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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	1,336.090	216.212	267.252	400.258	-	400.258	385.881	218.900	108.600	0.000	Continuing	Continuing
65A006: <i>Space Based Space Surveillance</i>	968.453	0.000	2.071	2.000	-	2.000	0.000	0.000	0.000	0.000	Continuing	Continuing
65A009: <i>Space Fence</i>	252.280	178.174	252.578	377.700	-	377.700	378.700	218.900	108.600	0.000	Continuing	Continuing
65A012: <i>Net-centric Sensors and Data Sources</i>	43.709	9.584	12.603	12.018	-	12.018	7.181	0.000	0.000	0.000	Continuing	Continuing
65A026: <i>C-Band Radar</i>	0.000	0.000	0.000	8.540	-	8.540	0.000	0.000	0.000	0.000	Continuing	Continuing
65A038: <i>SSA Environmental Monitoring</i>	71.648	28.454	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

MDAP/MAIS Code(s): 328,438

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

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 intelligence on adversary space operations; surveillance of all space objects and activities; detailed reconnaissance of specific space assets; monitoring space environmental conditions; monitoring cooperative space assets; and conducting integrated command, control, communications, processing, analysis, dissemination, and archiving activities. This program element develops new Air Force sensors, and improved information capabilities for integration across the SSA network; it also includes developmental planning and technology forecasting for future blocks and emerging needs.

A companion program element, 0305940F, Space Situational Awareness Operations, fields, upgrades, operates, and sustains existing sensors and information integration capabilities within the SSA network. An additional companion program element, 0305614F, JSpOC Mission System, processes surveillance of all space objects and activities, maintains detailed reconnaissance of space assets, fuses space data, maintains awareness of cooperative space assets, and allows JFCC-Space to conduct integrated C2 of space forces.

Development activities are necessary to deploy new advanced sensors capable of searching for, tracking, and identifying the expanding number of debris objects on orbit as well as the increasing number of satellites launched by other nations, of which many are smaller and more capable than previous spacecraft. These activities are also required to better integrate the disparate elements of SSA in order to enable rapid, responsive space operations.

The efforts in PE 0604425 are in Budget Activity 5, System Development and Demonstration, because they are conducting development tasks aimed at meeting validated requirements prior to full-rate production.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force				DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE				
3600: Research, Development, Test & Evaluation, Air Force		PE 0604425F: Space Situation Awareness Systems				
BA 5: System Development & Demonstration (SDD)						
B. Program Change Summary (\$ in Millions)		FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget		238.261	267.252	340.905	-	340.905
Current President's Budget		216.212	267.252	400.258	-	400.258
Total Adjustments		-22.049	0.000	59.353	-	59.353
• Congressional General Reductions		-	0.000			
• Congressional Directed Reductions		-	0.000			
• Congressional Rescissions		0.000	0.000			
• Congressional Adds		-	0.000			
• Congressional Directed Transfers		-	0.000			
• Reprogrammings		-9.220	0.000			
• SBIR/STTR Transfer		-12.829	0.000			
• Other Adjustments		0.000	0.000	59.353	-	59.353
Change Summary Explanation						
FY12: -\$9.22M reprogramming from Space Fence for higher Department priorities						
FY12: -\$12.829 SBIR						
FY14: -\$6.0M SBSS Follow-On cancelled						
FY14: +\$56.8M add funds for Space Fence						
FY14: +\$8.54M C-Band Radar New Start						
FY14: +\$.06M add funds for NCSDS						

