

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				PE 0303140F: <i>Information Systems Security Program</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	161.509	140.017	101.788	-	101.788	82.372	72.547	69.073	84.318	Continuing	Continuing
674861: <i>EKMS (Electronic Key Management System)</i>	3.535	2.540	1.777	-	1.777	2.029	2.059	0.599	0.637	Continuing	Continuing
675100: <i>Cryptographic Modernization</i>	131.928	118.787	77.518	-	77.518	63.366	58.864	54.877	69.775	Continuing	Continuing
675231: <i>AF Key Management Infrastructure (AF KMI)</i>	12.127	15.369	16.471	-	16.471	10.697	5.186	7.093	7.134	Continuing	Continuing
677820: <i>Computer Security RDT&E: Firestarter</i>	13.919	3.321	6.022	-	6.022	6.280	6.438	6.504	6.772	Continuing	Continuing

Note

The program funding includes reductions for CENTCOM Fourth Estate Baseline Review efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.455M in FY12.

The program funding includes reductions for Reports, Studies, Boards and Commissions Review efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.572M in FY12.

The program funding includes reductions for Reducing Reliance of DoD Services Support Contractors efficiencies that are not intended to impact program content. The efficiencies reductions total \$0.012M in FY12.

A. Mission Description and Budget Item Justification

The overall focus of the RDT&E efforts within this program is two-fold. Focus one is to provide the capability to protect and defend USAF Command, Control, Communications, Computers, and Intelligence, Surveillance, and Reconnaissance (C4ISR) and Weapon Systems from Information Warfare (IW) attacks and to ensure their recovery from such attacks. To this end, the project does research and development of information protection tools and transitions them to operational systems. Focus two is transforming electronic key delivery and DoD cryptographic devices to meet the next generation warfighting requirements. This includes: 1) a totally "man-out-of-the-loop" electronic crypto key distribution system -- from the actual generation of the key in the Key Processor all the way into the using End Crypto Unit (ECU) -- thus eliminating the current key vulnerability to compromise by individuals transporting or loading the key; and 2) an inventory of cryptographic devices that requires less quantities since they are more robust, stronger, able to communicate extremely large amounts of data at greatly increased data rates, be upgraded more easily and less expensively, and are net-centric and Global Information Grid-compatible. 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.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force				DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE					
3600: Research, Development, Test & Evaluation, Air Force		PE 0303140F: Information Systems Security Program					
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		165.401	140.017	117.844	-	117.844	
Current President's Budget		161.509	140.017	101.788	-	101.788	
Total Adjustments		-3.892	-	-16.056	-	-16.056	
• Congressional General Reductions			-				
• Congressional Directed Reductions			-				
• Congressional Rescissions		-	-				
• Congressional Adds			-				
• Congressional Directed Transfers			-				
• Reprogrammings		-3.892	-				
• SBIR/STTR Transfer		-	-				
• Other Adjustments		-	-	-16.056	-	-16.056	
Congressional Add Details (\$ in Millions, and Includes General Reductions)							
Project: 677820: Computer Security RDT&E: Firestarter							
Congressional Add: Remote Suspect Identification							
						FY 2010	FY 2011
						2.531	-
Congressional Add Subtotals for Project: 677820						2.531	-
Congressional Add Totals for all Projects						2.531	-
Change Summary Explanation							
\$1.039M reduction in FY12 to support AF efficiencies							
\$15.02M reduction in FY12 for other AF priorities							

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program				PROJECT 674861: EKMS (Electronic Key Management 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
674861: EKMS (Electronic Key Management System)	3.535	2.540	1.777	-	1.777	2.029	2.059	0.599	0.637	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force Electronic Key Management System (AFEKMS) Program consists of multiple developments supporting the Air Force requirements portion of the DoD EKMS Program. (The National Security Agency [NSA] acts as the Executive Agency for the DoD EKMS Program.) AFEKMS, in concert with the overarching DoD EKMS Program, provides a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material, voice callwords, and communications security (COMSEC) publications for the current generation of DoD Command, Control, Communications, Computers, and Intelligence (C4I) and for current generation of weapon systems. DoD EKMS replaced the previous manual distribution and management system providing cryptographic keying material for U.S. DoD Information Assurance. Information Assurance emphasizes confidentiality, access control, multi-level secure databases, trusted computing and information integrity. DoD EKMS has a three-tier hierarchical structure. This tiered structure provides capability to distribute, manage and account for COMSEC keying material. Tier 1 installations comprise the key material general and control capability. Tier 2 installations comprise the local distribution network (COMSEC accounts) and Tier 3 is where keying material is transferred from the EKMS infrastructure to the consumers End Cryptographic Units (ECUs).

