUP (2) MDD	2	2016	2	2016
WSMIS SUP (2) MS B	4	2016	4	2016
WSMIS SUP (2) Award	1	2017	1	2017
WSMIS SUP (2) MS C	2	2018	2	2018
WSMIS SUP (2) FOC	4	2018	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	10.573	15.712	12.657	-	12.657	12.456	12.213	11.532	11.747	Continuing	Continuing
673318: <i>Product Data Systems Modernization (PDSM)</i>	-	0.505	0.512	-	-	-	-	-	-	0.010	-	1.027
675042: <i>Log Application Logisitcs Integration (LALI)</i>	-	10.068	15.200	12.657	-	12.657	12.456	12.213	11.532	11.737	Continuing	Continuing

**Note**

In FY 2016, PE 0708611 Support Systems Development, Project 673318, Product Data Systems Modernization efforts transferred to PE 0708610F, Logistics Information Technology (Log IT), Project 675207 to align with the Enhanced Technical Information Management System (ETIMS) modification efforts funded within the Log IT PE.

In FY 2016, PE 0708611 Support Systems Development, Project Number 675042, Logistics Application Logistics Integration (LALI), the F-35 User Identification Data Exchange System (UIDES) effort was transferred to PE 0604800F, F-35 Lightning II Joint Strike Fighter, in order to align the activity under the F-35 RDT&E Program Element.

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

This program element contains two active projects [project 673318, Product Data System Modernization (PDSM), and project 675042, Logistics Application Logistics Integration (LALI)].

Project 673318: PDSM funds modifications to the Enhanced Technical Information System (ETIMS) Enterprise, which supports Air Force Technical Order management, storage and distribution critical to depot maintenance activities. ETIMS activities include studies and analysis to support both current and future program planning and program execution to include Nuclear Weapons Related Material (NWRM) technical data requirements.

Project 675042: LALI includes funding for Logistics, Installations and Mission Support - Enterprise View (LIMS-EV) and F-35 User IT Data Exchange Service (UIDES).

LIMS-EV provides integrated, singular information from multiple source systems through the Global Combat Support System - Air Force (GCSS-AF) Integration Framework (IF) to Air Force decision makers. Funding for LIMS-EV supports Business Intelligence (BI) development efforts that enhance the AF logistics community's ability to perform configurable alerting, predictive/what-if analysis and further integrate support equipment, vehicle, munitions, supply, commodities and components (e.g. engines, landing gears, fuel) to increase weapons system and total asset visibility (TAV).

Funding for F-35 UIDES will continue Air Force development of a F-35 Autonomic Logistics Information System (ALIS) - User IT Data Exchange Service that supports current and future Information Exchange Requirement (IER) data transfer capability from the F-35 ALIS into data reports and configurable tables to receive, store and integrate F-35 operations, maintenance, training and financial data within existing Air Force enterprise views to support the growing fleet of AF F-35 aircraft. Funding

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>
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supports development of an enhanced data sharing capability (ability to consume increased volume and variety of ALIS IER data) to support depot data configuration and integration requirements. Activities also include studies and analysis to support both current program/project planning and execution and future program/project 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.

The FY2016 funding request was reduced by \$2.224 million to account for the availability of prior execution balances.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	10.912	16.209	15.327	-	15.327
Current President's Budget	10.573	15.712	12.657	-	12.657
Total Adjustments	-0.339	-0.497	-2.670	-	-2.670
• Congressional General Reductions	-	-0.497			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.339	-			
• Other Adjustments	-	-	-2.670	-	-2.670

**Change Summary Explanation**

The FY2016 funding request was reduced by \$2.224 million to account for the availability of prior execution balances and \$0.446 million for higher Air Force priorities.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 673318 / <i>Product Data Systems Modernization (PDSM)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
673318: <i>Product Data Systems Modernization (PDSM)</i>	-	0.505	0.512	-	-	-	-	-	-	0.010	-	1.027
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY 2016, PE 0708611, Support Systems Development, Project 673318, Product Data Systems Modernization efforts transferred to PE 0708610F, Logistics Information Technology (Log IT), Project 675207 to align with the Enhanced Technical Information Management System (ETIMS) modification efforts funded within the Log IT PE.

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

Project 673318, PDSM supports funding for Air Force Technical Order functionality through the continued enhancement of the Enhanced Technical Information System (ETIMS) Enterprise. Development of the ETIMS project across the FYDP will be continued as part of the remediation/modernization/transformation approach for AF Logistics IT. For specific details on this project see PE 0708610F.

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> Enhanced Technical Information Management System (ETIMS) Software Upgrade	0.505	0.512	-
<b>Description:</b> Modify ETIMS software to incorporate Joint Computer-Aided Acquisition and Logistics Support (JCALS) functionality and integrate additional ETIMS enhancements. Effort previously titled: ETIMS Software Upgrade. ETIMS also has funding in FY 14 IN PE 0708610F.			
<b>FY 2014 Accomplishments:</b> Complete modification of ETIMS software to incorporate JCALS functionality.			
<b>FY 2015 Plans:</b> Initiate enhancement activities to continue ETIMS Software Upgrade.			
<b>FY 2016 Plans:</b> In FY 2016, Project 673318, Product Data Systems Modernization efforts transferred to PE 0708610F, Logistics Information Technology (Log IT), Project 675207 to align with the Enhanced Technical Information Management System (ETIMS) modification efforts funded within the Log IT PE.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.505	0.512	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 673318 / <i>Product Data Systems Modernization (PDSM)</i>

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

N/A

**Remarks**

**D. Acquisition Strategy**

The acquisition strategy for ETIMS is to award on a firm-fixed price basis utilizing a competitive, best-value criteria as appropriate.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 673318 / <i>Product Data Systems Modernization (PDSM)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Manage and Support Technical Data Services	C/FP	NGIT : Wright-Patterson AFB, OH	-	0.258	Nov 2013	0.512	Sep 2015	-		-		-	-	0.770	-
Technical Data Integrator/ Developer Support	C/CPFF	SAIC : Wright-Patterson AFB, OH	-	0.247	Nov 2013	-		-		-		-	-	0.247	-
<b>Subtotal</b>			-	0.505		0.512		-		-		-	-	1.017	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	0.505	0.512	-	-	-	-	1.017	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 673318 / <i>Product Data Systems Modernization (PDSM)</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
ETIMS Software Upgrade OT			■																									
ETIMS Software Upgrade MS C				■																								
ETIMS Software Upgrade FOC				■																								
ETIMS Software Upgrade Enhancements Phase I CCA												■																
ETIMS Software Upgrade Enhancements Phase I MS B												■																



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 673318 / <i>Product Data Systems Modernization (PDSM)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ETIMS Software Upgrade OT	3	2014	3	2014
ETIMS Software Upgrade MS C	4	2014	4	2014
ETIMS Software Upgrade FOC	4	2014	4	2014
ETIMS Software Upgrade Enhancements Phase I CCA	4	2015	4	2015
ETIMS Software Upgrade Enhancements Phase I MS B	4	2015	4	2015

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>				<b>Project (Number/Name)</b> 675042 / <i>Log Application Logistics Integration (LALI)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675042: <i>Log Application Logistics Integration (LALI)</i>	-	10.068	15.200	12.657	-	12.657	12.456	12.213	11.532	11.737	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

This program element support two active projects [project 673318, Product Data System Modernization (PDSM), and project 675042, Logistics Application Logistics Integration (LALI)].

Logistics, Installations and Mission Support - Enterprise View (LIMS-EV) funding supports Business Intelligence (BI) development of a dashboard capability used by senior leaders to access integrated, one-version-of-truth information from multiple source systems. LIMS-EV funding will extend current BI capabilities to provide configurable alerting, predictive analysis, what-if analysis and further integration of support equipment, vehicle, munitions, supply, commodities and components (engines, landing gears, fuel, etc) to increase weapons systems availability and Total Asset Visibility (TAV).

