Exhibit R-2, RDT&E Budget Item 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 0604441F: *Space Based Infrared System (SBIRS) High EMD*							
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	8,347.364	621.629	448.594	352.532	-	352.532	279.888	278.002	202.362	187.952	Continuing	Continuing
653616: *SBIRS High Element EMD*	8,325.239	605.111	365.406	267.408	-	267.408	190.174	187.685	111.957	98.000	107.000	10,257.980
657009: *Space Modernization Initiative*	0.000	0.000	83.188	85.124	-	85.124	89.714	90.317	90.405	89.952	Continuing	Continuing
65A040: *Commercially Hosted Infrared Payload (CHIRP)*	22.125	16.518	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	38.643
MDAP/MAIS Code(s): 210												

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 Infrared Systems (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces, and its allies. SBIRS will enhance detection and improve reporting of intercontinental ballistic missile launches, submarine launched ballistic missile launches, and tactical ballistic missile launches. SBIRS supports Missile Defense, Battlespace Awareness, and Technical Intelligence missions by providing reliable, accurate, and timely data to Unified Combatant Commanders, Joint Task Force (JTF) Commanders, the intelligence community, and other users. SBIRS provides increased detection and tracking performance in order to meet requirements in Air Force Space Command's Operational Requirements Document. The SBIRS system includes both space and ground elements. The space segment consists of Geosynchronous Earth Orbit (GEO) satellites, payloads hosted on satellites in Highly Elliptical Orbit (HEO), and Defense Support Program (DSP) satellites. The ground segment consists of both fixed and mobile data processing elements, communications infrastructure, and relay ground stations serving all SBIRS space elements. The HEO-1 and HEO-2 payloads are on-orbit and certified for Integrated Tactical Warning/Attack Assessment (ITW/AA) missile warning operations and technical intelligence operations. The GEO-1 satellite is on-orbit and is undergoing testing and calibration to prepare for operational acceptance. GEO-2 exited storage in 4Q FY12 and is in final preparation for launch, scheduled in March 2013. Ground segment development continues through the FYDP. Concept studies/activities may be implemented to investigate obsolescence issues, Overhead Persistent Infrared (OPIR) solutions to potential operational concerns, and future evolution paths of the ground and/or space segment.

Future SBIRS OPIR satellites will be procured using the Department of Defense (DOD) Efficient Space Procurement (ESP) concept (formerly Evolutionary Acquisition for Space Efficiency (EASE)). ESP is an approach which seeks stable production and efficient sub-contractor product management through the block buy of two space vehicles at one time (please see SBIRS P-40 Exhibit). A portion of the savings realized from ESP block buys are reinvested into the OPIR Space Modernization Initiative (SMI). The primary objective of SMI is to enable and inform future decisions to maintain a capable, resilient, and affordable OPIR architecture. SMI supports the Program of Record by assessing future parts/material obsolescence and future affordability and capability design modifications. SMI funds engineering activities to reduce future system and production costs through manufacturing/ producibility enhancements and through technology insertion. SMI will also mature potential

technology upgrades at the component and system level for future space and ground architecture affordability and capability enhancements. The SBIRS OPIR SMI plan includes studies and risk reduction activities to evolve the current Program of Record SBIRS GEO satellites. SMI funded data exploitation efforts include OPIR data processing, data publication, algorithm development, network connectivity, and sensor performance assessments. The data exploitation efforts will identify affordable, responsive, and resilient measures to improve battlespace awareness data dissemination to the warfighter. SMI Architecture and Component Study efforts will assess future architecture alternatives for viability, affordability, capability and resilience. The SMI Hosted Payloads and Wide Field of View Testbeds efforts will explore technology maturation, qualification of new components, and subsystem/component prototyping to evolve the OPIR architecture.

The Commercially Hosted Infrared Payload (CHIRP) demonstration received FY11 and FY12 funds for a Wide-Field-of-View (WFOV) demonstration for technology maturation. CHIRP performed risk reduction and evaluation of WFOV infrared staring and data processing technology to potentially evolve future SBIRS staring sensors and processing algorithms. An on-orbit demonstration quantified performance levels of a prototype WFOV sensor in an operational environment. CHIRP sensor testing provided Focal Plane Array (FPA)performance/calibration characteristics, assessed WFOV staring algorithm performance in an operational environment, and investigated compatibility with current OPIR ground systems for missile warning, missile defense, and other mission areas. CHIRP experience and lessons learned have been incorporated into plans and objectives for SMI activities, to include the need for further on-orbit performance demonstration, WFOV algorithm development, and ground mission data processing for all OPIR mission areas.

This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development and integration of mature systems, and the test, evaluation, and demonstration of those systems.

B. Program Change Summary ($ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	621.629	448.594	357.532	-	357.532
Current President's Budget	621.629	448.594	352.532	-	352.532
Total Adjustments	0.000	0.000	-5.000	-	-5.000
• 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	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	-5.000	-	-5.000

Change Summary Explanation

FY14: -$5.0M for higher Department priorities.

