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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				PE 0308699F: <i>Shared Early Warning System</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	2.957	2.952	1.663	-	1.663	1.188	1.182	1.190	1.216	Continuing	Continuing
674838: <i>Shared Early Warning System</i>	2.957	2.952	1.663	-	1.663	1.188	1.182	1.190	1.216	Continuing	Continuing

Note

The program funding includes reductions for Fourth Estate Baseline Review efficiencies that are not intended to impact program content. The efficiencies reductions total \$10k in FY12.

A. Mission Description and Budget Item Justification

The Shared Early Warning System (SEWS) is the result of Presidential foreign policy initiatives beginning in 1996. The SEWS continues to provide Theater Combatant Commanders and foreign nation partners direct operational benefit by improving the architectural design and equipment thereby providing enhanced mission capabilities (i.e., expanding coverage, integration with active defense systems, and radar integration). Foreign partner arrangements are negotiated with individual countries on a bilateral basis to provide selected region-specific missile warning information. To enhance mission capability the SEWS program tests: the Integrated Broadcast Service (IBS) migration to Common Interactive Broadcast (CIB), mandatory crypto upgrades, SEWS integration with various radar systems, and the transition to "coalition-based" warning. SEWS utilizes Federally Funded Research and Development Centers (FFRDC), Engineering and Technology Acquisition Support Services (ETASS), and Advisory and Assistance Services (A&AS) contractors to support design, development, and acquisition of a common SEWS architecture to enhance mission capability of existing and future partners; enhance development of a multi-lingual, web-based infrastructure to provide Pre-Launch Notification System (PLNS) information; site preparation for additional systems, as required, and posture for the design, development, and test of a Joint Data Exchange Center (JDEC)-like capability with Russia. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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3600: Research, Development, Test & Evaluation, Air Force		PE 0308699F: Shared Early Warning System				
BA 7: Operational Systems Development						
B. Program Change Summary (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget		3.047	2.952	1.679	-	1.679
Current President's Budget		2.957	2.952	1.663	-	1.663
Total Adjustments		-0.090	-	-0.016	-	-0.016
• Congressional General Reductions			-			
• Congressional Directed Reductions			-			
• Congressional Rescissions		-0.013	-			
• Congressional Adds			-			
• Congressional Directed Transfers			-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-0.077	-			
• Other Adjustments		-	-	-0.016	-	-0.016

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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 0308699F: Shared Early Warning System				PROJECT 674838: Shared Early Warning System			
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
674838: Shared Early Warning System	2.957	2.952	1.663	-	1.663	1.188	1.182	1.190	1.216	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Shared Early Warning System (SEWS) is the result of Presidential foreign policy initiatives beginning in 1996. The SEWS continues to provide Theater Combatant Commanders and foreign nation partners direct operational benefit by improving the architectural design and equipment thereby providing enhanced mission capabilities (i.e., expanding coverage, integration with active defense systems, and radar integration). Foreign partner arrangements are negotiated with individual countries on a bilateral basis to provide selected region-specific missile warning information. To enhance mission capability the SEWS program tests: the Integrated Broadcast Service (IBS) migration to Common Interactive Broadcast (CIB), mandatory crypto upgrades, SEWS integration with various radar systems, and the transition to "coalition-based" warning. SEWS utilizes Federally Funded Research and Development Centers (FFRDC), Engineering and Technology Acquisition Support Services (ETASS), and Advisory and Assistance Services (A&AS) contractors to support design, development, and acquisition of a common SEWS architecture to enhance mission capability of existing and future partners; enhance development of a multi-lingual, web-based infrastructure to provide Pre-Launch Notification System (PLNS) information; site preparation for additional systems, as required, and posture for the design, development, and test of a Joint Data Exchange Center (JDEC)-like capability with Russia. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development, because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

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

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Shared Early Warning System	2.957	2.952	1.663	-	1.663
Description: Development of SEWS common architecture and SEWS initiatives as identified by theater commanders.					
FY 2010 Accomplishments: Investigated a number of potential system and infrastructure improvements, including continuing the Network Time Protocol (NTP) server investigation along with Global Command & Control System-Joint (GCCS-J) Integrated Command, Control, Communications, Computers and Intelligence (C4I) System Framework (ICSF) client and Clear-Cube-type blade PC evaluations. Investigated how to employ the results of Broadband Global Area Network/Voice over IP (BGAN/VoIP) enhancement studies while completing the BGAN multicasting study					

