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<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2012 Air Force	<b>DATE:</b> February 2011
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				PE 0305940F: <i>Space Situational Awareness Operations</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	47.823	43.838	31.956	-	31.956	20.910	34.866	31.102	75.121	Continuing	Continuing
67A017: <i>Sensor Service Life Extension Program</i>	47.823	43.838	31.956	-	31.956	20.910	34.866	31.102	75.121	Continuing	Continuing

**Note**

The program funding in this Program Element includes overhead reduction efficiencies that are not intended to impact program content. The efficiencies reductions total \$.440M in FY12.

**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 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 this 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) 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.

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305940F: <i>Space Situational Awareness Operations</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>
Previous President's Budget	54.648	43.838	26.744	-	26.744
Current President's Budget	47.823	43.838	31.956	-	31.956
Total Adjustments	-6.825	-	5.212	-	5.212
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-1.071	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-3.000	-			
• SBIR/STTR Transfer	-2.754	-			
• Other Adjustments	-	-	5.212	-	5.212

**Change Summary Explanation**

FY12: \$5.759 was transferred from procurement (Space Mods Space) to RDTE funding

FY12: -\$0.440 was removed for Air Force efficiencies

FY12: -\$0.107 was removed for OSD inflations

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
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			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
67A017: Sensor Service Life Extension Program	47.823	43.838	31.956	-	31.956	20.910	34.866	31.102	75.121	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. This program element 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 this 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) 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.											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Eglin							18.974	20.295	9.619	-	9.619
Description: Extends the operational life of the AN/FPS-85 Radar, located at Eglin AFB, through 2018 by upgrading the hardware and software of the radar system to improve system operability and sustainment for AFSPC Space Object Identification (SOI) and metric tracking missions.											
FY 2010 Accomplishments: Complete Phase 1 - Control and Signal Processor Upgrade (CSPU) production and fielding. Accomplish CSPU integration and test.											
FY 2011 Plans:											

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force			DATE: February 2011			
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				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete Phase 1 of the SLEP - CSPU integration, test, and operational acceptance. Accomplish design and development of Eglin SLEP Phase II, Beam Steering Control Upgrade (BSCU), which replaces radar system components that have become obsolete and are no longer available.  <b>FY 2012 Base Plans:</b> Continue BSCU design and development, and begin BSCU production and fielding.  <b>FY 2012 OCO Plans:</b>						
<b>Title:</b> HUSIR  <b>Description:</b> Upgrades X-band 1 MHz bandwidth Haystack Radar by adding W-band capability and enhancing imaging resolution.  <b>FY 2010 Accomplishments:</b> Complete connection of sub-assemblies. Perform site preparation. Remove Radome, old antenna and equipment. Reskin the Radome and refurbish equipment to meet HUSIR requirements. Install back structure and assemblies, and perform yoke modifications. Replace the Radome and clean up site.  <b>FY 2011 Plans:</b> Complete installation of radar panels. Perform radar integration. Conduct and complete radar alignment, integration, and acceptance tests.  <b>FY 2012 Base Plans:</b> Complete W-band system integration and testing and trial period. Accept Radar. Upon completion, operations will commence with X and W band.  <b>FY 2012 OCO Plans:</b>		25.509	5.840	1.930	-	1.930
<b>Title:</b> GEODSS  <b>Description:</b> Ground Based Electro-Optical Deep Space Surveillance System (GEODSS) Service Life Extension Program. Replace the aging Sensor Controller Group (SCG), which controls the telescope, mount and camera, and is becoming unsupportable.  <b>FY 2010 Accomplishments:</b>		2.667	12.507	8.518	-	8.518