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems				PROJECT 65A006: Space Based Space Surveillance			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
65A006: Space Based Space Surveillance	968.453	0.000	2.071	2.000	-	2.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
The Space-Based Space Surveillance (SBSS) Block 10 satellite (launched on 25 September 2010) builds upon the success of the Space-Based Visible (SBV) technology demonstration, which proved the utility of conducting space object surveillance from space. SBSS provides the capability to search, detect, and track objects primarily in deep space. It accomplishes this via collecting and processing space object identification and satellite metric data, then communicating it to command and control nodes. Surveillance from space augments existing ground sensors with timely 24-hour, all-weather, all-geography object search capabilities. In conjunction with information from other Space Situational Awareness (SSA) network sensors, SBSS data enables more timely detection and tracking of space objects, particularly those in deep space.												
The SBSS Follow-on program was terminated in FY14 and beyond to pay for higher department priorities. Current FY14 funding will pay for a Lawrence Livermore National Laboratory (LLNL) initiative called Space-based Telescopes for Actionable Refinement of Ephemeris (STARE). The project will study the potential for a constellation of low Earth orbiting nano satellites to observe objects in deep space.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: Program Support and Management Services									0.000	2.071	2.000	
Description: Program management support for space-based space surveillance activities.												
FY 2013 Plans: Conducting acquisition strategy planning and Space Situational Awareness (SSA) architecture analysis to support future generation space-based SSA capabilities.												
FY 2014 Plans: LLNL will study the potential for using STARE to observe deep space objects.												
Accomplishments/Planned Programs Subtotals									0.000	2.071	2.000	
C. Other Program Funding Summary (\$ in Millions)												
N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>	PROJECT 65A006: <i>Space Based Space Surveillance</i>
C. Other Program Funding Summary (\$ in Millions)		
Remarks		
D. Acquisition Strategy The SBSS Block 10 system is currently operational. The SBSS Follow-On program is terminated in the FY14 PB. Architectural studies are being conducted in FY13 to determine the best way to provide any future space-based space surveillance beyond the life of the current system. LLNL will study the potential for STARE to supplement deep space catalog maintenance in FY14.		
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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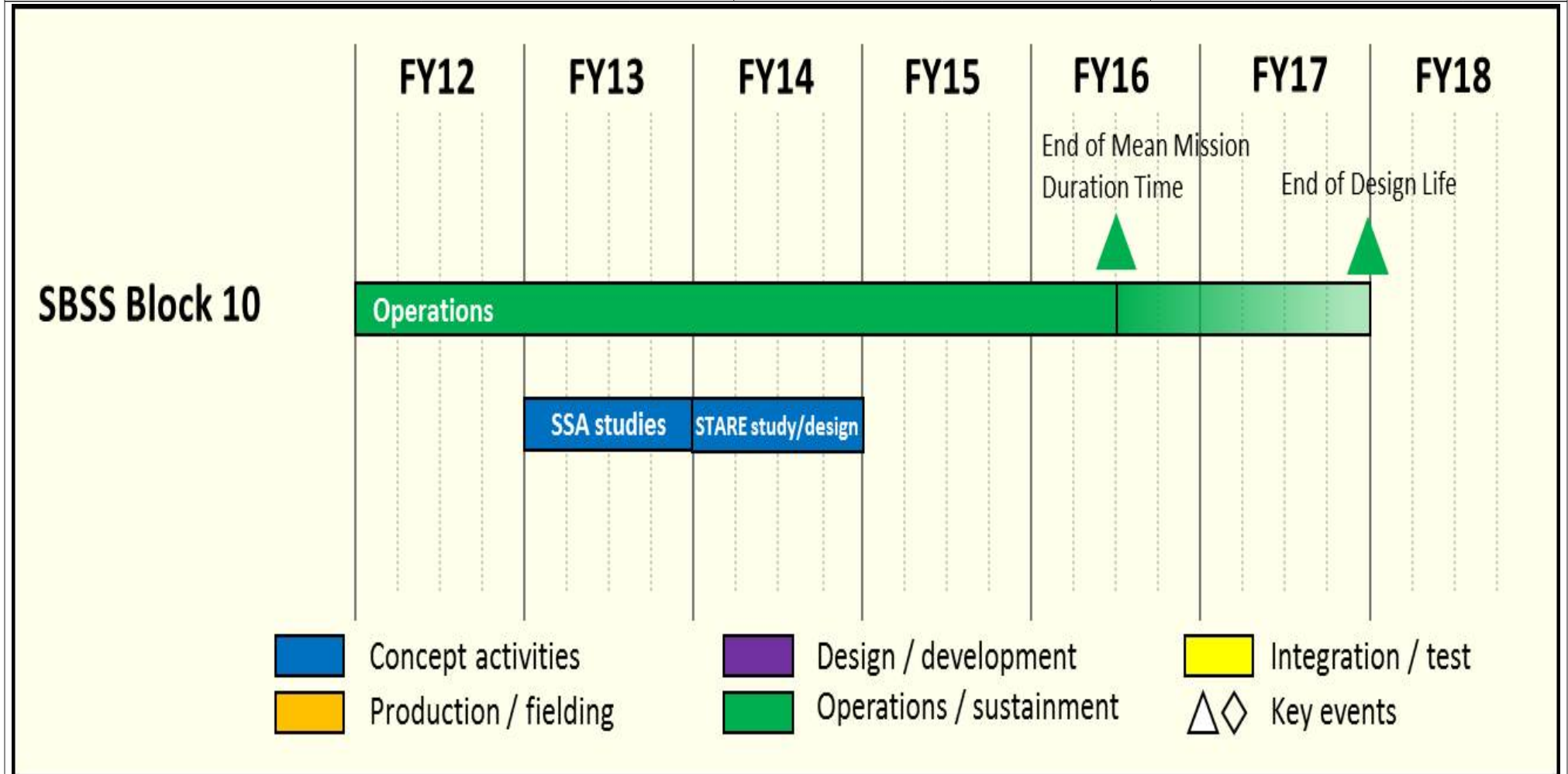
Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
3600: Research, Development, Test & Evaluation, Air Force						PE 0604425F: Space Situation Awareness Systems				65A006: Space Based Space Surveillance					
BA 5: System Development & Demonstration (SDD)															
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Block 10 design and development	C/CPAF	Northrop Grumman:Redondo Beach, CA	549.291	0.000		0.000		0.000		-		0.000	0.000	549.291	
Block 10 Technical risk reduction, mission planning & mission data processing	SS/CPFF	MIT Lincoln Laboratory:Lexington, MA	29.271	0.000		0.000		0.000		-		0.000	0.000	29.271	
Block 10 Launch vehicle integration	MIPR	Space and Missile Systems Center Det.:Kirtland AFB, NM	85.644	0.000		0.000		0.000		-		0.000	0.000	85.644	
Block 10 contractor ops & Interim Contract Support	SS/CPAF	Boeing:Huntington Beach, CA	152.223	0.000		0.000		0.000		-		0.000	0.000	152.223	
SBSS Follow-on Design & Development	Various	Various:Various,	8.430	0.000		0.000		0.000		-		0.000	0.000	8.430	
SSA risk reduction and technology transfer	Various	Various:Various,	33.247	0.000		0.000		0.000		-		0.000	0.000	33.247	
STARE Study and Design work	MIPR	Lawrence Livermore National Laboratory:Livermore, CA	0.000	0.000		0.000		2.000	Oct 2013	-		2.000	0.000	2.000	
Subtotal			858.106	0.000		0.000		2.000		0.000		2.000	0.000	860.106	
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 Office Support, FFRDC	SS/CPFF	Aerospace:Los Angeles, CA	43.773	0.000		0.977	Oct 2012	0.000		-		0.000	0.000	44.750	
Engineering and Technical Services	C/FFP	AT&T Government Solutions, Inc:Los Angeles, CA	21.310	0.000		0.708	Dec 2012	0.000		-		0.000	0.000	22.018	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>						R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>						PROJECT 65A006: <i>Space Based Space Surveillance</i>			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Support Activities	Various	Various:Los Angeles, CA	30.708	0.000		0.265	Oct 2012	0.000		-		0.000	0.000	30.973	
Subtotal			95.791	0.000		1.950		0.000		0.000		0.000	0.000	97.741	
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 Activities (other PMA)	Various	Various:Los Angeles, CA	9.718	0.000		0.021	Dec 2012	0.000		-		0.000	0.000	9.739	
SMC Financial Services	C/FFP	Tecolote Research, Inc:Los Angeles, CA	4.838	0.000		0.100		0.000		-		0.000	0.000	4.938	
Subtotal			14.556	0.000		0.121		0.000		0.000		0.000	0.000	14.677	
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			968.453	0.000		2.071		2.000		0.000		2.000	0.000	972.524	
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>	PROJECT 65A006: <i>Space Based Space Surveillance</i>