Funding for F-35 UIDES will continue Air Force development of a F-35 Autonomic Logistics Information System (ALIS) - User IT Data Exchange Service that supports current and future Information Exchange Requirement (IER) data transfer capability from the F-35 ALIS into data reports and configurable tables to receive, store and integrate F-35 operations, maintenance, and training data within existing Air Force enterprise views to support the growing fleet of Air Force F-35 aircraft. This funding also supports development of an enhanced data sharing capability (ability to consume increased volume and variety of ALIS IER data) to support depot data configuration and integration requirements, and studies and analysis to support both interoperability and capability maturity plans for current and future program/project planning and execution.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> LIMS-EV	8.818	10.142	12.657
<b>Description:</b> Logistics, Installations and Mission Support - Enterprise View (LIMS-EV) funding supports Business Intelligence (BI) development of a dashboard capability used by senior leaders to access integrated, one-version-of-truth information from multiple source systems. LIMS-EV funding will extend current BI capabilities to provide configurable alerting, predictive analysis, what-if analysis and further integration of support equipment, vehicle, munitions, supply, commodities and components (engines, landing gears, fuel, etc) to increase weapons systems availability and Total Asset Visibility (TAV).			
<b>FY 2014 Accomplishments:</b> Completed development efforts in support of LIMS-EV Vehicle View Rel-5 (delivered budget planning, fleet performance/health framework migration for the existing LIMS-EV Vehicle View Capability), Repair Network Rel-2 and 3 (provides the ability to Add/ Edit/Delete Networks, Nodes, and Equipment Assets), Supply Chain			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 675042 / <i>Log Application Logistics Integration (LALI)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>Management Rel-6's define need phase (fused data from both wholesale and retail legacy systems), Cost of Logistics' critical design phase (formerly known as Predictive Analysis capability), AF Supply Chain Database Rel-1 and SIPR Operational View's preliminary design review (to provide a SIPR-hosted LIMS-EV capability).</p> <p><b>FY 2015 Plans:</b> Continue to mature the logistics enterprise with LIMS-EV activities to develop BI capabilities such as: Logistics Balanced Scorecard in support of AF A4/7 Logistics strategy to monitor and manage performance measurement of Logistics, Installations and Mission Support; expand LIMS-EV capabilities through BI Maturation to tie capabilities to operational requirements; include Cost of Logistics (formerly known as Predictive Analysis) capabilities within LIMS-EV to allow analysts at all levels to predict when failures of end-items will occur. Continue LIMS-EV SIPR activities to further develop secure capabilities to provide Air Force leaders a secure view to report logistics cost drivers, link to readiness, and the impact of cost decisions on logistics to better prepare AF Logistics Leaders to defend logistics requirements in Planning, Programming, Budget and Execution (PPBE) process.</p> <p><b>FY 2016 Plans:</b> Expand LIMS-EV capability to include ability to access LIMS-EV dashboard from DoD/AF mobile devices. Continue efforts necessary to declare Full Operational Capability (FOC) of LIMS-EV 2.0 by end of FY16. Adjust project priorities and schedule as necessary for projects approved by the Enterprise Logistics Governance (ELG) board.</p>				
<p><b>Title:</b> F-35 ALIS-UIDES Integration</p> <p><b>Description:</b> Funding for F-35 UIDES will continue Air Force development of a F-35 Autonomic Logistics Information System (ALIS) - User IT Data Exchange Service that supports current and future Information Exchange Requirement (IER) data transfer capability from the F-35 ALIS into data reports and configurable tables to receive, store and integrate F-35 operations, maintenance, training and financial data within existing Air Force enterprise views to support the growing fleet of Air Force F-35 aircraft. Funding will also support development of an enhanced data sharing capability (ability to consume increased volume and variety of ALIS IER data) to support depot data configuration and integration requirements.</p> <p><b>FY 2014 Accomplishments:</b> Completed the development of the F-35 ALIS UIDES Release 1.1; this capability provides visibility into each Squadron Operating Unit (SOU) as well as providing enterprise visibility, reports and data to Air Force and DoD agencies.</p> <p><b>FY 2015 Plans:</b> Continue Air Force development of a F-35 Autonomic Logistics Information System (ALIS) - User IT Data Exchange Service that supports current and future Information Exchange Requirement (IER) data transfer capability from</p>		1.250	5.058	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 675042 / <i>Log Application Logistics Integration (LALI)</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>the F-35 ALIS into data reports and configurable tables to receive, store and integrate F-35 operations, maintenance, training and financial data within existing Air Force enterprise views to support the growing fleet of Air Force F-35 aircraft. Funding will also support development of an enhanced data sharing capability (ability to consume increased volume and variety of ALIS IER data) to support depot data configuration and integration requirements.</p> <p><b>FY 2016 Plans:</b> UIDES effort realigned in FY16-out under PE 0604800F, F-35 Lightning II Joint Strike Fighter.</p>				
<b>Accomplishments/Planned Programs Subtotals</b>		10.068	15.200	12.657
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b>				
LIMS-EV and associated UIDES deliveries will utilize services provided by Global Combat Support System Air Force (GCSS-AF) Integration Framework. GCSS-AF Data Services Program Management Office (PMO), as LIMS-EV Program Manager, is responsible to competitively acquire additional LIMS-EV capabilities using a variety of fixed price, labor hour, time and material, and cost plus contracts.				
LIMS-EV and UIDES capabilities utilize services provided by Global Combat Support System Air Force (GCSS-AF) Integration Framework. GCSS-AF Data Services PMO, as LIMS-EV Program Manager, manages LIMS-EV development projects following standard software development release process.				
LIMS-EV and associated UIDES development projects will be awarded as task orders using GCSS AF 2 contract with GCSS AF Data Services Program Management Office, Wright-Patterson Air Force Base, Ohio.				
<b>E. Performance Metrics</b>				
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.				

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 675042 / <i>Log Application Logisitics Integration (LALI)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LALI LIMS-EV Systems Engineering Contractor Support (Product Development)	C/CPFF	Lockheed Martin : WPAFB, OH	-	5.393	Jan 2014	6.775	Feb 2015	8.657		-		8.657	Continuing	Continuing	-
LALI LIMS-EV Project Development Support	C/CPFF	DSD/Deloitte : Arlington, VA	-	1.925	Apr 2014	2.000	Mar 2015	2.000		-		2.000	Continuing	Continuing	-
ALIS	C/FFP	Lockheed Martin : WPAFB, OH	-	1.250	Jan 2014	4.925	Jan 2015	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	8.568		13.700		10.657		-		10.657	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
LALI Systems Engineering Base Support & Test Development Range	C/CPFF	DSD/Deloitte : Arlington, VA	-	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration (PMA) LALI	C/CPFF	DSD/Deloitte : Arlington, VA	-	1.500	Jan 2014	1.500	Mar 2015	2.000	Mar 2015	-		2.000	Continuing	Continuing	-



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 675042 / <i>Log Application Logistics Integration (LALI)</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Air Force Supply Chain Data Base (AFSCDB)	██████████																											
LIMS-EV Vehicle View Release 5	██████████																											
Supply Chain Management (SCM) View Release 6	██████████																											
Cost of Logistics	██████████																											
Balanced Scorecard					██████████																							
LIMS-EV Repair Network Release 4					██████████																							
Commercial Mobile Device									██████████																			
LIMS-EV SIPRNet Operational Views	██████████																											
LIMS-EV 2.1 MDD													██████															
LIMS-EV 2.1 MS A													██████															
LIMS-EV 2.1 MS B													██████															
LIMS-EV 2.1 MS C																	██████											
LIMS-EV 2.1 FOC																					██████							
F-35 UIDES Release 1	██████████																											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0708611F / <i>Support Systems Development</i>	<b>Project (Number/Name)</b> 675042 / <i>Log Application Logistics Integration (LALI)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Air Force Supply Chain Data Base (AFSCDB)	1	2014	1	2015
LIMS-EV Vehicle View Release 5	2	2014	2	2015
Supply Chain Management (SCM) View Release 6	2	2014	4	2015
Cost of Logistics	3	2014	3	2015
Balanced Scorecard	2	2015	4	2015
LIMS-EV Repair Network Release 4	1	2015	4	2015
Commercial Mobile Device	1	2016	4	2016
LIMS-EV SIPRNet Operational Views	3	2014	3	2015
LIMS-EV 2.1 MDD	3	2017	3	2017
LIMS-EV 2.1 MS A	4	2017	4	2017
LIMS-EV 2.1 MS B	2	2018	2	2018
LIMS-EV 2.1 MS C	3	2019	3	2019
LIMS-EV 2.1 FOC	4	2019	4	2019
F-35 UIDES Release 1	1	2014	4	2015



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0804743F / <i>Other Flight Training</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	1.347	0.987	1.836	-	1.836	2.040	2.078	2.046	2.082	Continuing	Continuing
675303: <i>ADSS Development</i>	-	0.347	-	-	-	-	-	-	-	-	-	0.347
675304: <i>Aviation Resource Management System (ARMS)</i>	-	1.000	0.987	1.836	-	1.836	2.040	2.078	2.046	2.082	Continuing	Continuing

**Note**

In FY2014, Project Number 675303, Air Education and Training Command (AETC) Decision Support System (ADSS) Development, was completed.

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

Program supports the Air Education and Training command (AETC) Decision Support System (ADSS) which is an automated information system that provides AETC leadership and staff with key management information about training production status, including monitoring and assessment of training. The data and reports from ADSS provide the vital feedback mechanism essential to an effective programming and management process. The hardware and software components of ADSS interact and communicate via the DOD standard communications infrastructure. The system uses DOD information transfer assets that provide seamless communications within and across systems and media. Full Operational Capability (FOC) occurred in FY2014.

The Aviation Resource Management System (ARMS) is the authoritative data source for recording and managing aircrew training information, aircrew/parachutist management, flying hour tracking, flight pay management, and flying gate tracking for 70,000 Air Force members. The Air Force uses this information to enhance safety-of-flight operations and to determine eligibility to perform aviation related events. New development work is required to provide additional flying operations information, which will aid in better portraying Air Force readiness, and to feed this data into Defense Readiness Reporting System Strategic (DRRS-S). These enhanced capabilities, to be developed incrementally, include the following: electronic flight record, support enhanced flying hour management/execution, simulator and remotely piloted aircraft (RPA) management/utilization, full career logbook, training look-back, aircrew member man-month allocation, enhanced resource and jump module management, and interface with DRRS-S. ARMS data will also be used to support Headquarters Air Force/Major Command (HAF/MAJCOM) level readiness decision reports/analytics. New development work in support of ARMS needs to be accomplished with RDT&E versus O&M funds.

This program is 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.

The FY2016 funding request was reduced by \$0.129 million to account for the availability of prior execution balances.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0804743F / <i>Other Flight Training</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	1.347	0.987	1.978	-	1.978
Current President's Budget	1.347	0.987	1.836	-	1.836
Total Adjustments	-	-	-0.142	-	-0.142
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.142	-	-0.142

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**Exhibit R-2A, RDT&E Project Justification:** PB 2016 Air Force **Date:** February 2015

Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0804743F / Other Flight Training				Project (Number/Name) 675303 / ADSS Development			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
675303: ADSS Development	-	0.347	-	-	-	-	-	-	-	-	-	0.347
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In FY2014, Project 675303, Air Education and Training Command (AETC) Decision Support System (ADSS) Development, was completed.

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

Program supports the Air Education and Training Command (AETC) Decision Support System (ADSS) which is an automated information system that provides AETC leadership and staff with key management information about training production status, including monitoring and assessment of training. The data and reports from ADSS provide the vital feedback mechanism essential to an effective programming and management process. The hardware and software components of ADSS interact and communicate via the DOD standard communications infrastructure. The system uses DOD information transfer assets that provide seamless communications within and across systems and media. Tasks to be performed are the development of the ADSS Enterprise Information Integration (ADSS-EII) and Training Pipeline Continuum (TPC) modernization modules. Full Operational Capability (FOC) occurred FY2014.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<b>Title:</b> ADSS	0.347	-	-	-	-
<b>Description:</b> Development of AETC Decision Support System (ADSS)					
<b>FY 2014 Accomplishments:</b> Complete development of AETC Decision Support System (ADSS)					
<b>FY 2015 Plans:</b> N/A					
N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	0.347	-	-	-	-

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

N/A

**Remarks**

**D. Acquisition Strategy**

Contract was recompeted and awarded in the first quarter of FY2012 as a Section 8(a) small business set aside.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0804743F / <i>Other Flight Training</i>	<b>Project (Number/Name)</b> 675303 / <i>ADSS Development</i>

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0804743F / Other Flight Training	<b>Project (Number/Name)</b> 675303 / ADSS Development
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development Efforts for AETC ADSS	C/FFP	Decypher Technologies : San Antonio, TX	-	0.347	Dec 2013	-		-		-		-	-	0.347	1.042
<b>Subtotal</b>			-	0.347		-		-		-		-	-	0.347	1.042

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	0.347	-	-	-	-	-	0.347	1.042

**Remarks**



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0804743F / <i>Other Flight Training</i>	<b>Project (Number/Name)</b> 675303 / <i>ADSS Development</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Development of AETC Decision Support System	1	2014	4	2015
FY14 Option Exercise	1	2014	1	2014
FY15 Option Exercise	1	2015	1	2015

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0804743F / Other Flight Training				<b>Project (Number/Name)</b> 675304 / Aviation Resource Management System (ARMS)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675304: Aviation Resource Management System (ARMS)	-	1.000	0.987	1.836	-	1.836	2.040	2.078	2.046	2.082	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Aviation Resource Management System (ARMS) is the authoritative data source for recording and managing aircrew training information, aircrew/parachutist management, flying hour tracking, flight pay management, and flying gate tracking for 70,000 Air Force members. The Air Force uses this information to enhance safety-of-flight operations and to determine eligibility to perform aviation related events. ARMS interfaces with the Military Personnel Data System (MilPDS) and multiple operations and flight scheduling systems such as Patriot Excalibur (PEX), Graduate Training Integration Management System (GTIMS), Center Operations On-Line (COOL), Global Decision Support System (GDSS), and Automated Aircrew Management System (AAMS) and is used to determine whom to select for flying operations, assignment actions, and promotion of aircrew members.