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 653616: *SBIRS High Element EMD*	

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
653616: *SBIRS High Element EMD*	8,325.239	605.111	365.406	267.408	-	267.408	190.174	187.685	111.957	98.000	107.000	10,257.980
Quantity of RDT&E Articles	1	1	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

Quantity of RDT&E articles above reflect delivery of GEO-1 in FY11 and GEO-2 in FY12. Both were developed under this project.

A. Mission Description and Budget Item Justification

The Space-Based Infrared Systems (SBIRS) primary mission is to provide initial warning of a ballistic missile attack on the US, its deployed forces, and its allies. SBIRS will enhance detection and improve reporting of intercontinental ballistic missile launches, submarine launched ballistic missile launches, and tactical ballistic missile launches. SBIRS supports Missile Defense, Battlespace Awareness, and Technical Intelligence missions by providing reliable, accurate, and timely data to Unified Combatant Commanders, Joint Task Force (JTF) Commanders, the intelligence community, and other users. SBIRS provides increased detection and tracking performance in order to meet requirements in Air Force Space Command's Operational Requirements Document. The SBIRS system includes both space and ground elements. The space segment consists of Geosynchronous Earth Orbit (GEO) satellites, payloads hosted on satellites in Highly Elliptical Orbit (HEO), and Defense Support Program (DSP) satellites. The ground segment consists of both fixed and mobile data processing elements, communications infrastructure, and relay ground stations serving all SBIRS space elements. The HEO-1 and HEO-2 payloads are on-orbit and certified for Integrated Tactical Warning/Attack Assessment (ITW/AA) missile warning operations and technical intelligence operations. The GEO-1 satellite is on-orbit and is undergoing testing and calibration to prepare for operational acceptance. GEO-2 exited storage in 4Q FY12 and is in final preparation for launch, scheduled in March 2013. Ground segment development continues through the FYDP. Concept studies/activities may be implemented to investigate obsolescence issues, Overhead Persistent Infrared (OPIR) solutions to potential operational concerns, and future evolution paths of the ground and/or space segment.

This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development and integration of mature systems, and the test, evaluation, and demonstration of those systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Title: SBIRS EMD	605.111	365.406	267.408
Description: Continued EMD contracts for Space and Ground segment development, concept studies/activities for obsolescence issues.			
FY 2012 Accomplishments:			

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 653616: *SBIRS High Element EMD*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Continued GEO development. Continued GEO-1 on-orbit testing. Began starer tuning to enable accelerated starer processing in support of battlespace awareness and technical intelligence. Continued GEO-2 integration, assembly and test, design activities, Ground System Development (Block 10), System Engineering and Program Management, HEO host program office support, Technical Intelligence activities, Data Processing/ Exploitation/ground integration activities, Combined Task Force (CTF) support activities, and continuation of systems integration and test studies. Stored GEO-2 and be ready to execute GEO-2 launch campaign. Initiated concept studies on space vehicle bus capabilities for future WFOV demonstrations. Continued Program Office and related support activities (to include SETA), technical analysis and independent verification and validation of contractor. Continued Systems Engineering and Integration (SE&I). ***FY 2013 Plans:*** Continue GEO development. Complete GEO-1 operational user evaluation and certification. Accelerate starer tuning and infrastructure improvements to make starer data available to battlespace awareness and technical intelligence users. Conduct GEO-2 launch campaign and begin on-orbit testing. Continue Ground System Development (Block 10), System Engineering and Program Management, HEO host program office support, Technical Intelligence activities, Data Processing/Exploitation/ground integration activities, CTF support activities, systems integration and test studies. Continue Program Office and related support activities (to include SETA), technical analysis and independent verification and validation of Contractor. Continue SE&I. ***FY 2014 Plans:*** Complete development of Ground mission processing risk reduction build, which includes starer processing for ITW/AA users. Complete GEO-2 operational user evaluation and certification. Continue Ground System Development (Block 10), System Engineering and Program Management, HEO host program office support, Technical Intelligence activities, Data Processing/ Exploitation/ground integration activities, CTF support activities, systems integration and test studies. Continue Program Office and related support activities, technical analysis and independent verification and validation of Contractor. Continue SE&I.			
Accomplishments/Planned Programs Subtotals	605.111	365.406	267.408

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: Line Item # 836720: *Space Based Ir Sensor Pgm Space*	49.674	47.135	28.235		28.235	26.332	7.725	7.703	7.842	Continuing	Continuing
• MPAF: BA05: Line Item # MSSBIR: *SBIR High (Space) TOA*	324.889	454.251	583.192		583.192	580.888	537.971	570.759	1,143.014	191.481	8,004.874

Remarks

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 653616: *SBIRS High Element EMD*

D. Acquisition Strategy

The pre-SDD SBIRS contracts were competed in full and open competition. Two contracts were awarded to Lockheed/Loral/Aerojet and Hughes/TRW in 1995 for the pre-SDD phase. A single contract was awarded to Lockheed Martin in 1996 for the SDD phase. This contract is still ongoing and will deliver GEO-2 and the ground segment. Production contracts are discussed in the procurement budget exhibits.