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>	PROJECT 65A006: <i>Space Based Space Surveillance</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Block 10 Ops	1	2012	4	2017
Space Based SSA alternatives study	1	2013	4	2013
STARE Work	1	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems				PROJECT 65A009: Space Fence			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
65A009: Space Fence	252.280	178.174	252.578	377.700	-	377.700	378.700	218.900	108.600	0.000	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
The Space Fence effort will develop a system of ground-based sensors to improve upon the aging Air Force Space Surveillance System (AFSSS), a Very High Frequency (VHF) radar operational since 1961. The Space Fence will provide more accurate and timely detection of smaller orbiting objects, primarily in low-earth orbit (LEO). The system will use co-located higher frequency radar transmitters and receivers at globally dispersed sites. As a result, it will greatly expand the uncued detection and tracking capacity of the Space Surveillance Network, from around 20,000 to up to 100,000 objects, while working in concert with other network sensors.												
The efforts for this project are in Budget Activity 5, System Development and Demonstration, because they are conducting development tasks aimed at meeting validated requirements prior to full-rate production.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
Title: Space Fence										178.174	252.578	377.700
Description: Space Fence contractors completed Phase A prototyping activities and the program conducted a Preliminary Design Review. The Air Force is proceeding through acquisition Milestone B activities and released a Request for Proposal (RFP) for the final system development and production contract to be awarded in the third quarter of FY13.												
FY 2012 Accomplishments: The two contractors completed a Preliminary Design Review and risk reduction activities, including a 60% facilities design and end-to-end prototype demonstration of design approaches.												
The Milestone Decision Authority (MDA) approved the Space Fence Acquisition Strategy to support Milestone B.												
FY 2013 Plans: MDA authorizing release of the RFP for the Engineering and Manufacturing Development (EMD) contract in first quarter of FY13. The program is conducting source selection and is receiving Milestone B approval and awarding the contract and in third quarter of FY13. Space Fence is securing Air Force approval of its candidate Critical Technology Elements (CTEs) and concurrence on the Preliminary Technology Readiness Assessment.												
FY 2014 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force								DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>			PROJECT 65A009: <i>Space Fence</i>			
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2012	FY 2013	FY 2014	
The contractor will conduct EMD, Production and Deployment activities in support of Integrated System Design culminating in a Critical Design Review, Systems Engineering & Integration and technical and program support. The contractor will begin site 1 construction.											
Accomplishments/Planned Programs Subtotals								178.174	252.578	377.700	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPAF: BA03: 836790: <i>Space Mods Space</i>	0.000	0.000	0.000		0.000	0.000	0.000	0.000	49.100	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
Lockheed Martin and Raytheon successfully completed contracts for development through Preliminary Design Review (PDR). In FY13, A final full and open competition will conclude and a single Engineering and Manufacturing Development (EMD), Production and Deployment contract will be awarded. The contract will take a single contractor through Critical Design Review (CDR), fabrication, integration, test, production and deployment, with up to two years of Interim Contractor Support (ICS). The program will utilize a two increment approach. Increment 1/Initial Operational Capability (IOC) will consist of successful operations at the first radar site located in the Kwajalein Atoll. Milestone B for Increment 1 is planned for FY13. Increment 2/Full Operational Capability (FOC) is planned for FY20 and will include completion of the second radar at a location which is still under negotiations with the proposed host 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 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)								R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems				PROJECT 65A009: Space Fence			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Design and development (Lockheed Martin)	C/FFP	Lockheed Martin:Moorestown, NJ	30.000	0.000		0.000		0.000		-		0.000	0.000	30.000	30.000
Design and development (Northrop Grumman)	C/FFP	Northrop Grumman:Linthicum Heights, MD	15.922	0.000		0.000		0.000		-		0.000	0.000	15.922	15.922
Design and development (Raytheon)	C/FFP	Raytheon:Sudbury, MA	30.000	0.000		0.000		0.000		-		0.000	0.000	30.000	30.000
System design and prototyping (Lockheed Martin)	C/FFP	Lockheed Martin:Moorestown, NJ	62.567	49.167	Oct 2011	0.000		0.000		-		0.000	0.000	111.734	111.734
System design and prototyping (Raytheon)	C/FFP	Raytheon:Sudbury, MA	63.266	48.349	Oct 2011	0.000		0.000		-		0.000	0.000	111.615	111.615
System development	Various	TBD:TBD,	0.000	66.627	Apr 2013	236.419	Apr 2013	362.666	Oct 2013	-		362.666	671.894	1,337.606	1,363.606
Subtotal			201.755	164.143		236.419		362.666		0.000		362.666	671.894	1,636.877	1,662.877
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Various (Independent Program Assessment, site survey, travel)	Various	Various:Various,	0.000	1.086	Oct 2011	0.459	Oct 2012	0.465	Oct 2012	-		0.465	1.209	3.219	3.219
Design Oversight and Management (Software Engineering Institute)	SS/FP	Carnegie Mellon University:Pittsburgh, PA	0.000	0.130	Jul 2012	0.000		0.000		-		0.000	0.000	0.130	0.130
Design Oversight and Management (Mitre)	SS/FP	Mitre Corp:Bedford, MA	10.066	3.946	Nov 2011	4.679	Nov 2012	3.916	Nov 2013	-		3.916	8.110	30.717	30.717
Design Oversight and Management (MIT/LL)	SS/FP	MIT Lincoln Laboratory:Lexington, MA	10.825	3.300	Nov 2011	3.642	Nov 2012	1.766	Nov 2013	-		1.766	3.654	23.187	23.187
Subtotal			20.891	8.462		8.780		6.147		0.000		6.147	12.973	57.253	57.253

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)						PE 0604425F: Space Situation Awareness Systems				65A009: Space Fence					
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 - 46th Test Group	PO	46th Test Group:Eglin AFB, FL	0.000	0.259	Feb 2012	0.741	Jan 2013	0.935	Jan 2014	-		0.935	5.045	6.980	6.980
Test - Joint Interoperability Test Command	MIPR	Joint Interoperability Test Command:Fort Huachuca, AZ	0.000	0.023	May 2012	0.024	Jan 2013	0.024	Jan 2014	-		0.024	0.393	0.464	0.464
Subtotal			0.000	0.282		0.765		0.959		0.000		0.959	5.438	7.444	7.444
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 Office Support (Infrastructure) (PMA)	Various	Various:Various,	12.205	1.307	Oct 2011	2.300	Dec 2012	3.740	Oct 2013	-		3.740	6.522	26.074	26.074
Program Office Support, Technical Studies and Analysis, Systems Engineering and Integration Management (PMA)	Various	Various:Various,	5.114	0.556	Oct 2011	0.665	Oct 2012	0.670	Oct 2013	-		0.670	2.062	9.067	9.067
Development Review and Management (Odyssey) (PMA)	C/CPFF	Odyssey Systems:Wakefield, MA	5.364	1.984	Feb 2012	1.789	Nov 2012	1.396	Dec 2013	-		1.396	2.675	13.208	13.208
Development Review and Management (Jacobs) (PMA)	C/CPFF	Jacobs Technology:Tullehoma, TN	6.951	1.440	Jan 2012	1.860	Dec 2012	2.122	Dec 2013	-		2.122	4.636	17.009	17.009
Subtotal			29.634	5.287		6.614		7.928		0.000		7.928	15.895	65.358	65.358
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			252.280	178.174		252.578		377.700		0.000		377.700	706.200	1,766.932	1,792.932
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