New development work is required to provide additional flying operations information, which will aid in better portraying Air Force readiness, and to feed this data into Defense Readiness Reporting System Strategic (DRRS-S). These enhanced capabilities, to be developed incrementally, include the following: electronic flight record, support enhanced flying hour management/execution, simulator and RPA management/utilization, full career logbook, training look-back, aircrew member man-month allocation, enhanced resource and jump module management, and interface with DRRS-S. Additional development work on the existing ARMS, such as database flattening and Business Process Reengineering (BPR) actions, is required prior to incorporating these enhanced capabilities.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> ARMS	1.000	0.987	1.836	-	1.836
<b>Description:</b> Hardware/Software development efforts in support of Aviation Resource Management System (ARMS).					
<b>FY 2014 Accomplishments:</b>					
- Initiated hardware/Software development efforts in support of Aviation Resource Management System (ARMS).					
- Initiated full requirements definition to include user cases, system architecture documents, and current system requirements reverse engineering.					
<b>FY 2015 Plans:</b>					
- Continue hardware/Software development efforts in support of Aviation Resource Management System (ARMS).					



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0804743F / <i>Other Flight Training</i>	<b>Project (Number/Name)</b> 675304 / <i>Aviation Resource Management System (ARMS)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
- Completed milestone documentation for MDD scheduled late FY15.					
<b><i>FY 2016 Base Plans:</i></b> - Continue hardware/Software development efforts in support of Aviation Resource Management System (ARMS). - Release RFP for ARMS 7.0 Development contract Increment 1 (Flying Hours and Crew Training).					
<b><i>FY 2016 OCO Plans:</i></b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	1.000	0.987	1.836	-	1.836

<b>C. Other Program Funding Summary (\$ in Millions)</b>										
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>
• O&M: BA03: PE 0804743F: <i>Other Flight Training</i>	1.281	1.195	1.195	-	1.195	1.260	1.376	1.401	-	Continuing

**Remarks**

**D. Acquisition Strategy**

ARMS will incrementally develop enhancements to the existing system. The acquisition will be a Firm Fixed Price (FFP) contract line item on a competitively awarded contract utilizing Full and Open Competition (FAR Part 15).

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0804743F / Other Flight Training	<b>Project (Number/Name)</b> 675304 / Aviation Resource Management System (ARMS)
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development Efforts for ARMS	C/FFP	AFLCMC/HIB : Maxwell AFB-Gunter Annex, AL	-	1.000	Jan 2014	0.987	Jan 2015	1.836	Jan 2016	-		1.836	Continuing	Continuing	-
<b>Subtotal</b>			-	1.000		0.987		1.836		-		1.836	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	1.000	0.987	1.836	-	1.836	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0804743F / <i>Other Flight Training</i>	<b>Project (Number/Name)</b> 675304 / <i>Aviation Resource Management System (ARMS)</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
New Functional Requirements	██████████																											
Acquisition/Clinger Cohen Act Docs	██████████																											
System Software Requirements	██████████																											
Architectural Documents (Certification and Accreditation)					██████████																							
Advisory and Assistance Services Contract					██████████																							
MDD									████																			
RFP									████																			
MS B									██████																			
Development Contract Award									██████																			
Development Contract Option 1									██████████████																			
Development Contract Option 2													██████████████															
New Systems Design/Development									██																			
Development Contract Option 3													██████████████															
Development Contract Option 4																	██████████████											

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0804743F / <i>Other Flight Training</i>	<b>Project (Number/Name)</b> 675304 / <i>Aviation Resource Management System (ARMS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
New Functional Requirements	2	2014	3	2015
Acquisition/Clinger Cohen Act Docs	2	2014	3	2015
System Software Requirements	2	2014	3	2015
Architectural Documents (Certification and Accreditation)	1	2015	1	2016
Advisory and Assistance Services Contract	1	2015	1	2016
MDD	4	2015	4	2015
RFP	1	2016	1	2016
MS B	1	2016	2	2016
Development Contract Award	1	2016	2	2016
Development Contract Option 1	1	2016	2	2017
Development Contract Option 2	2	2017	2	2018
New Systems Design/Development	2	2016	4	2020
Development Contract Option 3	2	2018	2	2019
Development Contract Option 4	2	2019	2	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808716F / <i>Other Personnel Activities</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	0.065	0.126	0.121	-	0.121	0.106	0.108	0.110	0.112	Continuing	Continuing
675141: <i>DEOMI Faculty Research</i>	-	0.065	0.126	0.121	-	0.121	0.106	0.108	0.110	0.112	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Defense Equal Opportunity Management Institute (DEOMI) provides grants to the civilian academic community to conduct research on military and civilian equal opportunity issues using standard social science methodology and engineering analysis. The research methodology and analysis includes developing a literature review proposing hypotheses and methods of research. The grantee will then gather appropriate data, draw conclusions and present discussions, recommendations and reports based on their funding.

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>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	0.065	0.126	0.122	-	0.122
Current President's Budget	0.065	0.126	0.121	-	0.121
Total Adjustments	-	-	-0.001	-	-0.001
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	-0.001	-	-0.001

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

	FY 2014	FY 2015	FY 2016
<b>Title:</b> Equal Opportunity Issues	0.065	0.126	0.121
<b>Description:</b> Conduct research on military and civilian equal opportunity issues.			
<b>FY 2014 Accomplishments:</b>			

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0808716F / <i>Other Personnel Activities</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Continue conducting research on military and civilian equal opportunity issues.			
<b><i>FY 2015 Plans:</i></b> Continue conducting research on military and civilian equal opportunity issues.			
<b><i>FY 2016 Plans:</i></b> Continue conducting research on military and civilian equal opportunity issues.			
<b>Accomplishments/Planned Programs Subtotals</b>	0.065	0.126	0.121

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

**Remarks**

**E. Acquisition Strategy**  
Grants will be awarded competitively.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0808716F / <i>Other Personnel Activities</i>	<b>Project (Number/Name)</b> 675141 / <i>DEOMI Faculty Research</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DEOMI	TBD	Various : Various,	-	0.065	Mar 2014	0.126	Mar 2015	0.121	Mar 2016	-		0.121	Continuing	Continuing	TBD
<b>Subtotal</b>			-	0.065		0.126		0.121		-		0.121	-	-	-

**Remarks**  
Contract method will be a grant

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	0.065	0.126	0.121	-	0.121	-	-	-

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0808716F / <i>Other Personnel Activities</i>	<b>Project (Number/Name)</b> 675141 / <i>DEOMI Faculty Research</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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

Receive Grants																												
Award Grants																												



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**Exhibit R-4A, RDT&E Schedule Details:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0808716F / <i>Other Personnel Activities</i>	<b>Project (Number/Name)</b> 675141 / <i>DEOMI Faculty Research</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Receive Grants	1	2014	2	2020
Award Grants	3	2014	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901202F / <i>Joint Personnel Recovery Agency</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	1.046	2.603	5.911	-	5.911	3.948	2.019	2.056	2.092	Continuing	Continuing
675196: <i>Joint Technology Exploitation</i>	-	1.046	2.603	5.911	-	5.911	3.948	2.019	2.056	2.092	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Funding provides capability to conduct Personnel Recovery development efforts to upgrade systems to provide Combatant Commander and Service Personnel Recovery capabilities identified in the Personnel Recovery Initial Capabilities Document approved by Joint Requirements Oversight Council Memorandum 120-12 on 8 Aug 2012. Includes funding for research and development, support equipment, contract services and all associated costs specifically identified to support the Joint Personnel Recovery Agency (JPRA) headquarters at Ft. Belvoir, VA and other JPRA operating locations.

In FY16, the Common Distress Reporting System (CDRS) will begin development. CDRS will integrate all personnel locator device reporting onto the existing five Combat Survivor Evader Locator base stations to provide one common operating picture for timely and efficient recovery operations of isolated personnel.

This program is in Budget Activity 7, Operational System Development because this budget activity includes 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 year.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	1.083	2.603	0.376	-	0.376
Current President's Budget	1.046	2.603	5.911	-	5.911
Total Adjustments	-0.037	-	5.535	-	5.535
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.037	-			
• Other Adjustments	-	-	5.535	-	5.535

**Change Summary Explanation**

FY16 Funding increase due to reestablishment of the Personnel Recovery RDT&E baseline (+ 1.535M) and the addition of a new effort(+4.0M) for the Common Distress Reporting System (CDRS).