E. Performance Metrics

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 653616: *SBIRS High Element EMD*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Pre-EMD (LMMS & Hughes)	C/CPFF	Hughes Aircraft Company:El Segundo, CA	159.600	0.000		0.000		0.000		-		0.000	0.000	159.600	159.600
SBIRS EMD	Various	Prime: Lockheed Martin Sunnyvale; Sub: Northrop Grumman:,	7,513.196	532.771	Oct 2011	313.123	Oct 2012	230.238	Oct 2013	-		230.238	584.888	9,174.216	9,174.216
Systems engineering and Integration (SEI)	C/CPAF	The Analytical Sciences Corporation:Andover, MA	22.509	11.628	Dec 2011	8.682	Dec 2012	5.613	Dec 2013	-		5.613	13.470	61.902	61.902
SBIRS Pre-SDD Contract Adjustment	Various	Various:,	4.780	0.000		0.000		0.000		-		0.000	0.000	4.780	4.780
Technology	Various	Various:,	11.600	0.000		0.000		0.000		-		0.000	0.000	11.600	11.600
Phenomenology	Various	Various:,	17.350	0.000		0.000		0.000		-		0.000	0.000	17.350	17.350
Sensor Technology	Various	Sandia National Lab:,	10.000	0.000		0.000		0.000		-		0.000	0.000	10.000	10.000
		Subtotal	7,739.035	544.399		321.805		235.851		0.000		235.851	598.358	9,439.448	9,439.448

Remarks

SBIRS EMD includes SBIRS EMD prime contract with Lockheed Martin, Program/Mission Support and Host SPO efforts. Award dates represent date of first award of the funds for that fiscal year.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
WFOV Flight Demonstration	SS/FFP	American Government Services:McLean, VA	0.000	1.188	Aug 2012	0.000		0.000		-		0.000	0.000	1.188	1.188

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 653616: *SBIRS High Element EMD*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
WFOV Testbed Concept Study	MIPR	Millennium Space Systems:Torrance, CA	0.000	3.000	Sep 2012	0.000		0.000		-		0.000	0.000	3.000	3.000
Various Program Support	Various	Various:,	7.142	3.675	Jun 2012	0.000		0.000		-		0.000	0.000	10.817	10.817
		Subtotal	7.142	7.863		0.000		0.000		0.000		0.000	0.000	15.005	15.005

Remarks

Award dates represent date of first award of the fiscal year.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total 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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Support (FFRDC)	RO	Aerospace Corp.:El Segundo, CA	385.098	22.741	Nov 2011	20.164	Nov 2012	15.506	Nov 2013	-		15.506	54.942	498.451	498.451
SMC Admin Support (PMA)	C/FP	Quantech Services, Inc.:Lexington, MA	6.878	1.988	Apr 2012	2.196	Dec 2012	1.113	Dec 2013	-		1.113	3.304	15.479	15.479
SMC Technical Support (PMA)	C/FP	Scitor Corp.:El Segundo, CA	59.870	7.144	Dec 2012	5.654	Dec 2012	3.755	Dec 2013	-		3.755	10.662	87.085	87.085
SMC Financial Support (PMA)	C/FP	Tecolote, Inc.:Goleta, CA	14.335	1.596	Nov 2011	1.301	Dec 2012	1.020	Dec 2013	-		1.020	3.403	21.655	21.655
Various Management Support Services (PMA)	Various	Various:Various,	112.881	19.380	Oct 2011	14.286	Oct 2012	10.163	Oct 2013	-		10.163	24.147	180.857	180.857
		Subtotal	579.062	52.849		43.601		31.557		0.000		31.557	96.458	803.527	803.527

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 653616: *SBIRS High Element EMD*	

	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	8,325.239	605.111		365.406		267.408		0.000		267.408	694.816	10,257.980	10,257.980

Remarks

The total EMD program cost estimate is based on the Apr 11 Service Cost Position.

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 653616: *SBIRS High Element EMD*