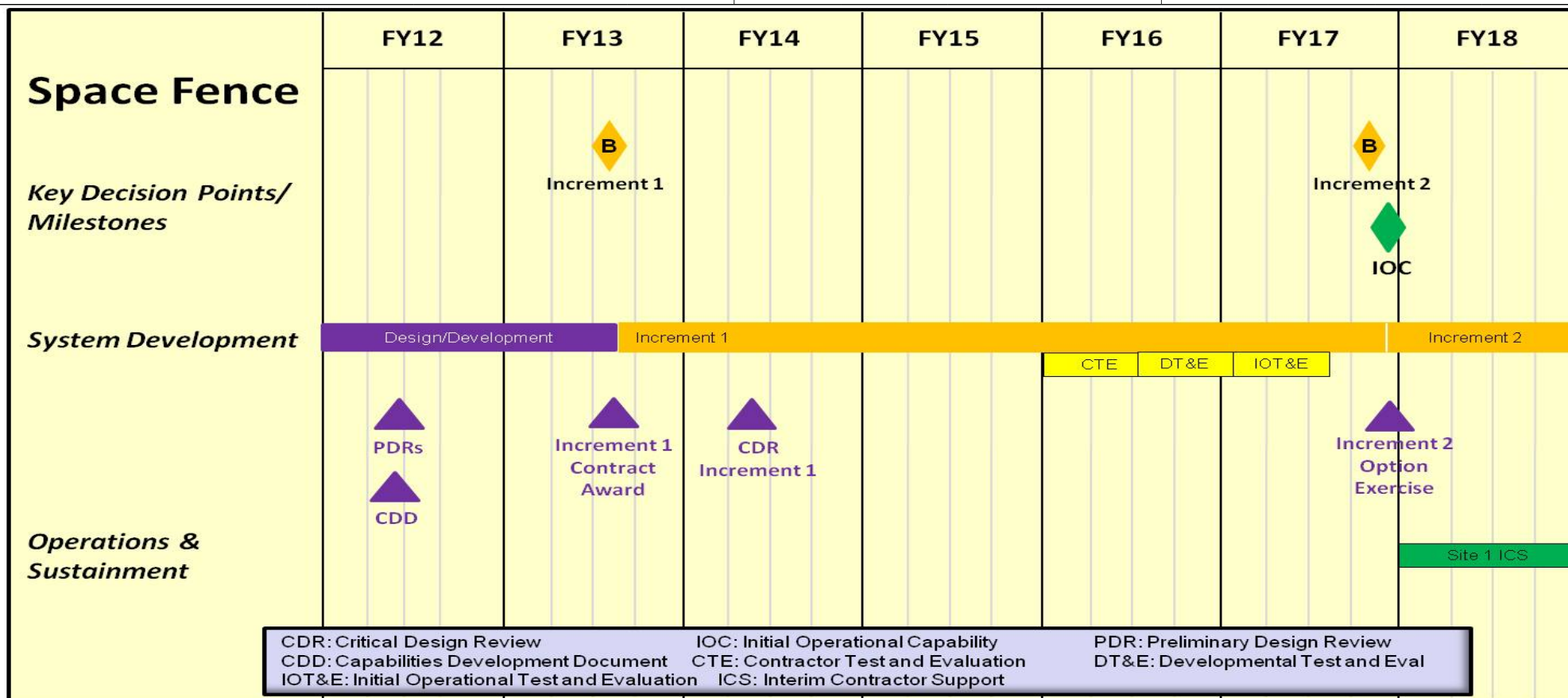
3600: Research, Development, Test & Evaluation, Air Force
BA 5: System Development & Demonstration (SDD)


R-1 ITEM NOMENCLATURE


PE 0604425F: Space Situation Awareness Systems




PROJECT

65A009: Space Fence



 Engineering/Manufacturing/
Development, Production and
Deployment

 Design/development
 Operations/sustainment

 Integration/test
  Key events

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>	PROJECT 65A009: <i>Space Fence</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Capabilities Development Document	2	2012	2	2012
Preliminary Design Review (PDR)	2	2012	2	2012
Milestone B Increment 1	3	2013	3	2013
Contract Award Increment 1	3	2013	3	2013
Critical Design Review (CDR) Increment 1	2	2014	2	2014
Milestone B Increment 2	4	2017	4	2017
Initial Operational Capability (IOC) Increment 1	4	2017	4	2017
Option Exercise Increment 2	4	2017	4	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems				PROJECT 65A012: Net-centric Sensors and Data Sources			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
65A012: Net-centric Sensors and Data Sources	43.709	9.584	12.603	12.018	-	12.018	7.181	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
^{##} The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
Net-centric Sensors and Data Sources efforts migrate the space surveillance network, non-traditional SSA sensors and data sources for use by any entity (primarily the JSpOC) into a net-centric enterprise, enabling more rapid distribution of data to the warfighter based on an AFSPC provided prioritization list. This effort will define and implement the technical architecture, and support the concept to provide the foundational data necessary to enable rapid, responsive decisions by the Commander, US Strategic Command's Joint Functional Component Commander for Space and other national capability users to detect, evaluate, attribute space events. This effort builds upon and operationalizes the successful Extended Space Sensor Architecture Advanced Concept Technology Demonstration (ESSA ACTD) and prototypes how disparate and legacy space sensor network data can be translated into a net-centric operating environment. Data will be exposed as defined by published DoD and community interface standards to ensure technical interoperability.												
These efforts are in Budget Activity 5, System Development & Demonstration, because they develop and demonstrate validated requirements for better integration of SSA data.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
Title: SENSOR & DATA INTEGRATION & EXPOSURE										7.532	9.208	8.258
Description: Providing Data Exposure and Data Source Integation Net-Centrically for consumption and use by the JSpOC and other users												
FY 2012 Accomplishments:												
Delivered version 2 Roadmap resulting in program re-baselining. Transitioned Cheyenne Mountain Processor Space (CPS) Service Oriented Architecture (SOA) Server (CS^3) system to JSpOC Mission System (JMS). Completed Air Force Satellite Control Network (AFSCN) Link Protection System (ALPS) and first instantiation of the common data model.												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force								DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems			PROJECT 65A012: Net-centric Sensors and Data Sources				
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2012	FY 2013	FY 2014	
Delivered version 2 data source roadmapping. Developed a sustainable version of the sidecar for deployment at GEODSS Socorro in 3QFY13. Developed operational version of Blue Force Status (BFS) which reports on the Wideband Global SATCOM (WGS) system. Acquired ops acceptance for ALPS. FY 2013 Plans: Deliver version 3 data source road mapping. Deliver sustainable sidecar to GEODSS sites (Socorro, Maui, and Diego Garcia). Initiate data exposure of Defense Special Missile and Astronautics Center Daily Anticipated Activity Reports (DEFSMAC DAAR) , and Space Tracking and Surveillance System (STSS). Deploy BFS operational version which reports on WGS with ops acceptance. Begin health and status net-centric effort on ALPS and continue maturation of the common data model. FY 2014 Plans: Deliver version 4 data source road mapping. Initiate data exposure of two classified data sources, SIGINT for SSA (S3A), and Space Surveillance Telescope (SST). Deploy operational version of BFS on ALPS and acquire ops acceptance. Begin health and status net centric effort on Global Positioning System (GPS) and continue maturation of the common data model.											
Title: PROGRAM OFFICE SUPPORT Description: Program Office support and related support activities FY 2012 Accomplishments: Program office support and related activities such as technical studies and analysis, systems engineering and integration, and advanced concept technology demonstrations (ACTDs), including continuation of Blue Force status effort FY 2013 Plans: Program office support and related activities such as technical studies and analysis, systems engineering and integration, and advanced concept technology demonstrations (ACTDs), including continuation of Blue Force Status effort on new systems FY 2014 Plans: Program office support and related activities such as technical studies and analysis, systems engineering and integration, and advanced concept technology demonstrations (ACTDs), including continuation of Blue Force Status effort on new systems								2.052	3.395	3.760	
Accomplishments/Planned Programs Subtotals								9.584	12.603	12.018	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPAF: BA03: 836790: Space Mods Space	0.000	4.480	4.720		4.720	4.618	4.597	0.000	0.000	0.000	19.110