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901202F <i>I Joint Personnel Recovery Agency</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<p><b>Title:</b> Planning and Reporting Systems</p> <p><b>Description:</b> Upgrade Collaborative Personnel Recovery planning systems and develop/implement the Common Distress Reporting System</p> <p><b>FY 2014 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Completed prototype algorithm for collaborative PR planner by modeling evader movement and behavior superimposed on digital terrain.</li> <li>- Conducted proof-of-concept on geospatial analysis on real-world activity involving detained/captive persons.</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue assessment and evaluation of real-time search planning capability and modeling and simulation to assess operational personnel recovery plans.</li> <li>- Assess and evaluate technologies for personnel recovery geospatial data visualization, predictive and real-time planning capabilities for cyber support to personnel recovery, standardization and interoperability of joint personnel recovery mission management and planning systems, and standardization of human and machine-to-machine information exchanges, communications, and data transfer to facilitate mission planning for personnel recovery.</li> </ul> <p><b>FY 2016 Base Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue assessment and evaluation of real-time search planning capability and modeling and simulation to assess operational personnel recovery plans.</li> <li>- Assess and evaluate technologies for personnel recovery geospatial data visualization, predictive and real-time planning capabilities for cyber support to personnel recovery, standardization and interoperability of joint personnel recovery mission management and planning systems, and standardization of human and machine-to-machine information exchanges, communications, and data transfer to facilitate mission planning for personnel recovery.</li> <li>- Begin development of Common Distress Reporting System (CDRS), integrating all personnel locator device reporting onto the existing five Combat Survivor Evader Locator base stations to provide one common operating picture for timely and efficient recovery operations of isolated personnel.</li> </ul> <p><b>FY 2016 OCO Plans:</b> N/A</p>	1.046	2.603	5.911	-	5.911
<b>Accomplishments/Planned Programs Subtotals</b>	1.046	2.603	5.911	-	5.911

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901202F <i>I Joint Personnel Recovery Agency</i>	
<b>D. Other Program Funding Summary (\$ in Millions)</b> N/A		
<b>Remarks</b>		
<b>E. Acquisition Strategy</b> Projects will leverage existing program contracts. In the rare instance where a contract does not already exist, contracts will be awarded through full and open competition.		
<b>F. Performance Metrics</b> 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.		

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901202F / Joint Personnel Recovery Agency	<b>Project (Number/Name)</b> 675196 / Joint Technology Exploitation
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Common Distress Reporting System	SS/TBD	AFLCMC/HBBC : Huntington Beach, CA	-	-		-		4.000	Dec 2015	-		4.000	Continuing	Continuing	-
Optimal Search Study	Various	Various : ,	-	0.300	Dec 2013	0.687	Jul 2015	-		-		-	Continuing	Continuing	-
Personnel Recovery Modeling and simulation development	Various	Various : ,	-	0.746	Dec 2013	-		-		-		-	Continuing	Continuing	-
Collaborative Personnel Recovery Planning Systems	Various	Various : ,	-	-		1.916	Jul 2015	1.911	Mar 2016	-		1.911	Continuing	Continuing	-
<b>Subtotal</b>			-	1.046		2.603		5.911		-		5.911	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>								<b>Date:</b> February 2015			
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0901202F / Joint Personnel Recovery Agency				<b>Project (Number/Name)</b> 675196 / Joint Technology Exploitation			
	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>		
<b>Project Cost Totals</b>	-	1.046	2.603	5.911	-	5.911	-	-	-		

**Remarks**





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901202F / <i>Joint Personnel Recovery Agency</i>	<b>Project (Number/Name)</b> 675196 / <i>Joint Technology Exploitation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Common Distress Reporting System	1	2016	4	2018
Optimal Search Study	1	2014	2	2016
Collaborative Personnel Recovery planning systems	1	2015	4	2017
Personnel Recovery Modeling and Simulation Development	1	2014	4	2015

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901218F / <i>Civilian Compensation Program</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	2.296	1.589	3.604	-	3.604	3.628	3.658	3.688	3.719	Continuing	Continuing
674139: <i>Civilian Compensation Program</i>	-	2.296	1.589	3.604	-	3.604	3.628	3.658	3.688	3.719	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

This program element provides for payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81. The Department of Labor (DOL) administers this program and charges the Department of the Air Force for its employee costs; therefore, this is a MUST PAY bill for Air Force. The PE excludes manpower authorizations and costs. This Program Element (PE) is in Budget Activity 7 in support of payment of civilian compensation benefits for disability due to personal injury sustained while in the performance of duty or due to employment-related disease according to the Federal Employees Compensation Act (FECA) under Title 5 U.S.C., Chapter 81.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	1.577	1.589	1.628	-	1.628
Current President's Budget	2.296	1.589	3.604	-	3.604
Total Adjustments	0.719	-	1.976	-	1.976
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.719	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	1.976	-	1.976

**Change Summary Explanation**

Funding increase in FY16 corrects funding shortfall and aligns program line with execution requirements. Shortfalls in FY13 and FY14 required Congressionally approved Above Threshold Reprogramming to properly execute the program. Shortfall in FY15 will also require an Above Threshold Reprogramming.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901218F / <i>Civilian Compensation Program</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Title:</b> Civilian Compensation  <b>Description:</b> Program compensates employees assigned to RDT&E facilities for worked-related injury or disease.  <b>FY 2014 Accomplishments:</b> Continue a program to compensate employees assigned to RDT&E facilities for worked-related injury or disease.  <b>FY 2015 Plans:</b> Continue a program to compensate employees assigned to RDT&E facilities for worked-related injury or disease.  <b>FY 2016 Base Plans:</b> Continue a program to compensate employees assigned to RDT&E facilities for worked-related injury or disease.  <b>FY 2016 OCO Plans:</b> N/A	2.296	1.589	3.604	-	3.604
<b>Accomplishments/Planned Programs Subtotals</b>	2.296	1.589	3.604	-	3.604

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

**Remarks**

**E. Acquisition Strategy**  
Not Applicable.

**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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force												Date: February 2015				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0901218F / Civilian Compensation Program				674139 / Civilian Compensation Program								
<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Continue development of compensation plan	RO	AF/A1 : Pentagon, DC	-	2.296	Apr 2014	1.589	Apr 2015	3.604	Apr 2016	-		3.604	Continuing	Continuing	-	
<b>Subtotal</b>			-	2.296		1.589		3.604		-		3.604	-	-	-	
<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-	
<b>Project Cost Totals</b>			-	2.296		1.589		3.604		-		3.604	-	-	-	
<b>Remarks</b>																

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901218F / <i>Civilian Compensation Program</i>	<b>Project (Number/Name)</b> 674139 / <i>Civilian Compensation Program</i>

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

Compensation program

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901218F / <i>Civilian Compensation Program</i>	<b>Project (Number/Name)</b> 674139 / <i>Civilian Compensation Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Compensation program	1	2014	4	2020

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**Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901220F / <i>Personnel Administration</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	8.322	5.026	4.598	-	4.598	6.537	6.513	6.465	6.581	Continuing	Continuing
675194: <i>Force Development Transformation</i>	-	8.322	5.026	4.598	-	4.598	6.537	6.513	6.465	6.581	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Personnel Services Delivery (PSD), under the Personnel Administration program, funds operational developments necessary to acquire, field, and modify business processes to transform the delivery of Human Resources (HR) capabilities through the structured redesign of the Total Force Personnel Community's people (Active Duty, Reserve, Guard, and Civilians), processes, and technologies. PSD Transformation fundamentally shifts the way personnel services are provided, transitioning from primarily face-to-face interactions with a personnelist to a tiered model with services delivered through online self-service, contact centers, and fewer in-person interactions. PSD supports the migration of legacy applications and other information technologies to a more sustainable and flexible, services-based architecture. PSD also supports transition from the legacy Military Personnel Data System (MILPDS) to the Air Force Integrated Personnel and Pay System (AFIPPS) to improve financial auditability and track military personnel data. To this end, PSD executes the development of several legacy personnel systems through the deployment and transitioning of applications to Department of Defense (DoD) and Commercial cloud services as part of the Federal Data Center Consolidation effort, as well as future HR application requirements which are beyond the scope of AFIPPS.

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>B. Program Change Summary (\$ in Millions)</b>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	5.990	5.026	5.049	-	5.049
Current President's Budget	8.322	5.026	4.598	-	4.598
Total Adjustments	2.332	-	-0.451	-	-0.451
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.500	-			
• SBIR/STTR Transfer	-0.168	-			
• Other Adjustments	-	-	-0.451	-	-0.451

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0901220F / <i>Personnel Administration</i>		
<b>Change Summary Explanation</b> FY14 funding increase (\$2.5M) to support development of Case Management Tracking and Reporting System (CMTARS).				
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> AF/A1 Service Oriented Architecture (SOA) - Data Sharing Services		0.873	0.145	-
<b>Description:</b> Develop reusable business and data sharing SOA services on an established architecture. These services provide authoritative personnel data and business logic to myriad of enterprise processes and systems.				
<b>FY 2014 Accomplishments:</b> Continued development of data, aggregation, and business reusable SOA services on an established architecture started in FY13. Consolidated virtual personnel systems into a single infrastructure for certification and accreditation purposes.				
<b>FY 2015 Plans:</b> Deliver increment 1 (926 military data elements). Continue to develop and field reusable business and data sharing SOA services.				
<b>FY 2016 Plans:</b> N/A				
<b>Title:</b> Human Resource Applications		5.923	0.369	0.145
<b>Description:</b> Develop AF Human Resource Applications to automate processes and create self-service capabilities to the warfighter. Also, develop replacement system for existing but technologically-obsolete case management system that will become unsupported by existing AF infrastructure on 1 Jan 2016. These capabilities include the Electronic Board Operations Support System (eBOSS) and Case Management Tracking, Analysis, and Reporting System (CMTARS).				
<b>FY 2014 Accomplishments:</b> Delivered remaining eBOSS increment 2 capabilities for Major General and Brigadier General Promotion Boards. Continued to develop increment 3 to provide capability to complete Reserve General Officer Vacancy Boards, Command Screening Boards, and Management Level Reviews for 110 disparate Continental United States (CONUS) and Outside Continental United States (OCONUS) locations. Completed development and testing of the AF Fitness Management System (AFFMS II). Also, completed Air Force Review Boards Agency (AFRBA) transformation efforts across the Doctrine-Organization-Training-Materiel-Leadership-Personnel-Facilities and Policy (DOTMLPF-P) spectrum that fully identified the need for a material solution. Identified 107 technical, functional and business requirements for a replacement system and completed all actions to develop Bounded User Requirements. Accomplished a Course of Alternative Analysis, which identified an acquisition approach of using Commercial Off-The-Shelf (COTS) solution with Government Off-The-Shelf (GOTS) add-ons where possible.				
<b>FY 2015 Plans:</b>				