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011			
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				
B. Accomplishments/Planned Programs (\$ in Millions)								FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Released RFP for Phase I SCG replacement. <b>FY 2011 Plans:</b> Award Phase I contract to replace SCG. Award Phase II Tech Assessment. <b>FY 2012 Base Plans:</b> Conduct Phase I PDR and CDR. Purchase hardware for SCG effort. <b>FY 2012 OCO Plans:</b>												
<b>Title:</b> Globus II <b>Description:</b> Globus II Service Life Extension Program. Replace aging and unsustainable hardware groups including the transmitter, mission critical computing resources (MCCR), and receiver-exciter (REX) to extend the radar system operational life. <b>FY 2010 Accomplishments:</b> Released RFP for Phase 1 - Transmitter replacement. <b>FY 2011 Plans:</b> Award Phase I contract to replace the transmitter. Award Phase 2 MCCR/REX technical assessment. <b>FY 2012 Base Plans:</b> Conduct Phase I PDR and CDR. Purchase hardware for transmitter replacement. <b>FY 2012 OCO Plans:</b>								0.673	5.196	11.889	-	11.889
Accomplishments/Planned Programs Subtotals								47.823	43.838	31.956	-	31.956
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost	
• PE 0305940F: Eglin, Procurement	0.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing	
• PE 0305940F (1): GEODSS , Procurement	0.000	2.248	0.000	0.000	0.000	5.391	0.000	1.659	5.000	Continuing	Continuing	
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	27.327	23.783	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
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				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0305940F (2): Globus II ,Procurement											
D. 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 Industries (now ITT Corporation) in 2002. The Air Force uses the SENSOR contract for sustaining and upgrading various Air Force radars, 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 Electronics System 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 GEODSS SLEP will be awarded as an option on the System Engineering and Sustainment Integrator (SENSOR) contract, competitively awarded to ITT Industries (now ITT Corporation) in 2002. The GEODSS SLEP will use a phased development and deployment strategy to reduce risk.											
The Globus II SLEP will be awarded as an option on the System Engineering and Sustainment Integrator (SENSOR) contract, competitively awarded to ITT Industries (now ITT Corporation) in 2002. The Globus II SLEP will use a phased development and deployment strategy to reduce risk.											
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 2012 Air Force										DATE: February 2011			
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					
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Eglin architecture development and life extension	C/CPAF	ITT Corporation:Colorado Springs, CO	48.745	16.513	Jun 2011	7.000	Oct 2011	-		7.000	Continuing	Continuing	0.000
HUSIR design and build	SS/TBD	MIT Lincoln Laboratory:Lexington, MA	59.577	4.409	Oct 2010	0.918	Oct 2011	-		0.918	Continuing	Continuing	0.000
GEODSS design, development and life extension	C/CPIF	ITT Corporation:Colorado Springs, CO	-	10.725	Jun 2011	6.544	Jan 2012	-		6.544	Continuing	Continuing	0.000
Globus II development and life extension	C/CPIF	ITT Corporation:Colorado Springs, CO	-	4.470	Jun 2011	9.964	Sep 2012	-		9.964	Continuing	Continuing	0.000
Subtotal			108.322	36.117		24.426		-		24.426			0.000
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development review and management/L3	C/TBD	L3 Engility:Billerica, MA	1.335	-		-		-		-	Continuing	Continuing	0.000
Development review and management/PASS	C/TBD	Odyssey Systems:Wakefield, MA	3.367	1.272	Feb 2011	1.240	Feb 2012	-		1.240	Continuing	Continuing	0.000
Technical review and management/ETASS	C/TBD	Jacobs Technology:Tullahoma, TN	3.770	1.607	Jan 2011	1.660	Jan 2012	-		1.660	Continuing	Continuing	0.000
Program Office Support	Various	Electronic Systems Center:AFB:Hanscom MA,PetersonCO,	13.258	3.963	Nov 2010	3.642	Nov 2011	-		3.642	Continuing	Continuing	0.000
Specialized Cost Services	C/TBD	Tecolote:AFB:HanscomMA,PetersonCO,	0.570	0.523	Oct 2010	0.521	Oct 2011	-		0.521	0.000	1.416	0.000
Subtotal			22.102	7.365		7.063		-		7.063			0.000

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2012 Air Force											<b>DATE:</b> February 2011		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0305940F: <i>Space Situational Awareness Operations</i>				<b>PROJECT</b> 67A017: <i>Sensor Service Life Extension Program</i>					

  

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Test Support	Various	17th Test SQ:SAFB, CO	0.133	0.356	Jan 2011	0.467	Jan 2012	-		0.467	Continuing	Continuing	TBD
<b>Subtotal</b>			0.133	0.356		0.467		-		0.467			

  

<b>Management Services (\$ in Millions)</b>				<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Subtotal</b>			-	-		-		-		-	0.000	0.000	0.000

  

	<b>Total Prior Years Cost</b>	<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	130.557	43.838		31.956		-		31.956			

  

**Remarks**

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
3600: Research, Development, Test & Evaluation, Air Force	PE 0305940F: Space Situational Awareness	67A017: Sensor Service Life Extension
BA 7: Operational Systems Development	Operations	Program

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
3600: Research, Development, Test & Evaluation, Air Force	PE 0305940F: Space Situational Awareness	67A017: Sensor Service Life Extension
BA 7: Operational Systems Development	Operations	Program

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
3600: Research, Development, Test & Evaluation, Air Force	PE 0305940F: Space Situational Awareness	67A017: Sensor Service Life Extension
BA 7: Operational Systems Development	Operations	Program

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2012 Air Force			<b>DATE:</b> February 2011
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0305940F: <i>Space Situational Awareness Operations</i>	<b>PROJECT</b> 67A017: <i>Sensor Service Life Extension Program</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Eglin Phase II PDR	2	2012	2	2012
Eglin Phase II CDR	3	2012	3	2012
Eglin Phase I CSPU IOC	3	2011	3	2011
Eglin Phase II BSCU IOC	3	2012	3	2012
HUSIR Installation Readiness Review	3	2010	3	2010
HUSIR Uncap Radome	3	2010	3	2010
HUSIR Antenna Complete/X-Band Ops Available	4	2011	4	2011
HUSIR Test	3	2011	1	2012
HUSIR X and W Band Ops	2	2012	2	2012
GEODSS Contract Awards	3	2011	3	2011
GEODSS Phase I PDR	1	2012	1	2012
GEODSS Phase I CDR	3	2012	3	2012
GEODSS Phase II Development Contract Award	1	2013	1	2013
Globus II Phase I Contract Award	4	2011	4	2011
Globus II Phase I PDR	4	2013	4	2013
Globus II Phase I CDR	2	2014	2	2014
Globus II Phase II Development Contract Award	1	2013	1	2013

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