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>					R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>			PROJECT 65A012: <i>Net-centric Sensors and Data Sources</i>			
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
Remarks											
D. Acquisition Strategy											
Sensor and data sources activities utilize existing engineering and study contracts and a competitively selected system engineering team.											
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 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>						R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>						PROJECT 65A012: <i>Net-centric Sensors and Data Sources</i>			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sensor Data Exposure - Sidecar Development	C/Various	MIT/LL:Lexington, MA	10.119	1.450	Jan 2012	0.000		0.000		-		0.000	0.000	11.569	11.569
Net-Centric Capability Development and Data Exposure	Various	Various:Various,	14.117	0.950	Jan 2012	8.608	Jan 2013	7.958	Jan 2014	-		7.958	4.909	36.542	36.317
Systems Engineering and Integration	C/CPFF	Lockheed Martin Integrated Systems:Endicott, NY	10.563	4.737	Jan 2012	0.000		0.000		-		0.000	0.000	15.300	15.300
Subtotal			34.799	7.137		8.608		7.958		0.000		7.958	4.909	63.411	63.186
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation Activities	RO	46th Test Squadron:Eglin AFB, FL	0.493	0.120	Jan 2012	0.600	Jan 2013	0.300	Jan 2014	-		0.300	0.200	1.713	1.713
Subtotal			0.493	0.120		0.600		0.300		0.000		0.300	0.200	1.713	1.713

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems				PROJECT 65A012: Net-centric Sensors and Data Sources					
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 office Engineering Support (FFRDC)	SS/CPFF	Aerospace Corp.:Los Angeles, CA	3.034	0.400	Oct 2011	0.479	Oct 2012	0.673	Oct 2013	-		0.673	0.196	4.782	4.782
Engineering, Technical., Financial and Other Services (PMA)	C/Various	Various:Los Angeles, CA	5.383	1.927	Dec 2011	2.916	Dec 2012	3.087	Dec 2013	-		3.087	1.876	15.189	15.189
Subtotal			8.417	2.327		3.395		3.760		0.000		3.760	2.072	19.971	19.971
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			43.709	9.584		12.603		12.018		0.000		12.018	7.181	85.095	84.870
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

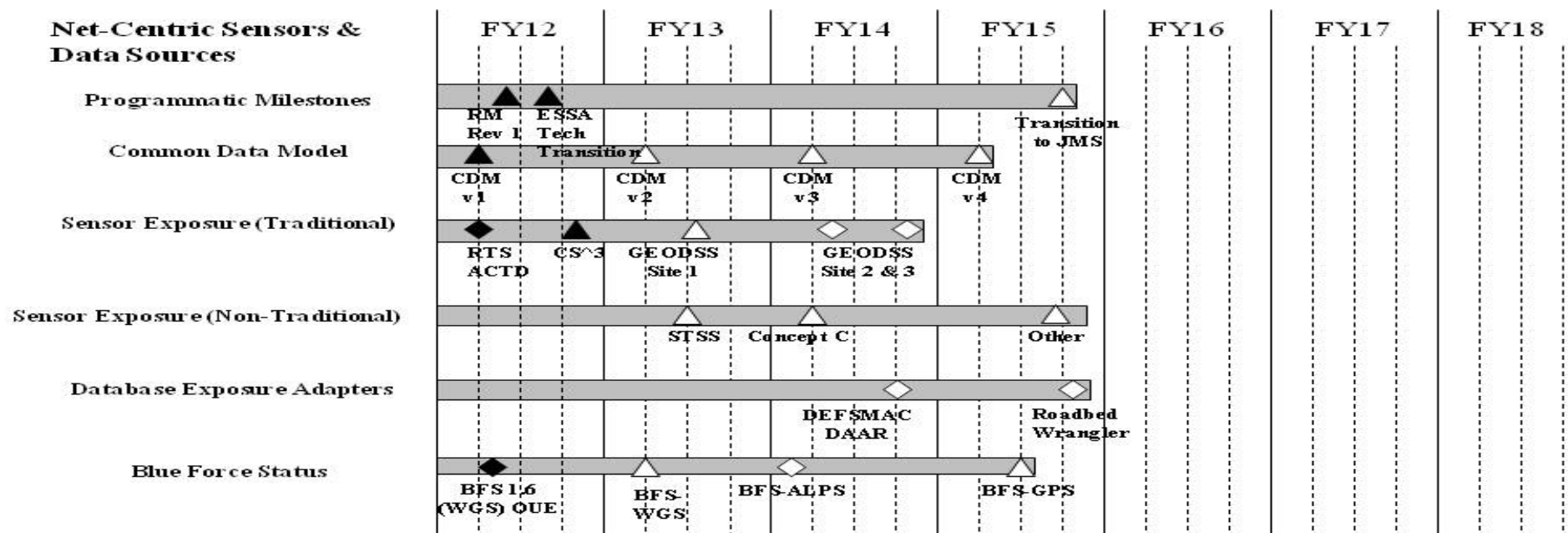
3600: Research, Development, Test & Evaluation, Air Force
BA 5: System Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604425F: Space Situation Awareness Systems