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0901220F / <i>Personnel Administration</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>Continue to develop AF Human Resource Application to automate processes and create self-service capabilities to the warfighter. These capabilities include developing in eBOSS an executive records viewer capability that utilizes role based access. Continue the development of eBOSS 3 support force development and vectoring. Complete testing and fielding activities for the AFFMS II. Also, begin CMTARS RDT&amp;E effort to configure their existing Document Automation and Content Solution (DACS) product to be a software-as-a-solution product to meet AFRBA needs.</p> <p><b>FY 2016 Plans:</b> Continue to develop AF Human Resource Applications to automate processes and create self-service capabilities to the war fighter. These capabilities include completing eBOSS 3 (Force Development and Vectoring) and CMTARS Spiral development as needed for required efficiency improvements.</p>				
<p><b>Title:</b> Human Resource Systems (HRS) Transition</p> <p><b>Description:</b> Transition from the legacy MILPDS to future HR applications to improve financial auditability and track military personnel data. Provide legacy personnel systems transition and data translation to the AFIPPS Enterprise Resource Planning (ERP) program. Transition applications to DoD and Commercial cloud services as part of the Federal Data Center Consolidation effort, as well as future HR application requirements which are beyond the scope of AFIPPS.</p> <p><b>FY 2014 Accomplishments:</b> N/A</p> <p><b>FY 2015 Plans:</b> Conduct requirements analysis to identify all requirements for the transition of Legacy Personnel Applications to the Air Force Integrated Personnel and Pay System (AFIPPS) to include synchronized operations during transition period. Develop and plan for incremental decommissioning of legacy applications according to AFIPPS incremental delivery strategy to ensure support of legacy capabilities. Identify opportunities to use inherent capabilities with COTS (Oracle EBS HR, PeopleSoft) to accomplish functionality provided by current customized Oracle CEMLI code (MilPDS).</p> <p><b>FY 2016 Plans:</b> Continue to develop and execute transition/decommissioning strategy identified in FY2015 Plan.</p>		-	3.342	3.186
<p><b>Title:</b> Test &amp; Evaluation/Systems Engineering</p> <p><b>Description:</b> Continued support for all aspects of engineering including software and systems engineering, requirements analysis, configuration management, database administration, and test and evaluation throughout the lifecycle of all Human Resources applications and continued infrastructure development.</p> <p><b>FY 2014 Accomplishments:</b></p>		1.526	1.170	1.267

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901220F / <i>Personnel Administration</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Continued support for all aspects of engineering including software and systems engineering, requirements analysis, configuration management, database administration, and test and evaluation for eBOSS, SOA, and AFFMS II.  <b>FY 2015 Plans:</b> Continue support for all aspects of engineering including software and systems engineering, requirements analysis, configuration management, database administration, and test and evaluation for AFFMS II, eBOSS, SOA, and the Human Resource Systems (HRS) Transition.  <b>FY 2016 Plans:</b> Continue support for all aspects of engineering including software and systems engineering, requirements analysis, configuration management, database administration, and test and evaluation for eBOSS and Human Resource Systems (HRS)Transition.			
<b>Accomplishments/Planned Programs Subtotals</b>	8.322	5.026	4.598

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

N/A

**Remarks**

**E. Acquisition Strategy**

Personnel Services Delivery employs an evolutionary acquisition strategy to deliver incremental Information Technology, Human Resources capabilities with development contracts that are awarded in a competitive environment.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901220F / <i>Personnel Administration</i>	<b>Project (Number/Name)</b> 675194 / <i>Force Development Transformation</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Electronic Board Operations Support System Dev	SS/FFP	Diligent Consulting Inc : San Antonio, TX	-	2.801	Mar 2014	-		-		-		-	Continuing	Continuing	-
Service Oriented Architecture	C/FFP	Deloitte Consulting LLP : Alexandria, VA	-	0.345	Oct 2014	-		-		-		-	Continuing	Continuing	-
Case Management Tracking, Analysis and Reporting System (CMTARS)	MIPR	Defense Logistics Agency Document Services : Mechanicsburg, PA	-	2.500	Feb 2015	-		-		-		-	Continuing	Continuing	-
Human Resource Systems (HRS) Phase 1	TBD	TBD : TBD,	-	-		1.598	Jul 2015	-		-		-	Continuing	Continuing	-
HRS Transition Phase 2	TBD	TBD : TBD,	-	-		-		2.435	May 2016	-		2.435	Continuing	Continuing	-
<b>Subtotal</b>			-	5.646		1.598		2.435		-		2.435	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Technical Support	C/CPFF	Jacobs Technology : Lincoln, MA	-	1.081	Nov 2013	0.919	May 2015	1.167	May 2016	-		1.167	Continuing	Continuing	-
<b>Subtotal</b>			-	1.081		0.919		1.167		-		1.167	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Hardware/Software Licensing Dev Support	Various	Various : Windham, MA	-	0.045	Dec 2013	0.045	Aug 2015	-	Jan 1901	-		-	Continuing	Continuing	-
Hardware/Software Test & Evaluation	C/T&M	Lockheed Martin : Gaithersburg, MD	-	0.446	Jan 2014	-		-		-		-	Continuing	Continuing	-
Hardware/Software Test & Evaluation (new vendor)	TBD	TBD : ,	-	-		0.250	May 2015	0.100	May 2016	-		0.100	Continuing	Continuing	-





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901220F / <i>Personnel Administration</i>	<b>Project (Number/Name)</b> 675194 / <i>Force Development Transformation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SOA Inc 1 Development/Fielding	1	2014	2	2016
eBOSS Increment 2 Development/Fielding	1	2014	2	2014
eBOSS Increment 3 Contract Award/Development/Fielding	2	2014	2	2016
AFFMS II Development/Fielding	1	2014	1	2015
CMTARS-Developed Acquisition Strategy/Problem Statement Approval/Development/Fielding	4	2014	2	2015
HRS Transition Analysis	2	2015	2	2016
HRS Transition Phase 1 Contract Award/Development/Fielding	4	2015	4	2016
HRS Transition Phase 2 Contract Award/Development/Fielding	3	2016	4	2017
HRS Transition Phase 3 Contract Award/Development/Fielding	3	2017	4	2018
HRS Transition Phase 4 Contract Award/Development/Fielding	3	2018	4	2020



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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901226F / <i>Air Force Studies and Analysis Agency</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	0.760	1.394	1.103	-	1.103	1.624	1.574	1.441	1.466	Continuing	Continuing
676009: <i>M &amp; S DEVELOPMENT</i>	-	0.760	1.394	1.103	-	1.103	1.624	1.574	1.441	1.466	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Provides for development and enhancement of modeling and simulation (M&S) tools for strategic planning, operational requirements, modernization and recapitalization of systems and programs, as well as the Planning, Programming, Budgeting and Execution (PPBE) processes for the AF Analytic Community and Secretary of the Air Force Standard Analysis Toolkit in support of AF Senior Leadership. As new technologies are introduced to the battlefield (Digital Electronic Jammers, maneuvering Surface-to-Surface Missiles, Directed Energy Weapons, etc.) along with evolving warfighting techniques and support operations, the range of capabilities that needs to be covered by analytic tools needs to expand as well. M&S creation and enhancement can require extensive research in how to properly implement the emerging weapons capabilities as well as demand development of software techniques to implement the changes. Additionally, emerging and continuing focus areas such as Space, Irregular Warfare, Information Operations, Cyber warfare and ISR demand specific tools of their own for new exploration and development. These focus areas require examination in isolation as well as cross-domain making the problem more complex and increasing the R&D challenges to field new decision support tools.

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

The FY2016 funding request was reduced by \$0.399M to account for the availability of prior execution balances.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	0.786	1.394	1.509	-	1.509
Current President's Budget	0.760	1.394	1.103	-	1.103
Total Adjustments	-0.026	-	-0.406	-	-0.406
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.026	-			
• Other Adjustments	-	-	-0.406	-	-0.406

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901226F / <i>Air Force Studies and Analysis Agency</i>
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**Change Summary Explanation**

Due to evolving priorities to better understand the contributions of Intelligence, Surveillance and Reconnaissance (ISR) and populated existing tools with appropriate information regarding these assess, the ISR Mission Level Integration Tool is been accelerated from a 2016 program to a 2015. This will delay the Air Combat Analysis Environment and CFAM Follow-on investments from 2015 to 2016.

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

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
<b>Title:</b> Modeling and Simulation Development	0.760	1.394	1.103	-	1.103
<b>Description:</b> Develop and Update Modeling & Simulation (M&S) tools.					
<b>FY 2014 Accomplishments:</b> - Successfully developed M&S tools. - Conducted research into new and emerging analytic techniques.					
<b>FY 2015 Plans:</b> Continue research and development M&S tools.					
<b>FY 2016 Base Plans:</b> Will continue research and development of M&S Tools.					
<b>FY 2016 OCO Plans:</b> N/A					
<b>Accomplishments/Planned Programs Subtotals</b>	0.760	1.394	1.103	-	1.103

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

N/A

**Remarks**

N/A.

**E. Acquisition Strategy**

Previous and planned future efforts have been/will be awarded under existing Task Order contracts. AF/A9 does not anticipate awarding a new contract for R&D work in the next 2 years.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901226F / Air Force Studies and Analysis Agency	<b>Project (Number/Name)</b> 676009 / M & S DEVELOPMENT
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Software Development	Various	Not specified. ,	-	0.760	Jan 2014	1.394	Jan 2015	1.103	Jan 2016	-		1.103	Continuing	Continuing	-
<b>Subtotal</b>			-	0.760		1.394		1.103		-		1.103	-	-	-

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	0.760	1.394	1.103	-	1.103	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901226F / <i>Air Force Studies and Analysis Agency</i>	<b>Project (Number/Name)</b> 676009 / <i>M &amp; S DEVELOPMENT</i>

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

Modeling & Simulation Development	[REDACTED]																											
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901226F / <i>Air Force Studies and Analysis Agency</i>	<b>Project (Number/Name)</b> 676009 / <i>M &amp; S DEVELOPMENT</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Modeling & Simulation Development	1	2014	4	2018

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901279F / <i>Facilities Operation - Administrative</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	0.632	3.798	-	-	-	-	-	-	-	Continuing	Continuing
671017: <i>CE IT Transformation</i>	-	0.632	3.798	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**  
In FY 2015, Project 671017, CE IT Transformation, was completed.

**A. Mission Description and Budget Item Justification**  
NexGen IT is a key USAF effort to comply with statutory and regulatory policy and guidance associated with Financial Improvement and Audit Readiness (FIAR) efforts.

NexGen IT will transform Civil Engineering (CE) business processes to improve operations and support AF priorities. The plan is to leverage industry best practices, optimize core business processes, and replace existing outdated IT capabilities with a set of commercial off-the-shelf (COTS) software solutions and secure a service provider to deploy and maintain the system. This COTS solution will provide a robust, enterprise-wide CE capability that will consist of an integrated set of embedded / configurable best business practices and capabilities to support the following CE missions: Real Property Management (RPM), Work & Supply Management (WSM), Project Management (PM), and Energy Management (EnM). Capabilities are to be configured, tested, and deployed as Capability Groups.