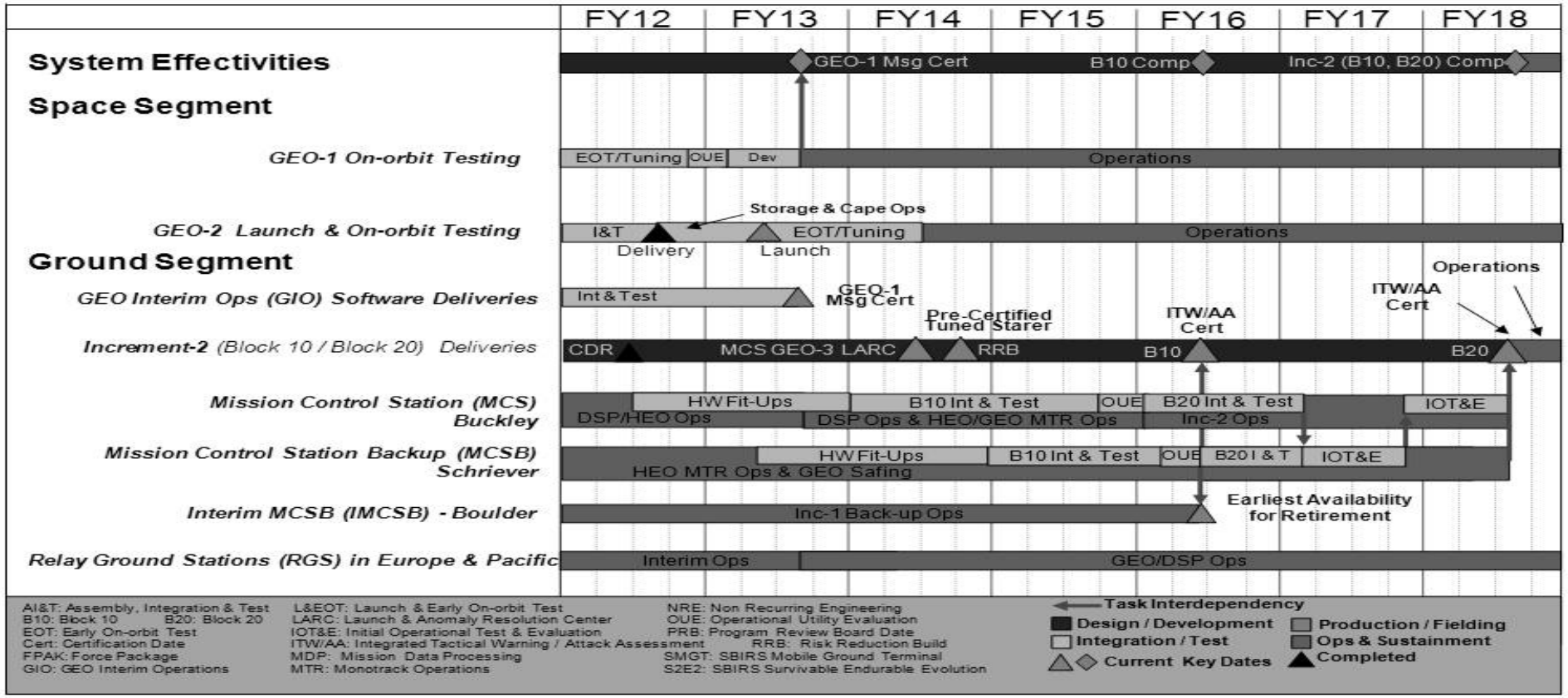

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604441F: *Space Based Infrared System (SBIRS) High EMD*	**PROJECT** 653616: *SBIRS High Element EMD*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
GEO-1 Payload Calibration and Tuning	1	2012	3	2013
Block 10 Critical Design Review (CDR) Complete	2	2012	2	2012
GEO-2 Satellite Available for Delivery	3	2012	3	2012
Block 10 Mission Control Station (MCS) Fit Up	3	2012	4	2013
GEO-1 OUE/GEO Message Cert	3	2013	3	2013
MCSB Fit Up	2	2013	4	2014
GEO-2 Payload Calibration and Tuning	2	2013	2	2014
Block 10 Integration & Test	1	2014	3	2015
MCSB Integration & Test	1	2015	1	2016
MCS Launch and Anomaly Resolution Center (LARC) ready for GEO-3 launch and early on-orbit System Test	2	2014	2	2014
GEO-2 Operational Acceptance	3	2014	3	2014

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 657009: *Space Modernization Initiative*	

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
657009: *Space Modernization Initiative*	0.000	0.000	83.188	85.124	-	85.124	89.714	90.317	90.405	89.952	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

The SBIRS Space Modernization Initiative (SMI) is funded in PE 0604441, project 657009 and began in FY13.

A. Mission Description and Budget Item Justification

Future SBIRS Overhead Persistent Infrared (OPIR) satellites will be procured using the Department of Defense (DOD) Efficient Space Procurement (ESP) concept (formerly Evolutionary Acquisition for Space Efficiency (EASE)). ESP is an approach which seeks stable production and efficient sub-contractor product management through the block buy of two space vehicles at one time (please see SBIRS P-40 Exhibit). A portion of the savings realized from ESP block buys are reinvested into the OPIR Space Modernization Initiative (SMI). The primary objective of SMI is to enable and inform future decisions to maintain a capable, resilient, and affordable OPIR architecture. SMI supports the Program of Record by assessing future parts/material obsolescence and future affordability and capability design modifications. SMI funds engineering activities and studies to reduce future system and production costs through manufacturing/ producibility enhancements and through technology insertion. SMI will also mature potential technology upgrades at the component and system level for future space and ground architecture affordability and capability enhancements. The SBIRS OPIR SMI plan includes studies and risk reduction activities to evolve the current Program of Record SBIRS GEO satellites. SMI funded data exploitation efforts include OPIR data processing, data publication, algorithm development, network connectivity, and sensor performance assessments. The data exploitation efforts will identify affordable, responsive, and resilient measures to improve battlespace awareness data dissemination to the warfighter. SMI Architecture and Component Study efforts will assess future architecture alternatives for viability, affordability, capability and resilience. The SMI Hosted Payloads and Wide Field of View Testbeds efforts will explore technology maturation, qualification of new components, and subsystem/component prototyping to evolve the OPIR architecture.

