Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0305940F: *Space Situational Awareness Operations*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	40.918	31.956	19.586	-	19.586	37.811	33.105	31.782	-	Continuing	Continuing
67A017: *Sensor Service Life Extension Program*	40.918	31.956	19.586	-	19.586	37.811	33.105	31.782	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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. Program Element 0305940F, Space Situational Awareness Operations, fields, upgrades, operates and maintains Air Force sensors and information integration capabilities within the SSA network while companion program element 0604425F, Space Situation Awareness Systems, develops new network sensors and improved information integration capabilities across the network. Activities funded in the SSA Operations program element focus on surveillance of objects in earth orbit to aid tasks including satellite tracking; space object identification; tracking and cataloging; satellite attack warning; notification of satellite flyovers to U.S. forces; space treaty monitoring; and technical intelligence gathering.

The Sensor Service Life Extension Programs (SLEPs)in this program element fund efforts to upgrade and extend the life of operational Space Situation Awareness (SSA) sensors, as needed. These SLEPs include, but are not limited to, programs that extend the serviceable life of assets and maintain critical capability by replacing aging and increasingly unsustainable components with modern equipment. SLEPs may incorporate equipment which inherently includes technological advances resulting in enhanced or increased capabilities. In addition, the SLEP itself may be designed to increase certain capabilities. The current efforts of Eglin, Haystack Ultra-wideband Satellite Imaging Radar (HUSIR), Ground-based Electro Optical Deep Space Surveillance (GEODSS), and Globus II are representative of sensor systems upgraded in the SLEP project. As the need arises in the execution year, funds in this project may be used to begin sensor life extension programs on additional efforts. These efforts are in Budget Activity 7, Operational System Development, because they develop modifications for operational SSA sensors.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305940F: *Space Situational Awareness Operations*

B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	43.838	31.956	20.910	-	20.910
Current President's Budget	40.918	31.956	19.586	-	19.586
Total Adjustments	-2.920	-	-1.324	-	-1.324
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.645	-			
• Other Adjustments	-1.275	-	-1.324	-	-1.324

Change Summary Explanation

FY11: -$1.645M for SBIR
-$1.275M for Congressional General Reductions

FY13: -$1.32M due to reallocation of funding to higher Department priorities.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Eglin SLEP	17.836	9.619	6.158

Description: Extends the operational life of the AN/FPS-85 Radar, located at Eglin AFB, through 2018. Upgrades the hardware and software of the radar system to maintain system performance, operability and sustainment to support USSTRATCOM's Space Surveillance Network (SSN) near earth and deep space metric tracking and space object identification (SOI) missions.

FY 2011 Accomplishments:
Performed integration and testing of the Phase 1 portion of the SLEP - Control and Signal Processor Upgrade (CSPU). Design and development of Phase II, Beam Steering Control Upgrade (BSCU), which replaces radar system components that have become obsolete and are no longer available.

FY 2012 Plans:
Complete Phase 1 of the SLEP-CSPU integration, test, and operational acceptance. Continue BSCU design and development, and begin Phase 2-BSCU production and fielding.

FY 2013 Plans:

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305940F: *Space Situational Awareness Operations*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Will continue BSCU production and fielding and begin BSCU integration and testing.			
Title: HUSIR ***Description:*** Upgrades the Haystack radar's X-band 1 MHz bandwidth system by adding a W-band capability and enhancing imaging resolution to support SSN object characterization and tracking. ***FY 2011 Accomplishments:*** Completed the following post-antenna installation activities: surface panel installation, large crane removal, antenna panel surface alignment, hydrostatic bearing testing, and coarse antenna balancing. Azimuth and elevation antenna rotation and control system testing was begun. ***FY 2012 Plans:*** Will perform analysis and assessment of repair alternatives for the antenna structure that mechanically seized during initial testing. Will continue control system testing and antenna balancing. Will conduct X-Band testing, and initial X-Band operating capability. ***FY 2013 Plans:*** Will commence W-Band testing, verify surface alignment through surface panel holography, will complete W-Band testing and perform W-Band Military Utility Assessment (MUA) which will complete the project.	10.912	1.930	0.050
Title: GEODSS SLEP ***Description:*** Extends the operational life of the Ground Based Electro-Optical Deep Space Surveillance System (GEODSS). Replaces the aging Sensor Controller Group (SCG), Data Processing Group (DPG), and Data Communications Group (DCG) to maintain SSN tracking capabilities for objects in deep space and geosyncronous orbits. ***FY 2011 Accomplishments:*** Awarded the Phase I contract to replace Sensor Controller Group (SCG). ***FY 2012 Plans:*** Will conduct Phase I CDR and purchase developmental hardware for SCG effort. Will conduct code and unit testing. ***FY 2013 Plans:*** Will integrate, assemble, and test SCG equipment of Site 1.	7.937	11.114	3.611
Title: Globus II SLEP ***Description:*** Extends the operational life of the Globus II Radar, located in Vardo, Norway. Replaces aging and unsustainable hardware groups including the transmitter, mission critical computing resources (MCCR), and receiver-exciter (REX) subsystems.	4.233	9.293	9.767