PROJECT

65A012: Net-centric Sensors and Data Sources



AFSCN: Air Force Satellite Control Network

ALPS: AFSCN Link Protection System

BFS: Blue Force Status

CDM: Common Data Model

RTS: Regan Test Site

DEFSMAC DAAR: Defense Missile and Astronautics Center Daily Anticipated Activity Report

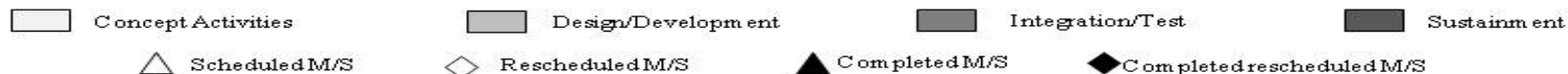
GEODSS: Ground Based Electro-Optical Deep Space Surveillance

S3A: SIGINT for SSA

SAGE: Space Awareness & Global Exploitation

SST: Space Surveillance Telescope

STSS: Space Tracking & Surveillance System



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>	PROJECT 65A012: <i>Net-centric Sensors and Data Sources</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Reagan Test Site ACTD	1	2012	1	2012
ESSA Tech Transition	3	2012	3	2012
Common Data Model v1	1	2012	1	2012
Common Data Model v2	1	2013	1	2013
Blue Force Status - WGS	1	2013	1	2013
STSS	2	2013	2	2013
GEODSS Site 1	3	2013	3	2013
GEODSS Site 2	2	2014	2	2014
GEODSS Site 3	4	2014	4	2014
DEFSMAC DAAR (Database Exposure Adapter)	3	2014	3	2014
Common Data Model v3	1	2014	1	2014
Roadbed Wrangler (Database Exposure Adapter)	4	2015	4	2015
SST	4	2015	4	2015
Common Data Model v4	1	2015	1	2015
Blue Force Status - GPS	2	2015	2	2015
Transition to JMS	4	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems				PROJECT 65A026: C-Band Radar			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
65A026: C-Band Radar	0.000	0.000	0.000	8.540	-	8.540	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
Although no funding is reflected for FY13 in this exhibit, this project received Congressional approval to begin in FY13 through both the FY13 National Defense Authorization Act and the FY13 Consolidated and Further Continuing Appropriations Act. The Cost Table information for FY13 will be updated upon submission of the FY15 President's Budget.												
A. Mission Description and Budget Item Justification												
A Memorandum of Understanding (MOU) between the United States Air Force and the Australian Department of Defence was signed by the United States Secretary of Defense and the Australian Minister for Defence on November 14, 2012 to support this international effort to provide an improved space situational awareness capability in the Australian geographic area. The MOU includes description of the need for Australian funding for part of the relocation project. The project will relocate a C-Band radar to Harold E. Holt Naval Communications Station (HEH NCS) in Australia and upgrade it to perform a Space Situational Awareness (SSA) mission. When completed, the radar will provide data for catalog maintenance, space object identification, and support for special events (e.g., space launches, satellite breakups, and maneuvers). This program is in Budget Activity 5, System Development and Demonstration (SDD) because it is conducting engineering and manufacturing development tasks.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: C-Band Radar									0.000	0.000	8.540	
Description: Relocate a C-Band radar to HEH NCS in Australia and upgrade it to perform a Space Situational Awareness (SSA) mission.												
FY 2014 Plans: Begin software and hardware upgrades; disassemble the radar and prepare for relocation.												
Accomplishments/Planned Programs Subtotals									0.000	0.000	8.540	
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
• N/A: None	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems					PROJECT 65A026: C-Band Radar	
C. Other Program Funding Summary (\$ in Millions)											
			<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>					<u>Cost To</u>	
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Base</u>	<u>OCO</u>	<u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Complete</u>	<u>Total Cost</u>
Remarks											
D. Acquisition Strategy											
<p>This project will utilize a mix of experienced contractors, FFRDC and Air National Guard resources to upgrade the C-Band system in Antigua and then subsequently complete the relocation to Australia.</p> <p>The start of the technical refresh activities (Radar Open Systems Architecture and Space Situational Awareness upgrades) is dependent upon the timing of receipt of new start approval and funding, but is currently planned to be accomplished before system relocation to Australia in 2015.</p> <p>The MOU between the United States Air Force and the Australian Department of Defence includes the need for Australian funding for part of the relocation project. Site renovation in Australia is planned to begin in FY13 as Australian funding becomes available which is reflected on the attached schedule.</p>											
E. Performance Metrics											
<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 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems				PROJECT 65A026: C-Band Radar					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
C-Band Radar Upgrades	TBD	Various:,	0.000	0.000		0.000		7.840	Dec 2013	-		7.840	0.000	7.840	7.840
Subtotal			0.000	0.000		0.000		7.840		0.000		7.840	0.000	7.840	7.840
Remarks															
Funding will be used to complete the Radar Open Systems Architecure (ROSA) and Space Surveillance Support Software (S4) upgrades to the existing C-Band Radar.															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 Office Oversight (PMA)	Various	Various:Los Angeles, Ca	0.000	0.000		0.000		0.700	Oct 2013	-		0.700	0.000	0.700	0.700
Subtotal			0.000	0.000		0.000		0.700		0.000		0.700	0.000	0.700	0.700
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		0.000		8.540		0.000		8.540	0.000	8.540	8.540
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