This program is assigned to Budget Activity 5, System Development and Demonstration (SDD), because it funds the development and integration of mature systems, and the test, evaluation, and demonstration of those systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Title: Evolved SBIRS	0.000	8.100	10.658
Description: Assess future parts/material obsolescence and future affordability and capability design modifications.			
FY 2012 Accomplishments:			

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 657009: *Space Modernization Initiative*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Not applicable. ***FY 2013 Plans:*** Conduct a study to identify parts/material obsolescence issues and corresponding hardware/software design modifications to mitigate future production risks for the SBIRS Program of Record GEO Satellites. ***FY 2014 Plans:*** Complete SBIRS GEO obsolescence study. Conduct studies to identify payload, spacecraft, and software modifications to improve affordability of the SBIRS Program of Record GEO Satellites. These affordability studies will address simplifying mechanical systems (e.g., Pointing and Control subsystem); technology insertion (e.g., digital focal planes, micro-processor); A2100 spacecraft fleet stardarization (e.g., Command and Control and Electrical Power components); and Scanner-only design modifications (e.g., remove the Step-Starer Sensor). Initiate a study on simplified sensors to determine affordability and capability impacts across space and ground architectures.			
Title: Data Exploitation ***Description:*** Exploit existing OPIR data (DSP, SBIRS, CHIRP, other classified sources) through data processing, data publication, algorithm development, network connectivity and sensor performance assessments. ***FY 2012 Accomplishments:*** Not applicable. ***FY 2013 Plans:*** Extend data collection and analysis from the on-orbit CHIRP payload. Provide enhanced ground segment capability for command and control, data collection, mission processing, and data product dissemination. ***FY 2014 Plans:*** Continue to collect and analyze CHIRP data, if the sensor is still operating. Provide enhanced ground segment capability for command and control, data collection, mission processing, and data product dissemination.	0.000	21.447	22.515
Title: Architecture Studies ***Description:*** Assess future architecture alternatives for viability, affordability, capability, and resilience. ***FY 2012 Accomplishments:*** Not applicable. ***FY 2013 Plans:***	0.000	9.400	2.316

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 657009: *Space Modernization Initiative*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Conduct architecture and component studies to define spacecraft and payload requirements and performance trade space for disaggregated elements of alternative SBIRS GEO architectures. ***FY 2014 Plans:*** Continue SBIRS GEO alternative architecture and component studies. Conduct architecture study to evaluate impacts of classified HEO host architecture change and evaluate alternative polar strategic missile warning coverage.			
Title: Hosted Payloads ***Description:*** Explore payload technology maturation, qualification of new components, and subsystem/component prototyping to evolve the OPIR architecture. ***FY 2012 Accomplishments:*** Not applicable. ***FY 2013 Plans:*** Continue development of WFOV staring sensors, capabilities, and concepts that could support non-strategic missions that can be hosted or flown on a dedicated small bus. Initiate development of prototype sensors for a 6-degree WFOV payload(s) including evaluation of several sensor design alternatives through Preliminary Design Review (PDR) phase. ***FY 2014 Plans:*** Continue to develop prototype sensors for the next generation of 6-degree WFOV payload(s), emerging with Critical Design Review (CDR) quality designs and preparing for at least one flight demonstration. Initiate development of prototype sensors for a 9-degree WFOV payload(s) including evaluation of several sensor design alternatives through Preliminary Design Review (PDR) phase.	0.000	26.082	29.079
Title: WFOV Testbeds ***Description:*** Explore spacecraft technology maturation, qualification of new components, and subsystem/component prototyping to evolve the OPIR architecture. Explore international, commercial, or other rideshare opportunities for an on-orbit WFOV payload demonstration. ***FY 2012 Accomplishments:*** Not applicable ***FY 2013 Plans:***	0.000	11.557	17.106

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 657009: *Space Modernization Initiative*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Evaluate international partnership rideshare, commercial rideshare, or small free-flyer on orbit demonstrations. Continue concept studies on space vehicle bus capabilities initiated in FY12 under SBIRS EMD program. Initiate development of a small WFOV testbed spacecraft bus to host a 6-degree WFOV payload through Preliminary Design Review (PDR) phase. ***FY 2014 Plans:*** Continue to evaluate international partnership rideshare or commercial rideshare opportunities for a 9-degree WFOV Payload on-orbit demonstration. Continue development of a small WFOV testbed spacecraft bus through Critical Design Review (CDR) phase.			
Title: Management Services ***Description:*** Conduct System Engineering and Program Management to include Program Office support such as Federally Funded Research and Development Center (FFRDC) analyses and System Engineering Technical Assistance. ***FY 2012 Accomplishments:*** Not applicable. ***FY 2013 Plans:*** Provide Program Office support for all SMI projects. ***FY 2014 Plans:*** Provide Program Office support for all SMI projects.	0.000	6.602	3.450
Accomplishments/Planned Programs Subtotals	0.000	83.188	85.124