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305940F: *Space Situational Awareness Operations*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
FY 2011 Accomplishments: Awarded Phase I contract to replace the transmitter. Awarded contract for a Phase II MCCR/REX technical assessment. ***FY 2012 Plans:*** Will conduct Phase I System Requirements Review, Preliminary Design Review and Critical Design Review. Will purchase developmental long lead items. ***FY 2013 Plans:*** Will complete in-plant testing, integration, and system assessments. Will begin system testing.			
Accomplishments/Planned Programs Subtotals	40.918	31.956	19.586

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• P-47: *OPAF, PE 0305940F, GEODSS SLEP*	2.236	0.000	3.391	0.000	3.391	0.000	1.152	3.203	0.000	0.000	9.286
• P47: *OPAF, PE 0305940F, Globus II SLEP*	0.000	0.000	0.000	0.000	0.000	0.000	27.327	23.783	0.000	0.000	51.110

E. Acquisition Strategy

The Eglin SLEP effort is replacing key radar items via an option on the System Engineering, Sustainment and Modernization (SENSOR) contract, competitively awarded to ITT Corporation (now Exelis) in 2002. The Air Force uses the SENSOR contract for sustaining and upgrading various Air Force systems, including the Eglin radar.

The Massachusetts Institute of Technology's Lincoln Laboratory (MIT/LL), a non-profit Federally-Funded Research & Development Center, performs the HUSIR effort under a master contract with the Electronic Systems Center, in conjunction with support from other agencies as required. This effort is classified as applied research under that contract. MIT/LL transferred ownership of the radar to the Air Force but continues to operate it as part of its Lincoln Space Surveillance Complex as per contract with the Air Force. MIT/LL will be responsible for operations and sustainment of the upgraded Haystack radar. The upgrade effort is scheduled to complete in FY13.

The GEODSS SLEP was awarded as an option on the System Engineering and Sustainment Integrator (SENSOR) contract, competitively awarded to ITT Corporation (now Exelis) in 2002. The GEODSS SLEP will use a phased development and deployment strategy to reduce risk.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305940F: *Space Situational Awareness Operations*

The Globus II SLEP was awarded as an option on the System Engineering and Sustainment Integrator (SENSOR) contract, competitively awarded to ITT Corporation (now Exelis) in 2002. The Globus II SLEP will use a phased development and deployment strategy to reduce risk.

F. Performance Metrics

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

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305940F: *Space Situational Awareness Operations*	**PROJECT** 67A017: *Sensor Service Life Extension Program*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305940F: *Space Situational Awareness Operations*	**PROJECT** 67A017: *Sensor Service Life Extension Program*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305940F: *Space Situational Awareness Operations*	**PROJECT** 67A017: *Sensor Service Life Extension Program*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305940F: *Space Situational Awareness Operations*	**PROJECT** 67A017: *Sensor Service Life Extension Program*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Eglin Phase II Contract Award	2	2011	2	2011
Eglin Phase I CSPU IOC	3	2012	3	2012
Eglin Phase II PDR	2	2012	2	2012
Eglin Phase II CDR	4	2012	4	2012
Eglin Phase II BSCU IOC	4	2014	4	2014
HUSIR Antenna Complete/X-Band Ops Available	4	2012	1	2013
HUSIR System Acceptance Test	1	2013	3	2013
HUSIR X and W Band Ops	3	2013	3	2013
GEODSS Contract Award	3	2011	3	2011
GEODSS Phase I PDR	1	2012	1	2012
GEODSS Phase I CDR	2	2012	2	2012
GEODSS Phase II Development Contract Award	3	2014	3	2014
Globus II Phase I Contract Award	4	2011	4	2011
Globus II Phase I PDR	2	2012	2	2012
Globus II Phase I CDR	4	2012	4	2012
Globus II Phase II Development Contract Award	2	2014	2	2014