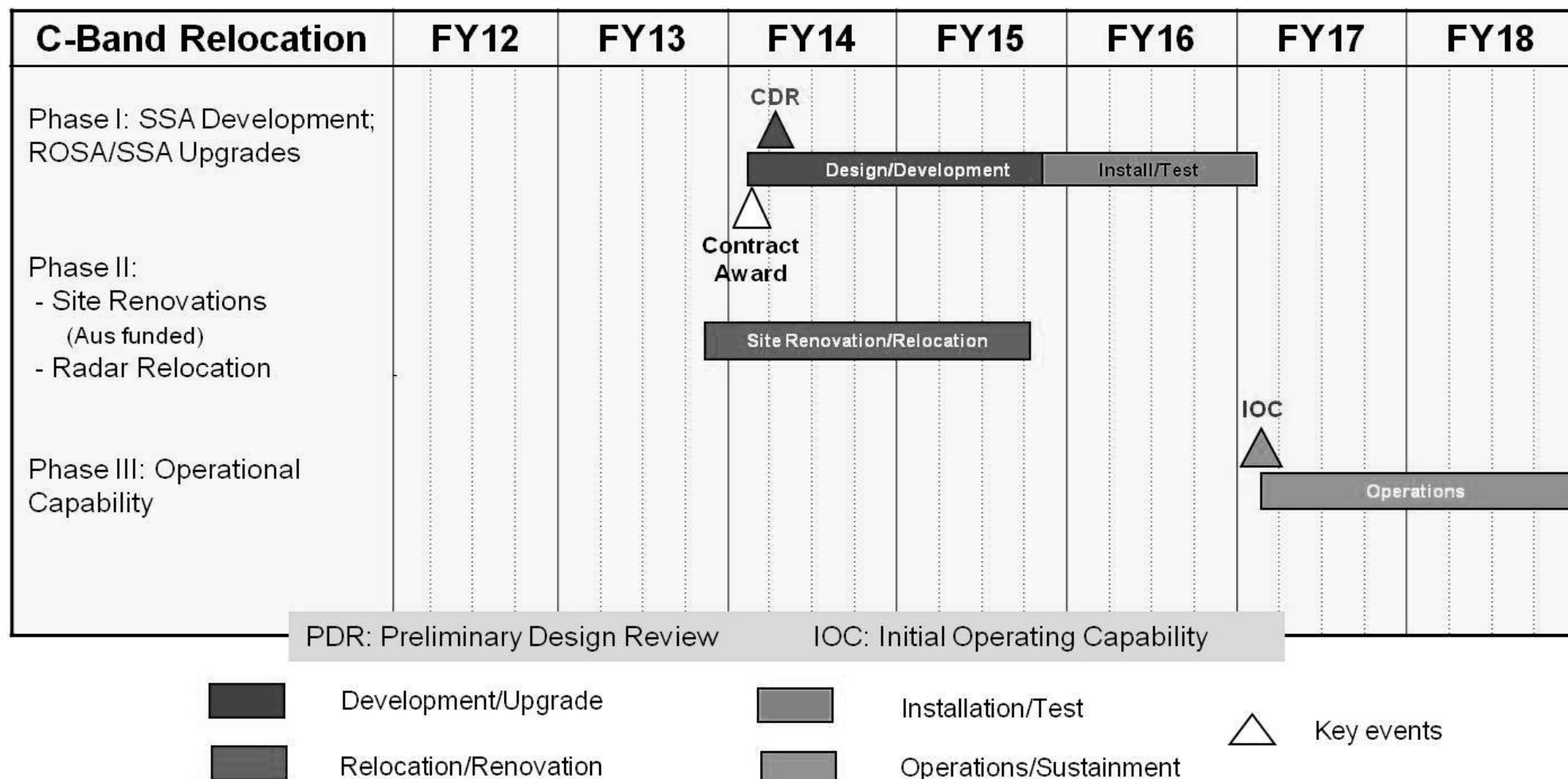
3600: Research, Development, Test & Evaluation, Air Force
BA 5: System Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604425F: Space Situation Awareness
Systems

PROJECT

65A026: C-Band Radar



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>	PROJECT 65A026: <i>C-Band Radar</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Contract Award	1	2014	1	2014
CDR	2	2014	2	2014
IOC/Operations	1	2017	1	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604425F: Space Situation Awareness Systems				PROJECT 65A038: SSA Environmental Monitoring			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
65A038: SSA Environmental Monitoring	71.648	28.454	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
In FY13, the project 65A038, SSA Environmental Monitoring (SSAEM), was terminated. The sensors that are currently under contract will be available for rideshare on the Constellation Observing System for Meteorology Ionosphere and Climate (COSMIC-2) satellite system or other available host platform.												
Space Situational Awareness Environmental Monitoring (SSAEM) replenishes the critical space weather sensing capability de-manifested from the next-generation weather program. It develops new on-orbit sensors that will detect ionospheric scintillation, supports information pertaining to GPS outages, prediction of effects of ionospheric density and electric fields and ensures data distribution to the user community.												
Current sensor development contract period of performance will continue through FY14 to deliver sensors currently under development.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: SSAEM									28.454	0.000	0.000	
Description: Replenishes critical space weather sensing capability de-manifested from next generation weather program. Develops new on-orbit sensors that will detect ionospheric scintillation, GPS outages, predict effects and ensure data distribution to the user community.												
FY 2012 Accomplishments: Completed risk reduction efforts, development/production of critical sensors and sensor to ground interface. Funded program office and related support activities, such as Acquisition Planning, Technical Studies, Systems Engineering and Integration. -Completed two sensor Preliminary Design Reviews (PDR) and began Critical Design Reviews of all sensors -Completed four of ten site surveys for Radio Frequency (RF) Beacon Ground Stations -Attained initial frequency approval for RF Beacon Payload -Manifested on new entrant EELV Launch Vehicle												
FY 2013 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>	PROJECT 65A038: <i>SSA Environmental Monitoring</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013
Program is terminated in FY13.			
FY 2014 Plans: N/A			
Accomplishments/Planned Programs Subtotals		28.454	0.000
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy The program was terminated with the submission of the FY13 PB for all funding from FY13 and future. The department determined the proper course of action was to complete the development of 6 sensors, and realigned funds in FY11 and FY12 to complete those efforts. Studies have been conducted to determine the optimum strategy for acquiring space-based environmental data sources resulting in a decision to pursue a rideshare opportunity on the COSMIC 2 program to host SSAEM sensors. Existing sensors with high Technology Readiness Levels (TRL) were leveraged and technology modernization of SSAEM sensors were performed by Air Force Research Laboratory (AFRL) and the Jet Propulsion Laboratory (JPL). The operational SSAEM sensors are being acquired through competitive contract awards. Current sensor development contract period of performance will continue through FY14 to deliver sensors currently under development.			
E. Performance Metrics Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
3600: Research, Development, Test & Evaluation, Air Force						PE 0604425F: Space Situation Awareness Systems				65A038: SSA Environmental Monitoring					
BA 5: System Development & Demonstration (SDD)															
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Tri-Global Satellite System Radio Occultation System Sensor (TRIG) Development	MIPR	Jet Propulsion Laboratory:Pasadena, CA	16.972	2.101	Apr 2012	0.000		0.000		-		0.000	0.000	19.073	19.073
Additional TRIG Development	Reqn	Broad Reach Engineering and ITT:Various,	0.000	6.336	Sep 2012	0.000		0.000		-		0.000	0.000	6.336	6.336
Radio Frequency (RF) Beacon Sensor Development	Various	SRI and Army Space and Missile Defense Command:Various,	11.178	0.000		0.000		0.000		-		0.000	0.000	11.178	11.178
RF Beacon Ground Development	MIPR	Army Space and Missile Defense Command:Huntsville, AB	2.589	0.000		0.000		0.000		-		0.000	0.000	2.589	2.589
RF Beacon Ground Integration	PO	Space & Missile Systems Center:Peterson, CO	0.861	3.000	Jan 2012	0.000		0.000		-		0.000	0.000	3.861	3.861
Ion Velocity Meter (IVM) Sensor Development	SS/ Various	AFRL & University of TX at Dallas:Various,	3.434	9.500	Apr 2013	0.000		0.000		-		0.000	0.000	12.934	12.934
Various Sensor Development	SS/ Various	Various:Various,	11.268	1.602	Sep 2012	0.000		0.000		-		0.000	0.000	12.870	12.870
Communication/Navigation Outage Forecasting System (C/NOFS)	SS/ Various	Space Development and Test Directorate:Albuquerque, NM	6.718	0.638	Jan 2012	0.000		0.000		-		0.000	0.000	7.356	7.356
Systems Integration	MIPR	University for the Characterization of Atmospheric Research:Boulder, CO	0.650	0.000		0.000		0.000		-		0.000	0.000	0.650	0.650
Cubesat and Ground System Development	Various	Various:Various,	6.647	0.930	Sep 2012	0.000		0.000		-		0.000	0.000	7.577	7.577
Subtotal			60.317	24.107		0.000		0.000		0.000		0.000	0.000	84.424	84.424