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: Line Item # 836720: *Space Based Ir Sensor Pgm Space*	49.674	47.135	28.235		28.235	26.332	7.725	7.703	7.842	Continuing	Continuing
• MPAF: BA05: Line Item # MSSBIR: *SBIR High (Space) TOA*	324.889	454.251	583.192		583.192	580.888	537.971	570.759	1,143.014	191.481	8,004.874

Remarks

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 657009: *Space Modernization Initiative*

D. Acquisition Strategy

The program office will use a variety acquisition approaches to execute various concept studies, technology maturation efforts, testbed/prototype demonstrations, and data exploitation initiatives and projects. The program office will collaborate with appropriate contracting agencies to support each individual effort. Activities such as SBIRS GEO obsolescence and affordability enhancements to the existing satellite design will leverage existing Program of Record contracts. Technology maturation and component prototyping and/or qualification could leverage existing contracts, but where practical could be competed. New technology, replacement components and system designs will be acquired with government data rights to a maximum extent to allow their incorporation into any future OPIR satellite production or system development. Contracting partnerships with other agencies will also be used to study, develop and demonstrate and prove emerging capabilities. FFRDC and SETA contractors will also be used to conduct and support studies.

E. Performance Metrics

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 657009: *Space Modernization Initiative*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Evolved SBIRS	TBD	TBD:,	0.000	0.000		8.100	Jul 2013	10.658	Nov 2013	-		10.658	69.473	88.231	88.231
Data Exploitation	Various	Americom Government Services Mclean VA; Northrop Grumman Boulder, CO; Others:,	0.000	0.000		21.447	Nov 2012	22.515	Nov 2013	-		22.515	92.750	136.712	136.712
Architecture and Component Studies	TBD	TBD:,	0.000	0.000		9.400	May 2013	2.316	Nov 2013	-		2.316	0.000	11.716	11.716
Hosted Payloads	TBD	TBD:,	0.000	0.000		26.082	May 2013	29.079	Nov 2013	-		29.079	85.263	140.424	140.424
WFOV Testbeds	MIPR	Millenium Space Systems:Torrance, CA	0.000	0.000		11.557	Dec 2012	17.106	Nov 2013	-		17.106	94.500	123.163	123.163
System Engineering and Integration (SE&I)	TBD	TBD:,	0.000	0.000		0.000		0.000		-		0.000	3.158	3.158	3.158
		Subtotal	0.000	0.000		76.586		81.674		0.000		81.674	345.144	503.404	503.404

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total 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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total 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

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 657009: *Space Modernization Initiative*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Support (FFRDC)	RO	Aerospace Corp:El Segundo, CA	0.000	0.000		1.155	Dec 2012	1.178	Dec 2013	-		1.178	4.953	7.286	7.286
Various Management Support Services (PMA)	Various	Various:,	0.000	0.000		5.447	Oct 2012	2.272	Oct 2013	-		2.272	10.291	18.010	18.010
		Subtotal	0.000	0.000		6.602		3.450		0.000		3.450	15.244	25.296	25.296

	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		83.188		85.124		0.000		85.124	360.388	528.700	528.700

Remarks

Each Cost Category Item with "TBD" or "Various" annotated contains several contract elements with some contracts still TBD.

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 657009: *Space Modernization Initiative*