EKMS improved protection of national security-related information by substantially enhancing confidentiality, integrity, and non-repudiation characteristics over the legacy manual key management systems. EKMS has and continues to greatly accelerate availability of crypto key materials through electronic transmission through Public Switched Telephone Network (PSTN) versus the manual handling and shipping of materials. While the current EKMS level-of-effort is directed at enhancing current and developing systems, the ultimate goal is for it to seamlessly transition to the net-centric DoD Key Management Infrastructure (KMI), currently scheduled to begin in FY2012. The AFEKMS Program continues to provide software development to support emerging requirements during the KMI transition period.

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.

NOTE: Software development (e.g., Data Management Device - DMD, Common User Application Software - CUAS, and Simple Key Loader - SKL) is rolled up into Tier 2/Tier 3 Development. Software upgrades are able to be bundled and tracked as a unit, thereby allowing less management overhead and more focus on configuration management and control.

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

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Systems Engineering	0.230	-	-	-	-
Description: Support AFEKMS Program for planning and migration to Key Management Infrastructure (KMI).					

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program		PROJECT 674861: EKMS (Electronic Key Management System)			
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Continued program office contract support to the AFEKMS Program for planning and migration to KMI. Provided support to develop a technical solution to maintain EKMS data synchronization while transitioning to KMI. Successfully tested and fielded the EKMS Tier 1 Maintenance Release 3. Evaluated the Phase V software suite and started the initial fielding for EKMS Phase V.							
FY 2011 Plans:							
FY 2012 Base Plans:							
FY 2012 OCO Plans:							
Title: Tier 2/Tier 3 Development Description: Tier 2 (base COMSEC account)/Tier 3 (key material field devices) development for emerging requirements.			3.196	2.334	1.600	-	1.600
FY 2010 Accomplishments: Continued software development for Tier 2/Tier 3 Components (e.g. CUAS and DMD) to ensure emerging requirements identified in FY 10 as well as those requirements due in FY 11 meet operational timelines.							
FY 2011 Plans: Software incorporated into the next software release for Tier 2/Tier 3 cryptographic devices are Development for Tier 2/Tier 3 Components (e.g., CUAS and DMD). Software incorporated into the next software release for Tier 2/Tier 3 cryptographic devices are Development for EKMS continues to ensure emerging requirements identified in FY 10 as well as those requirements due in FY 11 meet operational timelines.							
FY 2012 Base Plans: Software development for Tier 2/Tier 3 EKMS cryptographic devices continues in order to deliver software enhancements for AF Systems emerging requirements identified in FY 11 and requirements due in FY 12. These components require software upgrades until such time as KMI is capable of providing support to the respective operational communities.							
FY 2012 OCO Plans:							
Title: Fill/Load Device Description: Fill/Load Device Post Production Software Development			0.109	0.206	0.177	-	0.177

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: 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 0303140F: <i>Information Systems Security Program</i>		PROJECT 674861: <i>EKMS (Electronic Key Management System)</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<i>FY 2010 Accomplishments:</i> Developed, Tested and Evaluated new Simple Key Loader User Application Software. Developed SKL load profiles to enable new End Crypto Units the abilities to be loaded using the SKL.					
<i>FY 2011 Plans:</i> Develop, Test and Evaluate new Simple Key Loader User Application Software. Develop SKL load profiles to enable new End Crypto Units the abilities to be loaded using the SKL.					
<i>FY 2012 Base Plans:</i> Develop, Test and Evaluate new Simple Key Loader User Application Software. Develop SKL load profiles to enable new End Crypto Units the abilities to be loaded using the SKL.					
<i>FY 2012 OCO Plans:</i>					
Accomplishments/Planned Programs Subtotals	3.535	2.540	1.777	-	1.777

C. Other Program Funding Summary (\$ in Millions)											
<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>
• PE 0303140F: <i>Information Systems Security Program, OPAF</i>	20.729	8.958	11.485	0.000	11.485	3.738	4.763	2.602	1.549	Continuing	Continuing

D. Acquisition Strategy
All major contracts within this Project are open to full and open competition with technology knowledge, expertise, and prior experience on similar projects weighted heavily in the evaluation process.

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.