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B. Accomplishments/Planned Programs (\$ in Millions)				FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
and the Iridium Evaluation. Evaluated the utility of various bilateral partner networks along with Exercise and Operational Communications (XOCOMM) as a data source. Completed several enhancements to existing Radiant Mercury cross-domain solutions capabilities. Increased Integrated Space Command and Control Systems Enginnering (ISC2 SE) support and GCCS support to SEW system development, especially for data formats and Interface Control Document (ICD) development. Continued to posture for possible deployment of the JDEC system in Moscow and development of a multi-lingual, web-based infrastructure to provide PLNS information. FY 2011 Plans: Continue to investigate and integrate a number of significant external system upgrades, to include changes from the IBS broadcast to CIB, tactical radio replacement using Universal Serial Bus (USB) Embedded National Tactical Radio (ENTR) radios, and transition to the CIB Common Message Format. Complete the development and demonstration of the previously prototyped remote data and Process ID (PID) monitoring capabilities for GCCS 4.1.1.2. Begin a study of how to integrate SEW-Space (SEW-S) and SEW-Radar (SEW-R) data. Investigate alternative covariance matrix solutions. Develop a Deployable SEW Suite (DSS) prototype. Evaluate alternatives to the aging Bisynchronous Serial Tunneling (BSTUN) protocol currently used by SEWS. Continue to develop enhancements to the Radiant Mercury Cross Domain Solution (CDS) software. Continue to develop an alternative secondary notification capability solution for Combatant Command (COCOM) use. Continue to support all phases of the test process and increase ISC2 systems engineering support and GCCS R&D support to SEW system development. Stay postured for implementation of SEW capability with Russia (e.g., JDEC-like and/or PLNS-like projects). FY 2012 Base Plans: Will continue to investigate and integrate a number of significant external system upgrades. Will continue to evaluate alternative covariance matrix solutions as well as approaches for integrated SEW-S/SEW-R architectures. Will test and integrate the CIB/Integrated Waveform upgrade for the USB ENTR Block 2. Will begin development of the Remote Data Monitoring Administration (RDMA) capability for GCCS 4.2. Will test and incorporate the Variable Length Message Format (VLTF) in support of SEW-R integration efforts. Will continue to develop and implement an alternative secondary notification capability solution for Combatant Command (COCOM) use. Will engineer, test, and integrate Air Defense System Integrator (ADSI) data output into GCCS-J 4.1.1.2 to support future SEW-R. Will begin studying and testing the Joint Command and Control (JC2) terminal which will replace GCCS-J as early as 2013. Will evaluate the feasibility of including the Air and Missile Defense Operational Testing Suite (AMDOTS) Remote Monitoring Unit's (RMU) into the SEWS Lab--CAVE and								

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<u>B. Accomplishments/Planned Programs (\$ in Millions)</u>	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Centralized Distribution Facility (CDF) for SEWS data analysis and archival. Will continue to support all phases of the test and systems engineering processes. Will stay postured for implementation of SEW capability with Russia (e.g., JDEC-like and/or PLNS-like projects).					
<i>FY 2012 OCO Plans:</i>					
Accomplishments/Planned Programs Subtotals	2.957	2.952	1.663	-	1.663

<u>C. Other Program Funding Summary (\$ in Millions)</u>											
<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• OPAF: <i>PE 0308699F, Comm Elect Mods</i>	0.238	0.312	0.313	0.000	0.313	0.322	0.328	0.332	0.338	Continuing	Continuing

<u>D. Acquisition Strategy</u>
The acquisition strategy builds on existing capabilities using evolutionary acquisition to modernize and sustain SEWS.

<u>E. Performance Metrics</u>
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				R-1 ITEM NOMENCLATURE				PROJECT					
3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				PE 0308699F: Shared Early Warning System				674838: Shared Early Warning System					
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
System Development	C/CPFF	Lockheed Martin:Colorado Springs, CO	17.597	1.337	Oct 2010	0.734	Oct 2011	-		0.734	Continuing	Continuing	TBD
Integration & Modernization	MIPR	US Navy:San Diego, CA	2.404	0.714	Feb 2011	0.191	Feb 2012	-		0.191	Continuing	Continuing	TBD
Product Development	MIPR	Various:Colorado Springs, CO	6.736	0.293	Jan 2011	0.558	Jan 2012	-		0.558	Continuing	Continuing	TBD
Subtotal			26.737	2.344		1.483		-		1.483			
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
Systems Engineering	SS/CPFF	MITRE:Colorado Springs, CO	4.271	0.160	Oct 2010	-		-		-	Continuing	Continuing	TBD
Advisory & Assistance Services (A&AS)	C/TBD	ETASS:Colorado Springs, CO	7.426	0.326	Jan 2011	0.089	Jan 2012	-		0.089	Continuing	Continuing	TBD
Program Management	C/Various	AFMC/ESC:Colorado Springs, CO	1.445	0.122	Oct 2010	0.091	Oct 2011	-		0.091	Continuing	Continuing	TBD
Subtotal			13.142	0.608		0.180		-		0.180			
Test and Evaluation (\$ 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
Subtotal			-	-		-		-		-	0.000	0.000	0.000

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Management Services (\$ 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
Subtotal			-	-		-		-		-	0.000	0.000	0.000

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.879	2.952		1.663		-		1.663			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0308699F: <i>Shared Early Warning System</i>	PROJECT 674838: <i>Shared Early Warning System</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Common Interactive Broadcast 1	1	2010	2	2016
Remote Data Monitoring Admin	1	2010	3	2015
SEWS-S/SEWS-R Integration Study/Test	4	2010	4	2016
Secondary Notifications Capability	1	2011	4	2016
ADSI data GCCS Integration	4	2011	4	2013
Joint Command & Control	3	2012	4	2016
HEO/GEO Exploitation	3	2012	4	2016