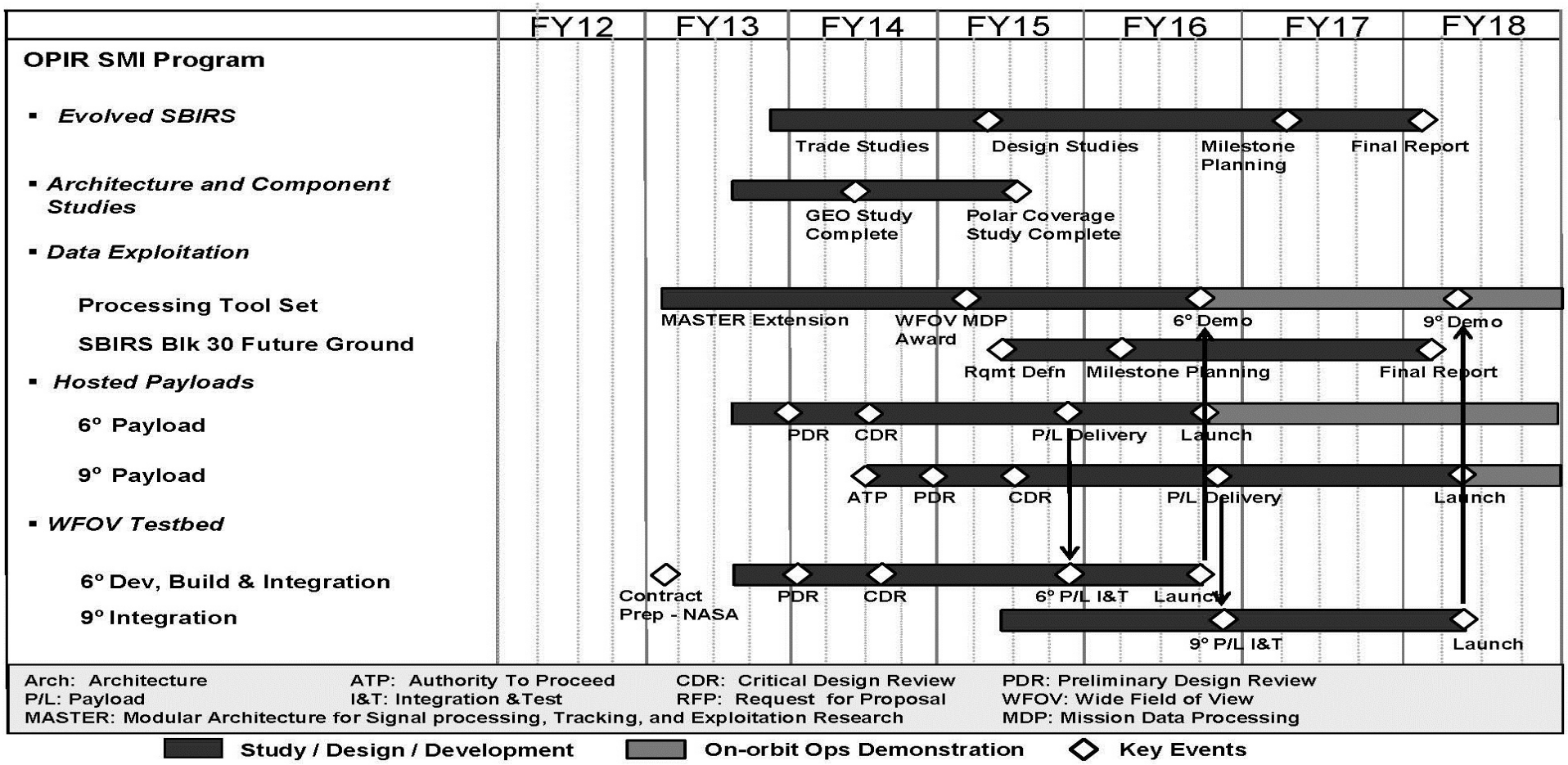

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 657009: *Space Modernization Initiative*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
WFOV Testbeds	3	2013	2	2018
Architecture & Component Studies	3	2013	3	2015
Hosted Payloads Tech Maturation	3	2013	4	2018
OPIR Data Exploitation	1	2013	4	2018
Evolved SBIRS Studies	4	2013	1	2015

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 65A040: *Commercially Hosted Infrared Payload (CHIRP)*	

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
65A040: *Commercially Hosted Infrared Payload (CHIRP)*	22.125	16.518	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	38.643
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 Commercially Hosted Infrared Payload (CHIRP) provided risk reduction and evaluation of WFOV infrared staring and data processing technology to potentially evolve future SBIRS staring sensors and processing algorithms. An on-orbit demonstration quantifed performance levels of a prototype WFOV sensor in an operational environment. CHIRP sensor testing provided Focal Plane Array (FPA) performance/calibration characteristics, assessed WFOV staring algorithm performance in an operational environment, and investigated compatibility with current Overhead Persistent Infrared (OPIR) ground systems for missile warning, missile defense, and other mission areas. CHIRP experience and lessons learned have been incorporated
into plans and objectives for SMI activities, to include the need for further on-orbit performance demonstration, WFOV algorithm development, and ground mission data processing for all OPIR mission areas.

The CHIRP demonstration continued effort begun under Third Generation Infrared Surveillance PE 060443F. CHIRP received FY11 and FY12 funds to continue the Wide-Field-of-View (WFOV) demonstration for technology maturation. Funding was moved to the SBIRS RDT&E Program Element under a separate project number.

This program is assigned to Budget Activity 5, System Development and Demonstration (SDD) because it funds the development and integration of mature systems, and the test, evaluation, and demonstration of those systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Title: CHIRP	16.518	0.000	0.000
Description: Continued contracts for Commercially Hosted Infrared Payload (CHIRP) demonstration and related support activities.			
FY 2012 Accomplishments: Continued development and test of mission data processing and ground infrastructure to mature WFOV algorithms and technologies. Demonstrated CHIRP on-orbit capabilities to include fusion of CHIRP data with other OPIR systems. Collected, archived and analyzed on-orbit data against cooperative targets and continue to mature WFOV algorithms. Continued Program			

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 65A040: *Commercially Hosted Infrared Payload (CHIRP)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Office and related support activities. CHIRP mission demonstration and data analysis/exploitation continuing under SMI Data Exploitation.			
Accomplishments/Planned Programs Subtotals	16.518	0.000	0.000

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
• RDTE: BA05: PE 0604443F: *Third Generation Infrared Surveillance*	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	78.420

Remarks

D. Acquisition Strategy

Risk reduction and evaluation of WFOV infrared staring and data processing technology will be continued via the SMI project BPAC 657009.