UNCLASSIFIED

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 0303140F: Information Systems Security Program				PROJECT 674861: EKMS (Electronic Key Management 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	
AFEKMS Program Office contractor support for planning and migration to KMI	SS/TBD	MITRE:San Antonio, TX	6.116	-		-		-		-	Continuing	Continuing	TBD	
Tier 2/3 software development	Various	Various:,	10.132	2.334	Jan 2011	1.600	Jan 2012	-		1.600	Continuing	Continuing	TBD	
Fill/Load Device Post Production Software Development	C/TBD	Mantech Sensor Technologies, Inc.:Red Bank, NY	0.109	0.206	Mar 2011	0.177	Mar 2012	-		0.177	Continuing	Continuing	TBD	
Subtotal			16.357	2.540		1.777		-		1.777				
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	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
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	
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			16.357	2.540		1.777		-		1.777				

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: 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 0303140F: <i>Information Systems Security Program</i>			PROJECT 674861: <i>EKMS (Electronic Key Management System)</i>			
	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks									

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: 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 0303140F: Information Systems Security Program	PROJECT 674861: EKMS (Electronic Key Management System)
Empty content area for the table		

UNCLASSIFIED

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 0303140F: <i>Information Systems Security Program</i>	PROJECT 674861: <i>EKMS (Electronic Key Management System)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AFEKMS Program office contractor support for planning and migration to KMI	1	2010	4	2010
Tier 2/3 S/W development and updates	1	2010	4	2014
Fill/Load Device Post Production SW Development	3	2011	4	2016

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program				PROJECT 675100: Cryptographic Modernization			
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
675100: Cryptographic Modernization	131.928	118.787	77.518	-	77.518	63.366	58.864	54.877	69.775	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Cryptographic Modernization Program modernizes cryptographic devices protecting critical information across the cyber domain operations and national security. In September 2000, the Defense Review Board (DRB) tasked NSA to evaluate the security posture of the cryptographic inventory. Systems with aging algorithms, those approaching non-sustainability, and those generally incompatible with modern key management systems were identified. Priority systems that required immediate replacement were also identified. In addition, NSA documented the need to modernize the cryptographic inventory with capabilities designed to enable network-centric operations. Replacements/Modernization of the near term vulnerable systems must occur within the timeframe specified in Chairman Joint Chiefs of Staff Notice (CJCSN) 6510. The DoD Cryptographic Modernization Program was established to develop a modern cryptographic base that provides assured security robustness, interoperability, advanced algorithms, releasability, programmability, and compatibility with the future Key Management Infrastructure (KMI). The program supports an integrated effort across the cyber domain to transform to next generation cryptographic capabilities providing U.S. forces and multinational and interagency partners the security needed to protect the flow and exchange of operational decision making information IAW national and international policy/standards, the validated operational requirements of the warfighters, and the Intelligence Communities.

The Cryptographic Modernization Program is a collection of projects accomplished in three phases: Replacement, Modernization, and Transformation. The Replacement Phase of the program focused on updating and/or replacing out-of-date algorithms along with unsustainable cryptographic products. The Modernization Phase provides common solutions to existing multiple cryptographic end items, as well as updating mid-term aging/unsupportable crypto equipment. Manpower and logistics requirements will be reduced and manpower efficiencies gained, while incremental capability enhancements and footprint reduction are provided. The third phase of the Cryptographic Modernization Program, Transformation, provides common joint solutions which enable secure transparent network-centric capabilities across the cyber domain. 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: KG-3X	7.570	1.104	-	-	-
Description: KG-3X Develops and acquires Cryptographic Modernization (CM) to replace the aging cryptographic capability for the KG-30 CLOCK START system, part of the Nuclear Command and Control, Minimum Essential Emergency Communications Network.					

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program		PROJECT 675100: Cryptographic Modernization	
B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments: Continued KG-3X CM development and test efforts of replacement crypto devices. Includes two new cryptographic devices and a software upgrade package for an existing device.					
FY 2011 Plans: Complete KG-3X CM development and test efforts of replacement crypto devices.					
FY 2012 Base Plans:					
FY 2012 OCO Plans:					
Title: Remote Rekey (RRK)					
Description: Remote ReKey program will develop, acquire and install replacement of the CI-13 cryptographic system at remote and/unmanned NORAD surveillance sites. Modernized system complements Identification Friend or Foe (IFF) Mode 5 system upgrade and will distribute cryptographic keys for 23 different End-Crypto-Units that are net ready and compatible across multiple communication paths.					
FY 2010 Accomplishments: Continued development and initiate test efforts of replacement cryptographic system.					
FY 2011 Plans: Complete development and test efforts of replacement cryptographic system.					
FY 2012 Base Plans:					
FY 2012 OCO Plans:					
Title: Combat Key Generator (CKG)					
Description: Develop Combat Key Generator (CKG) (KOK-23), a modernized replacement for KOK-13/ KOK-13A. The CKG will generate cryptographic keys that enable high speed battlefield communications for warfighter integration of battlefield systems and data exchange.					
FY 2010 Accomplishments: Completed development and test efforts, initiated production of ten Low Rate Initial Production (LRIP) units (to be delivered in FY11).					
FY 2011 Plans:					