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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	0.654	3.798	2.375	-	2.375
Current President's Budget	0.632	3.798	-	-	-
Total Adjustments	-0.022	-	-2.375	-	-2.375
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.022	-			
• Other Adjustments	-	-	-2.375	-	-2.375

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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force				<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0901279F / <i>Facilities Operation - Administrative</i>				
<b>Change Summary Explanation</b> FY 2016 decrease of \$2.375M due to realignment of funds from RDT&E to O&M.						
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>						
<b>Title:</b> NexGen IT		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
<b>Description:</b> NexGen Information Technology (NexGen IT) will transform Civil Engineering (CE) business processes to improve operations and support AF priorities. The plan is to leverage industry best practices, optimize core business processes, and replace existing outdated IT capabilities with a set of commercial off-the-shelf (COTS) software solutions and secure a service provider to deploy and maintain the system. This COTS solution will provide a robust, enterprise-wide CE capability and will consist of an integrated set of embedded / configurable best business practices and capabilities to support the following CE missions: Real Property Management (RPM), Work & Supply Management (WSM), Project Management (PM), and Energy Management (EnM). Capabilities are to be developed, tested, and deployed as Capability Groups.		0.632	3.798	-	-	-
<b>FY 2014 Accomplishments:</b> - Continued configuration, validation, and testing of the COTS CE software. - Executed Component Integration Test, Requirements Operability Test, Performance Evaluation Test, and Information Assurance Test events. - Configured and tested Real Property Information Management (RPIM) and Chief Financial Officer (CFO) compliance requirements in the COTS solution.						
<b>FY 2015 Plans:</b> - Continue Configuration Development and Testing. - Conduct Milestone C 3QFY15. - Initial Operational Capability (IOC) is scheduled for 4QFY15. - Following IOC, COTS CE software will be deployed to priority Air Force installations, MAJCOMS, Headquarters Air Force, and Forward Operating Agencies to provide full asset visibility to the Civil Engineer Community.						
<b>FY 2016 Base Plans:</b> N/A						
<b>FY 2016 OCO Plans:</b> N/A						
<b>Accomplishments/Planned Programs Subtotals</b>		0.632	3.798	-	-	-



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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force	<b>Date:</b> February 2015
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901279F / <i>Facilities Operation - Administrative</i>
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**D. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF: BA03: Line Item # 834010: <i>General Information Technology</i>	2.661	0.500	-	-	-	-	0.765	-	-	Continuing	Continuing

**Remarks**

**E. Acquisition Strategy**

A two step acquisition was used. Phase I consisted of selecting a software product to enable meeting all capabilities stated above. Phase II selected a service provider to test, integrate, deploy, and maintain the solution.

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901279F / <i>Facilities Operation - Administrative</i>	<b>Project (Number/Name)</b> 671017 / <i>CE IT Transformation</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Configuration Development	C/Various	Multiple : Multiple,	-	0.500	Apr 2014	2.000	Oct 2014	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.500		2.000		-		-		-	-	-	-

**Remarks**  
Multiple less than \$1M contracts in FY 2014, FY 2015.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Configuration Testing	C/Various	Multiple : Multiple,	-	0.132	Feb 2014	1.798	Mar 2015	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	0.132		1.798		-		-		-	-	-	-

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

			Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>			-	0.632	3.798	-	-	-	-	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2016 Air Force</b>		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901279F / <i>Facilities Operation - Administrative</i>	<b>Project (Number/Name)</b> 671017 / <i>CE IT Transformation</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
Configuration Development																												
Configuration Testing																												
Milestone C																												
Initial Operational Capability (IOC)																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901279F / <i>Facilities Operation - Administrative</i>	<b>Project (Number/Name)</b> 671017 / <i>CE IT Transformation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Configuration Development	1	2014	2	2015
Configuration Testing	2	2014	4	2016
Milestone C	3	2015	3	2015
Initial Operational Capability (IOC)	4	2015	4	2015

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	296.221	105.420	102.215	101.840	-	101.840	10.123	7.042	7.019	7.028	Continuing	Continuing
672222: <i>Program Budget Enterprise Service (PBES)</i>	2.160	1.000	1.791	1.971	-	1.971	2.011	2.009	1.980	1.984	-	14.906
675177: <i>Cost Estimating Modeling (CEM)</i>	0.000	2.700	4.442	5.016	-	5.016	5.033	5.033	5.039	5.044	Continuing	Continuing
675179: <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>	294.061	101.720	95.982	94.853	-	94.853	3.079	-	-	-	-	589.695

**MDAP/MAIS Code:** N87

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

This program element develops upgrades to existing financial management information systems. These upgrades are required to comply with auditability and transparency requirements as well as enable efficiencies in processing financial transactions. This program element also supports studies and analysis to improve future program planning and execution.

There are three projects within this program element: the Program and Budget Enterprise System (PBES), the Cost Estimating Modeling (CEM), the Defense Enterprise Accounting and Management System (DEAMS) Increment 1 (Inc 1). A previous project, DEAMS Inc 2, was incorporated into DEAMS Inc 1 and requested FY 2015 funding was removed by Congressional action.

PBES is a software development effort to deliver enhanced and modernized budgeting and programming capability.

CEM is a knowledge-based study effort to provide and enhance Air Force-wide cost estimating capabilities by developing and modernizing current cost data and estimating models, methods, and tools.

DEAMS Inc 1 is a financial software modernization effort to provide the Air Force with a modern accounting and finance system. It will allow the Air Force to comply with and fulfill statutory requirements for auditability by 2017, as required in the FY2010 NDAA, and will be Standard Financial Information Structure (SFIS) and Generally Accepted Accounting Principles (GAAP) compliant. Activities also 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 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.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2016 Air Force **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>
Previous President's Budget	108.161	107.314	61.180	-	61.180
Current President's Budget	105.420	102.215	101.840	-	101.840
Total Adjustments	-2.741	-5.099	40.660	-	40.660
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.629			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.741	-			
• Other Adjustments	-	-0.470	40.660	-	40.660

**Change Summary Explanation**

FY 2015 reduction due to Congressional Directed Reduction of \$4.629M for "Defense Enterprise Accounting Management System Increment 2."

FY 2015 reduction due of -\$0.470 due to higher DoD priorities.

FY 2016 increase of \$40.660 due to DEAMS Inc 1 programmatic adjustments.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>				<b>Project (Number/Name)</b> 672222 / <i>Program Budget Enterprise Service (PBES)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
672222: <i>Program Budget Enterprise Service (PBES)</i>	2.160	1.000	1.791	1.971	-	1.971	2.011	2.009	1.980	1.984	-	14.906
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

The Program and Budget Enterprise Service (PBES) is a software development effort that will utilize a service oriented architecture (SOA) to deliver budgeting and programming capability for the United States Air Force (USAF). PBES will replace legacy systems such as as the Automated Budget Interactive Data Environment System (ABIDES) and the Resource Allocation Programming Information Decision System (RAPIDS) and will support the budget formulation and force programming process.

Began Release 1 Proof of Concept effort with Department of the Treasury on 23 September 2013.

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

Air Force Corporate Structure will address funding for FY17 and beyond.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> PBES	1.000	1.791	1.971
<b>Description:</b> Software development effort providing modern and enhanced budgeting and programming capabilities to the USAF. Funding supports engineering and technical development and implementation activities.			
<b>FY 2014 Accomplishments:</b>			
Completed Release 1 Proof of Concept and Risk Reduction activities associated with engineering, technical development, and implementation along with acquisition support efforts to include hosting environment recommendations. Continued development and requirements definition activities.			
Initiated Release 2/3 Requirements Definition activities using organic resources. Modifications to the Planning, Programming, Budgeting and Execution (PPBE) Process led to a determination that the capabilities being delivered across Releases 2 and 3 were no longer severable; thus they were combined into a single Release referred to as Release 2/3.			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 672222 / <i>Program Budget Enterprise Service (PBES)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p>Initiated Release 4 Requirements Definition activities for Air Force justification books capability using organic resources. Addressed risk management, configuration management, document management, and other activities.</p> <p><b>FY 2015 Plans:</b> Continue Release 1 development and risk reduction activities. Approve hosting environment. Results to be used to guide future decisions leading to eventual fielding and deployment.</p> <p>Continue Release 2/3 requirements definition using organic resources. Results to be used to guide future decisions leading to fielding and deployment.</p> <p>Continue Release 4 requirements definition using organic resources. Results to be used to guide future decisions leading to fielding and deployment.</p> <p><b>FY 2016 Plans:</b> Complete Release 1 development and risk reduction activities. Resolve Release 1 software deficiencies. Results to be used to guide future decisions leading to eventual fielding and deployment in FY17.</p> <p>Complete Release 2/3 requirements definition. Initiate testing to inform future decisions leading to fielding and deployment.</p> <p>Complete Release 4 requirements definition. Initiate testing to inform future decisions leading to fielding and deployment.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	1.000	1.791	1.971

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• Not Applicable: N/A	-	-	-	-	-	-	-	-	-	-	-

**Remarks**

**D. Acquisition Strategy**  
PBES will be developed using an incremental approach following the Services Development and Delivery Process (SDDP). A competitive, best-value contracting strategy will be used. Re-use of existing government-off-the shelf (GOTS) products from Department of Treasury, Budget Formulation and Execution Manager (BFEM), may also be used to deliver Release 1-4 materiel solutions.



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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 672222 / <i>Program Budget Enterprise Service (PBES)</i>

**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.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 672222 / <i>Program Budget Enterprise Service (PBES)</i>
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<b>Product Development (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PBES R1 Development	PO	Dept of Treasury : Washington, DC	1.160	0.885	Nov 2014	0.850	Jan 2015	-		-		-	Continuing	Continuing	TBD
PBES R1 Proof of Concept	Various	AFLCMC/HIQD : WPAFB, OH	1.000	-		-		-		-		-	-	1.000	-
PBES R1 Requirements Definition	Various	Not specified. ; ,	0.000	-		0.491	Jan 2015	-		-		-	-	0.491	-
<b>Subtotal</b>			2.160	0.885		1.341		-		-		-	-	-	-

**Remarks**

FY2015 funding and contract with Department of the Treasury to re-use existing government-developed budget tools.