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>						R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>						PROJECT 65A038: <i>SSA Environmental Monitoring</i>			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	Various	Air Force Research Laboratory:Albuquerque, NM	3.759	1.999	Oct 2011	0.000		0.000		-		0.000	0.000	5.758	5.758
Subtotal			3.759	1.999		0.000		0.000		0.000		0.000	0.000	5.758	5.758
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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 Office Management Support (PMA)	Various	Space and Missile Systems Center/ AFRL:Los Angeles, CA	7.572	2.348	Oct 2011	0.000		0.000		-		0.000	0.000	9.920	9.920
Subtotal			7.572	2.348		0.000		0.000		0.000		0.000	0.000	9.920	9.920
Project Cost Totals			71.648	28.454		0.000		0.000		0.000		0.000	0.000	100.102	100.102
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

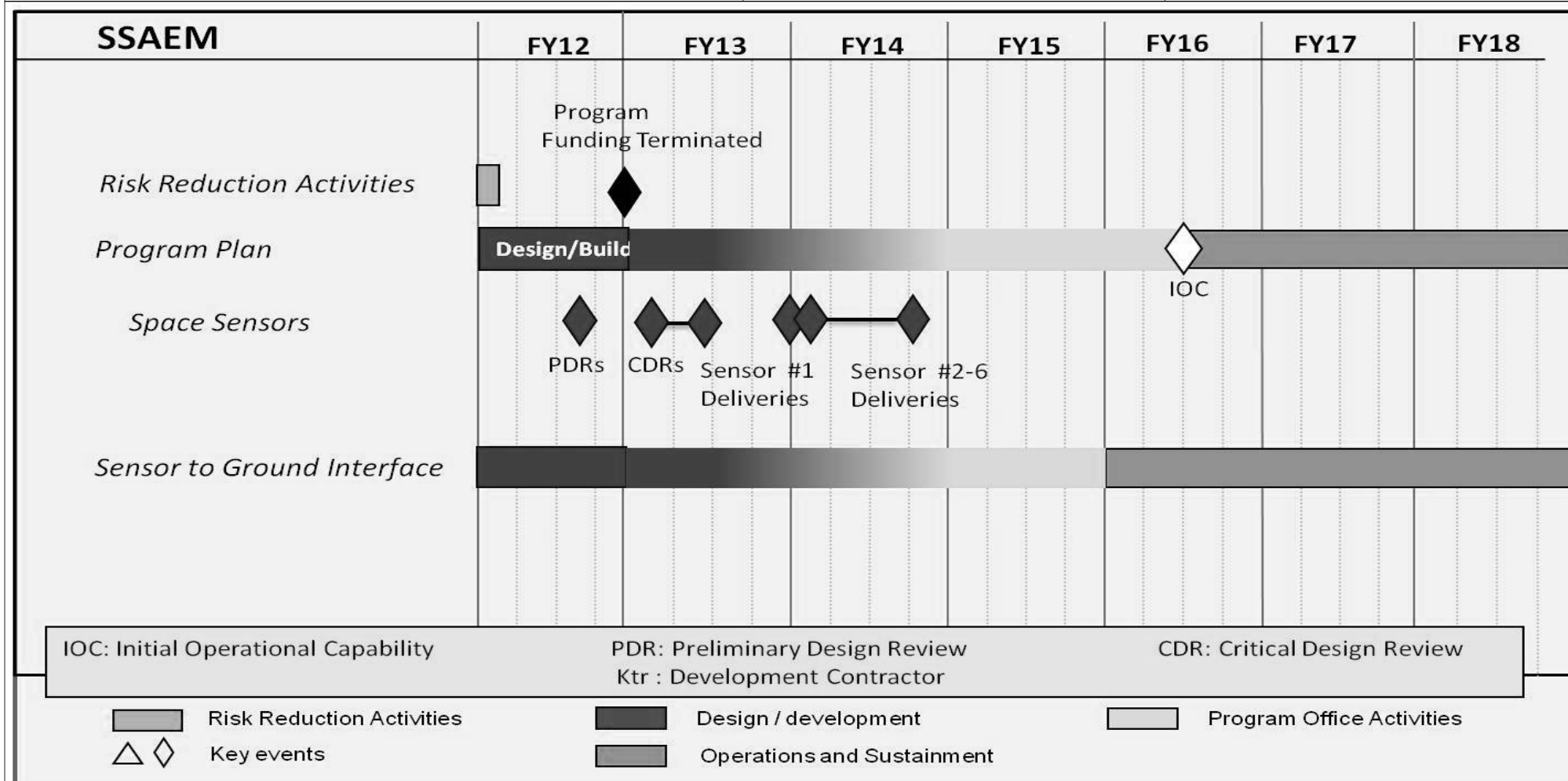
3600: Research, Development, Test & Evaluation, Air Force
BA 5: System Development & Demonstration (SDD)

R-1 ITEM NOMENCLATURE

PE 0604425F: Space Situation Awareness Systems

PROJECT

65A038: SSA Environmental Monitoring



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604425F: <i>Space Situation Awareness Systems</i>	PROJECT 65A038: <i>SSA Environmental Monitoring</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Sensor Preliminary Design Reviews	3	2012	3	2012
Sensor Critical Design Reviews	1	2013	2	2013
Space Sensor Deliveries	4	2013	4	2014