E. Performance Metrics

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

Exhibit R-3, RDT&E Project Cost Analysis: PB 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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 65A040: *Commercially Hosted Infrared Payload (CHIRP)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
WFOV IR staring technologies risk reduction activities	Various	*See Remarks:Various,	14.797	10.553	Nov 2011	0.000		0.000		-		0.000	0.000	25.350	21.800
		Subtotal	14.797	10.553		0.000		0.000		0.000		0.000	0.000	25.350	21.800

Remarks

Put all R-3 Remarks in the summary Remark Text Box.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various Program Support	Various	Various:Various,	0.712	0.793	Oct 2011	0.000		0.000		-		0.000	0.000	1.505	1.352
Technical Engineering	C/T&M	Cobham Analytic Solutions:Lake Forest, CA	2.783	2.360	Jan 2012	0.000		0.000		-		0.000	0.000	5.143	5.143
Technical Support (FFRDC)	RO	Aerospace Corp.:El Segundo, CA	3.833	2.812	Nov 2011	0.000		0.000		-		0.000	0.000	6.645	10.348
		Subtotal	7.328	5.965		0.000		0.000		0.000		0.000	0.000	13.293	16.843

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total 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)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total 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

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 65A040: *Commercially Hosted Infrared Payload (CHIRP)*	

	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	22.125	16.518		0.000		0.000		0.000		0.000	0.000	38.643	38.643

Remarks

Performing Activities: System Dynamics Lab (Logan, UT), Americom Government Services (McLean, VA), Northrop Grumman Electronic Systems (Azusa, CA), Science Applications International Corporation (McLean, VA).

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 0604441F: *Space Based Infrared System (SBIRS) High EMD*	PROJECT 65A040: *Commercially Hosted Infrared Payload (CHIRP)*

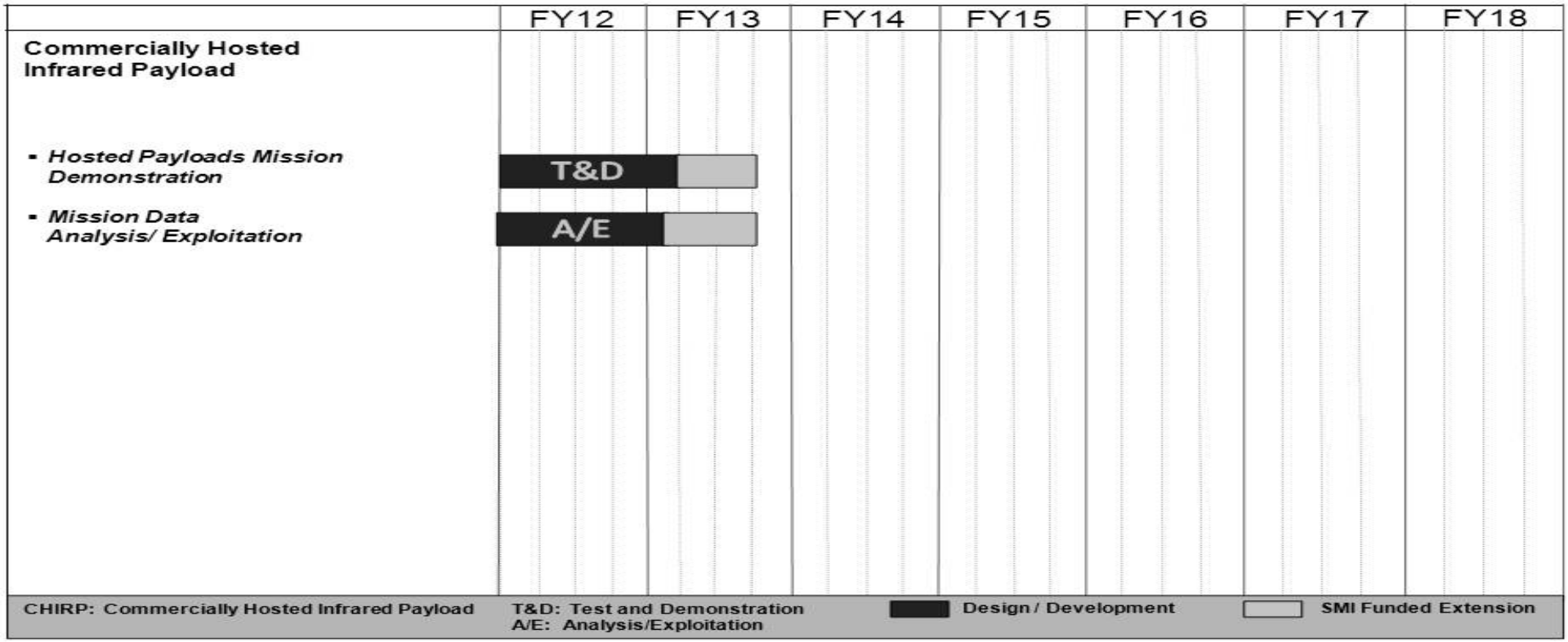

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 5: *System Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604441F: *Space Based Infrared System (SBIRS) High EMD*	**PROJECT** 65A040: *Commercially Hosted Infrared Payload (CHIRP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Mission Data Analysis/Data Exploitation (continued under SMI)	1	2012	4	2013
Hosted Payload Mission Demonstration (continued under SMI)	1	2012	4	2013