<b>Support (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PBES R1 Environment Hosting	MIPR	DISA : Fort Meade, MD	0.000	-		0.450	Feb 2015	-		-		-	-	0.450	-
PBES R1 Information Assurance	MIPR	SAF/AFAFO : WPAFB, OH	0.000	0.115	Aug 2014	-		-		-		-	-	0.115	-
<b>Subtotal</b>			0.000	0.115		0.450		-		-		-	-	0.565	-

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PBES R2/3 Testing	Various	Not specified. ; ,	0.000	-		-		0.986	Dec 2015	-		0.986	-	0.986	-
PBES R 4 Testing	Various	Not specified. ; ,	0.000	-		-		0.985	Dec 2015	-		0.985	-	0.985	-
<b>Subtotal</b>			0.000	-		-		1.971		-		1.971	-	1.971	-





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 672222 / <i>Program Budget Enterprise Service (PBES)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
R1 Risk Reduction Activities	1	2014	4	2016
R2/3 Requirements Definition	1	2014	4	2016
R4 Requirements Definition	1	2014	4	2016
R2/3 Testing	1	2016	4	2017
R4 Testing	1	2016	4	2017

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>					<b>Project (Number/Name)</b> 675177 / <i>Cost Estimating Modeling (CEM)</i>		
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675177: <i>Cost Estimating Modeling (CEM)</i>	-	2.700	4.442	5.016	-	5.016	5.033	5.033	5.039	5.044	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

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

Cost Estimating Modeling (CEM) provides and enhances Air Force-wide cost estimating capabilities by developing and modernizing current cost data and estimating methods and tools. In collaboration with the OSD Cost Assessment Data Enterprise (CADE) project, these products will improve the quality, timeliness, and effectiveness of the acquisition program cost estimates required by statute (e.g., 10 USC 2366, 2433, 2434) and regulation (e.g., DoDI 5000.02) in support of Air Force and Department of Defense acquisition decisions, programming and execution decisions, and Congressional mandates.

The Air Force has several requirements for research and development of new and modernized cost estimating capabilities for each weapon system type (aircraft; ballistic missiles; electronics and aircraft modifications; ground stations and automated information systems; cross cutting databases; satellites and launch vehicles; tactical missiles; and munitions). In addition, unanticipated requirements often emerge due to changing acquisition laws, regulations, initiatives; changing technologies; and evolving warfighter requirements which drive the need for cost tool updates or expanded capability. For example, current shortfalls in capability reflect efforts needed to fill gaps in response to the laws and regulations such as the FY06 NDAA report {PL 109-163--Provisions relating to Major Defense Acquisition Programs (MDAPs)}, Weapon System Acquisition Reform Act (WSARA) {provisions related to improving cost estimating quality, especially earlier in the program life-cycle and affordability analysis}, Secretary of the Air Force (SECAF) Acquisition Excellence Plan {priorities to improve cost estimating capability and affordability analysis and improved cost estimating support to requirements process}, and new Office of the Secretary of Defense (OSD) policy {better buying power initiatives on enhanced trade-off analysis, affordability analysis, and will versus should cost analysis}.

This project will perform knowledge-based studies (KBS) analyzing historical data to produce cost estimating relationships (CERs) or statistical data to develop cost estimating databases, methods and tools across hundreds of product work breakdown structure (WBS) elements and functional cost elements within each weapon system type. The different weapon system types are: Aircraft, Ballistic Missiles, Electronics and Aircraft Modifications, Ground Stations and Automated Information Systems (AIS), Cross-Cutting Studies, Satellites and Launch Vehicles (Space Systems), and Tactical Missiles and Munitions. Some areas of cost modeling efforts that are cross-cutting within all weapon system types are: cost risk metrics, methods development, statistical model enhancements; software cost database, metrics, statistical model development; contract or engineering change order analysis models; other government cost elements (e.g., depot standup and government test); nuclear hardening; and commodity area price escalation analysis and models.

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

	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Title:</b> CEM	2.700	4.442	5.016

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 675177 / <i>Cost Estimating Modeling (CEM)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Description:</b> Perform knowledge-based studies (KBS); develop databases, methods and models, and gap improvements for the following efforts: Aircraft, Ballistic Missiles, Electronics and Aircraft Modifications, Ground Stations and Automated Information Systems (AIS), Cross-Cutting Databases, Satellite and Launch Vehicles (Space Systems), and Tactical Missiles and Munitions.</p> <p><b>FY 2014 Accomplishments:</b> Initiated knowledge-based studies (KBS) to develop databases, methods and models, and gap improvements for the following efforts: Aircraft, Ballistic Missiles, Electronics and Aircraft Modifications, Ground Stations and Automated Information Systems (AIS), Cross-Cutting Databases, and Tactical Missiles and Munitions. Completed 80% of optimal data collection templates and started gap analysis.</p> <p><b>FY 2015 Plans:</b> Continue knowledge-based studies (KBS) to develop databases, methods and models, and gap improvements for the following efforts: Aircraft, Ballistic Missiles, Electronics and Aircraft Modifications, Ground Stations and Automated Information Systems (AIS), Cross-Cutting Databases, and, Tactical Missiles and Munitions. Complete optimal data collection templates, continue gap analysis, populate data templates and initiate integration with CADE. Initiate Satellite, Launch Vehicle and Nuclear Hardening portions of the effort.</p> <p><b>FY 2016 Plans:</b> Continue knowledge-based studies (KBS) to develop databases, methods and models, and gap improvements for the following efforts: Aircraft, Ballistic Missiles, Electronics and Aircraft Modifications, Ground Stations and Automated Information Systems (AIS), Cross-Cutting Databases, Tactical Missiles and Munitions, Satellites and Launch Vehicles (Space Systems). Specifically, on-going gap analysis, continue to populate data templates and complete integration with CADE.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	2.700	4.442	5.016

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

N/A

**Remarks**

N/A

**D. Acquisition Strategy**

Contracts are expected to be firm-fixed price and will be awarded through full and open competition and follow Federal Acquisition Regulations (FAR) guidelines.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 675177 / <i>Cost Estimating Modeling (CEM)</i>

**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.



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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force** **Date:** February 2015

<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 675177 / <i>Cost Estimating Modeling (CEM)</i>
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<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
Aircraft	Various	Various : Various, XX	0.000	0.819	Feb 2014	1.065	Feb 2015	1.165	Feb 2016	-		1.165	Continuing	Continuing	TBD
Ballistic Missiles	C/FFP	Tecolote : Arlington, VA	0.000	0.210	Feb 2014	0.250	Feb 2015	0.350	Feb 2016	-		0.350	Continuing	Continuing	TBD
Electronics, Aircraft Modifications	C/FFP	Tecolote : Arlington, VA	0.000	0.275	Feb 2014	0.475	Feb 2015	0.575	Feb 2016	-		0.575	Continuing	Continuing	TBD
Ground Stations, Automated Information Systems	C/FFP	Tecolote : Arlington, VA	0.000	0.276	Feb 2014	0.525	Feb 2015	0.625	Feb 2016	-		0.625	Continuing	Continuing	TBD
Cross-Cutting Databases	Various	Various : Various, XX	0.000	0.910	Feb 2014	1.292	Feb 2015	1.395	Feb 2016	-		1.395	Continuing	Continuing	TBD
Satellite, Launch Vehicles	Various	Various : Various, XX	0.000	-		0.625	Jan 2015	0.696	Jan 2016	-		0.696	Continuing	Continuing	TBD
Tactical Missiles, Munitions	C/FFP	Various : Various, XX	0.000	0.210	Feb 2014	0.210	Feb 2015	0.210	Feb 2016	-		0.210	Continuing	Continuing	TBD
<b>Subtotal</b>			0.000	2.700		4.442		5.016		-		5.016	-	-	-

<b>Support (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 675177 / <i>Cost Estimating Modeling (CEM)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contract for initiation of Knowledge Based Studies (KBS)	2	2014	2	2014
Aircraft KBS	2	2014	4	2016
Ballistic Missiles KBS	2	2014	4	2016
Electronics, Aircraft Modifications KBS	2	2014	4	2016
Ground Stations, Automated Information Systems KBS	2	2014	4	2016
Tactical Missiles, Munitions KBS	2	2014	4	2016
Cross-Cutting Databases KBS	2	2014	4	2019
Satellites, Launch Vehicles KBS	2	2015	2	2017

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 7					<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>				<b>Project (Number/Name)</b> 675179 / <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
675179: <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>	294.061	101.720	95.982	94.853	-	94.853	3.079	-	-	-	-	589.695
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

MDAP/MAIS Code: N87

Defense Enterprise Accounting and Management System (DEAMS) is a commercial-off-the-shelf (COTS), Oracle-based software implementation effort that will provide an auditable, modern accounting and finance system. DEAMS is a Joint United States Air Force (USAF) and United States Transportation Command (USTRANSCOM) Enterprise Resource Planning (ERP) Program that will replace many existing accounting and finance legacy systems and will provide core funds execution management functions consistent with financial management laws, regulations and policy, general ledger, funds management, payments, receivables, cost and revenues, and fiduciary reporting. DEAMS is compliant with the Clinger-Cohen Act, Business Enterprise Architecture (BEA), and integrates into Global Combat Support System-Air Force (GCSS-AF). When fully deployed, DEAMS will bring the Air Force in compliance with the Financial Improvement and Audit Readiness (FIAR) requirement in the 2010 NDAA.

DEAMS Inc 1 is planned as an eight-release program:

- Release 1 - Air Mobility Command (AMC) without Transportation Working Capital Funds (TWCF)
- Release 2 - AMC with TWCF, Defense Finance and Accounting Service (DFAS) Rome
- Release 3 - Air Combat Command (ACC), Air Force Global Strike Command (AFGSC), Air Education and Training Command (AETC), Air Force Reserve Command (AFRC), and Air National Guard (ANG) Geographically Separated Units (GSUs) to include DFAS Limestone
- Release 4 - Capabilities and interfaces to support AF deployments
- Release 5 - U. S. Air Forces in Europe (USAFE), Pacific Air Forces (PACAF), and DFAS Japan
- Release 6 - Air Force District of Washington (AFDW), Air Force Special Operations Command (AFSOC), U.S. Air Force Academy (USAFA), Air Force Space Command (AFSPC), Air Force Materiel Command (AFMC), and DFAS Columbus
- Release 7 - Conversion programs (Legacy elimination)
- Release 8 - Surface Deployment and Distribution Command (SDDC)

DEAMS Inc 1 capability will continue to be deployed in FY2016-2017 as approved by the Milestone Decision Authority.

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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 675179 / <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<p><b>Title:</b> Product Development</p> <p><b>Description:</b> DEAMS Inc 1 capability development activities support multiple releases as described in the mission description. Development activities include design, build, test, data conversion, cutover from legacy systems and the resolution of deficiency reports and defects. Activities also include hardware support (system administration and database security) and storage service by Defense Information Systems Agency (DISA); continued development of interface to Global Combat Support System (GCSS); Enterprise Resource Planning (ERP) support; Independent Verification and Validation (IV&amp;V); Developmental Release Field Support (DRFS) to include process execution, data scripts, etcetera; help desk support; Engineering Integration Services (EIS) for oversight of development tools and processes; deployment training and change management activities, etc. Provides acquisition, contract, finance, and cost management planning and support activities.</p> <p><b>FY 2014 Accomplishments:</b> Continued DEAMS Inc 1 capability development and test activities to allow for further deployments. Deployed DEAMS Inc 1 capability to Dover AFB, DE; Grand Forks AFB, ND; Little Rock AFB, AR; and Pope Field, NC; Fairchild AFB, WA; JB Lewis-McChord, WA; JB Charleston, SC; MacDill AFB, FL; McGuire AFB, NJ; Travis AFB, CA; DFAS-Rome.</p> <p>DEAMS Inc 2 activities were incorporated into DEAMS Inc 1.</p> <p><b>FY 2015 Plans:</b> Continue DEAMS Inc 1 capability development and test activities to support multiple deployments.</p> <p><b>FY 2016 Plans:</b> Continue DEAMS Inc 1 capability development and test activities to support multiple deployments.</p>	93.895	91.279	89.375
<p><b>Title:</b> Test and Evaluation (T&amp;E)</p> <p><b>Description:</b> The T&amp;E process will be a complete system test to validate system software requirements and to ensure compliance mandates are satisfied. The T&amp;E efforts will be conducted at developer test site, Capabilities Integration Environment (CIE) and DISA production sites. The DEAMS Inc 1 Integrated Test Plan (ITP) and System Integrator (SI) Software Test Plan (STP) cover the details of DEAMS Inc 1 T&amp;E.</p> <p><b>FY 2014 Accomplishments:</b> Performed DEAMS Inc 1 T&amp;E activities. Supported government testing for Release 2; T&amp;E support for software problem reports and defect resolution during Developmental Test/Operational Test and Evaluation (DT/OT&amp;E) and for post-fielding activities.</p> <p><b>FY 2015 Plans:</b></p>	3.000	2.771	2.728

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 675179 / <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
Continue DEAMS Inc 1 T&E activities. Support system development services testing & government testing; T&E support for software problem reports and defect resolution. <b>FY 2016 Plans:</b> Continue DEAMS Inc 1 T&E activities. Support system development services testing & government testing; T&E support for software problem reports and defect resolution.			
<b>Title:</b> Management Services <b>Description:</b> Program Management Administration Costs <b>FY 2014 Accomplishments:</b> Program Management Administration Costs <b>FY 2015 Plans:</b> Program Management Administration Costs <b>FY 2016 Plans:</b> Program Management Administration Costs	4.825	1.932	2.750
<b>Accomplishments/Planned Programs Subtotals</b>	101.720	95.982	94.853

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF: BA03: Line Item # 834430: GCSS-AF FOS	5.941	-	-	-	-	-	-	-	-	-	13.334
• OPAF: BA03: Line Item #834470: DEAMS	-	15.298	9.255	-	9.255	-	-	-	-	-	-

**Remarks**  
DEAMS Other Procurement Air Force (OPAF) funding moved from Weapon System Code (WSC) 834430, Global Combat Support System - Air Force Family of Systems (GCSS-AF Fos) to WSC 834470, DEAMS in FY15 to enhance transparency.

**D. Acquisition Strategy**  
DEAMS Inc 1 will employ multiple contract actions as the various Releases are developed, tested, and deployed through FY2017.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 675179 / <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>

DEAMS Inc 2 activities were incorporated into DEAMS Inc 1 in FY 2014.

**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.



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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>											<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>				<b>Project (Number/Name)</b> 675179 / <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>							

<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
DRFS (Post Production Support, Level 2/3 Help Desk Support), System Stabilization, Design, Blueprint, Code, Development tools/ processes, etc.	Various	Accenture Federal Services LLC : Various,	70.607	37.307	Dec 2013	43.626	Nov 2014	40.596	Nov 2015	-		40.596	3.079	195.215	TBD
DRFS (Level 1 Help Desk Support)	C/FFP	The Greentree Group : Dayton, OH	1.580	0.911	Mar 2014	-		-		-		-	-	2.491	TBD
ESB messaging, adapters, web services, security, digital signature service, etc.	MIPR	GCSS-AF : Gunter AFB, AL	4.828	1.598	Oct 2013	-		-		-		-	-	6.426	TBD
Computing and storage support, system administration, security, storage, etc.	MIPR	DISA : Various,	22.351	4.714	Oct 2013	1.757	Oct 2014	-		-		-	-	28.822	TBD
Direct Mission Support (Development/Integration Environments, and contract efforts less than \$1M in any displayed budget year)	Various	Various : Various,	64.749	17.265	Oct 2013	15.764	Oct 2014	16.650	Oct 2015	-		16.650	-	114.428	TBD
SME Support, Deployment Support, Master Data Conversion and Training Development	C/T&M	Kearney and Company : Various,	54.786	21.118	Mar 2013	12.998	Mar 2014	16.296	Mar 2015	-		16.296	-	105.198	TBD
Change Management, Strategic Communications	C/FFP	SAIC : Dayton, OH	0.400	0.993	Dec 2013	1.547	Dec 2014	1.889	Dec 2015	-		1.889	-	4.829	TBD
Information Assurance (IA) / Risk Management Framework (RMF)	C/CPFF	Jacobs Technology : Dayton, OH	0.536	0.551	Nov 2013	0.567	Nov 2014	0.584	Nov 2015	-		0.584	-	2.238	TBD
ERP System Integration	C/FFP	Credence Management	7.254	3.263	Jun 2014	6.342	Jun 2015	5.321	Jun 2016	-		5.321	-	22.180	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>											<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>				<b>Project (Number/Name)</b> 675179 / <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>							

<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
		Solutions LLC : Dayton, OH													
FFRDC ERP Engineering	C/Various	The MITRE Corporation : Various,	8.678	1.079	Oct 2013	1.408	Oct 2014	1.450	Oct 2015	-		1.450	-	12.615	-
Independent Verification and Validation (IV&V)	C/FFP	Ryan Consulting : Dayton, OH	5.444	1.097	Jan 2014	1.589	Jan 2015	1.518	Oct 2015	-		1.518	-	9.648	-
ETASS (Engineering)	C/CPFF	Jacobs Technology : Dayton, OH	23.467	3.999	Nov 2013	5.681	Nov 2014	5.071	Nov 2015	-		5.071	-	38.218	TBD
<b>Subtotal</b>			264.680	93.895		91.279		89.375		-		89.375	3.079	542.308	-

**Remarks**

DMS data are a consolidation of multiple less than \$1M contracts.

DRFS: Developmental Release Field Support  
DISA: Defense Information Systems Agency  
ERP: Enterprise Resource Planning  
ESB: Enterprise Service Bus  
FFRDC: Federally Funded Research and Development Center  
GCSS-AF: Global Combat Support System - Air Force  
SME: Subject Matter Expert

<b>Support (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>											<b>Date:</b> February 2015				
<b>Appropriation/Budget Activity</b> 3600 / 7				<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>				<b>Project (Number/Name)</b> 675179 / <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>							

<b>Test and Evaluation (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test services from AFOTEC, JITC, LDTO and other miscellaneous test resources	MIPR	Various : Various,	8.339	3.000	Oct 2013	2.771	Oct 2014	2.728	Oct 2015	-		2.728	-	16.838	TBD
<b>Subtotal</b>			8.339	3.000		2.771		2.728		-		2.728	-	16.838	-

**Remarks**

AFOTEC: Air Force Operational Test and Evaluation Center  
 JITC: Joint Interoperability Test Command  
 LDTO: Lead Developmental Test Organization

<b>Management Services (\$ in Millions)</b>				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration costs: Cost Estimating Support, Travel, Supplies, Equipment, Program Office Network Support, Engineering Services, etc.	Various	AFLCMC : Wright-Patterson AFB, OH	8.370	0.913	Oct 2013	0.861	Oct 2014	0.894	Oct 2015	-		0.894	-	11.038	TBD
Economic Analysis Support	C/CPAF	Peerless Technologies : Dayton, OH	0.000	1.465	Jul 2014	-		-		-		-	-	1.465	-
Program Management Office Support	C/CPFF	Quantech Services : Lexington, MA	12.672	2.447	Apr 2014	1.071	Apr 2015	1.856	Oct 2015	-		1.856	-	18.046	TBD
<b>Subtotal</b>			21.042	4.825		1.932		2.750		-		2.750	-	30.549	-

**Remarks**

A&AS: Advisory & Assistance Services



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 675179 / <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
DEAMS Inc 1, Milestone C					■																							
DEAMS Inc 1, Full Deployment Decision (FDD)								■																				
DEAMS Inc 1, Full Deployment (FD)												■																
DEAMS Inc 1 Initial Operational Test & Evaluation (IOT&E)					■	■	■	■																				
DEAMS Inc 1 Release 3 Development Activity	■	■	■	■																								
DEAMS Inc 1 Release 4 Development Activity					■	■	■	■	■	■	■	■																
DEAMS Inc 1 Release 5 Development Activity									■	■	■	■																
DEAMS Inc 1 Release 6 Development Activity									■	■	■	■	■	■	■	■												
DEAMS Inc 1 Release 7 Development Activity													■	■	■	■												
DEAMS Inc 1 Release 8 Development Activity																	■	■	■	■	■	■	■	■				

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force		<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0901538F / <i>Financial Management Information Systems Development</i>	<b>Project (Number/Name)</b> 675179 / <i>Defense Enterprise Accounting Management System Increment 1 (DEAMS Inc 1)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DEAMS Inc 1, Milestone C	1	2015	1	2015
DEAMS Inc 1, Full Deployment Decision (FDD)	3	2015	3	2015
DEAMS Inc 1, Full Deployment (FD)	4	2016	4	2016
DEAMS Inc 1 Initial Operational Test & Evaluation (IOT&E)	1	2015	3	2015
DEAMS Inc 1 Release 3 Development Activity	1	2014	4	2014
DEAMS Inc 1 Release 4 Development Activity	1	2015	3	2016
DEAMS Inc 1 Release 5 Development Activity	4	2015	2	2016
DEAMS Inc 1 Release 6 Development Activity	4	2015	3	2016
DEAMS Inc 1 Release 7 Development Activity	1	2016	4	2016
DEAMS Inc 1 Release 8 Development Activity	3	2017	4	2018