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program		PROJECT 675100: Cryptographic Modernization			
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2012 Base Plans:							
FY 2012 OCO Plans:							
Title: VINSON/ANDVT Cryptographic Modernization (VACM) Description: VINSON/ANDVT Cryptographic Modernization (VACM) will develop and acquire cryptographic capability to replace the legacy capability on VINSON/ANDVT secure voice communications on aircraft, ships, and ground fixed and mobile platforms (Devices: KY-57/58, KY-99/100, KYV-5 and ARC-234 with VACM embedded). FY 2010 Accomplishments: Received Milestone B approval. Awarded software and hardware development contract. Initiated development and ARC 234 Crypto modification effort. FY 2011 Plans: Continue software and hardware development leading to System Requirements Review (SRR), Preliminary Design Reviews, and continue ARC 234 (VACM-Embedded) development. FY 2012 Base Plans: Continue development and initiate testing and test production representative engineering models, perform NSA certification testing and developmental testing. FY 2012 OCO Plans:			8.478	27.645	28.242	-	28.242
Title: Space Mission Data (SMD) Description: Space Mission Data (SMD) will develop and acquire modernized cryptographic devices to secure Intelligence, Surveillance, and Reconnaissance sensor downlink data for all future DoD satellites. FY 2010 Accomplishments: Completed source selection and initiated SMD (KG-88) development for space and ground devices. FY 2011 Plans: Continue SMD (KG-88) development through Preliminary Design Review. FY 2012 Base Plans:			6.111	18.990	23.690	-	23.690

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program	PROJECT 675100: Cryptographic Modernization				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue KG-88 development through Critical Design Review. Begin Qualification Testing.						
FY 2012 OCO Plans:						
Title: Space Telemetry Tracking & Commanding (TT&C)		29.437	17.642	9.989	-	9.989
Description: Space Telemetry Tracking & Commanding (TT&C) develops and acquires appropriate upgraded, modernized cryptographic devices to secure Tracking Telemetry & Communication functions for all future DoD satellites.						
FY 2010 Accomplishments: Continued Space Telemetry Tracking & Commanding (TT&C) (Aerospace Vehicle Equipment Increment One [AVE I1] [KG-327/327A], completed delta Preliminary Design Review and delivered 3 Engineering Development Models. Continued Ground Operating Equipment Increment One [GOE I1] [KS -252 and GOE-252] development). Accomplished KS-252 Operational Assessment. Continued Space TT&C AVE I2 and GOE I2 (Space Modular) pre-MS B activities.						
FY 2011 Plans: Complete Space TT&C AVE I1 (KG-327/327A) development, conduct Critical Design Review and Functional/ Physical Configuration Audits, achieve NSA Certification and Milestone C. Complete GOE I1 (KS -252) development. Continue Space TT&C AVE I2 and GOE I2 (Space Modular) pre-MS B activities.						
FY 2012 Base Plans: Accomplish Space TT&C AVE I2 and GOE I2(Space Modular Common Crypto) MS B and enter development phase and initiate directed algorithm modifications activities.						
FY 2012 OCO Plans:						
Title: F-22 multifunction Crypto		11.012	0.200	0.204	-	0.204
Description: Partner with F-22 SPO to upgrade/modernize the KOV-20 and develop and deliver a multi function crypto (KOV-50). The KOV-50 will replace the KOV-20 crypto device.						
FY 2010 Accomplishments: Completed concept refinement to satisfy updated information assurance security requirements from NSA and HQ Air Combat Command. Initiated development leading to Preliminary Design in Aug 2010.						
FY 2011 Plans:						

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program		PROJECT 675100: Cryptographic Modernization				
B. Accomplishments/Planned Programs (\$ in Millions)				FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue updating KOV-50 devices. Develop and initiate testing of the KOV-50 leading to Critical Design Reviews for Software and Hardware. FY 2012 Base Plans: Conduct Independent Validation and Verification of design, and deliver production version of the KOV-50 for qualification and flight testing. FY 2012 OCO Plans:								
Title: CONCEPT REFINEMENT Description: Concept Refinement investigates and refines solutions to meet emerging warfighter requirements. Includes: CM Engineering support, Dynamic Group Keying (DGK), Multi Level Security (MLS), and studies. FY 2010 Accomplishments: Funded core engineering support to the Crypto Modernization portfolio, Dynamic Group Key (DGK) standards development to support SUAS and airborne community. Continued One Box One Wire Joint Capability Technology Demonstration (JCTD) risk reduction and smaller Multi-level Security (MLS) assessment/toolset efforts. Initiated MLS Deployment Enablers effort collaboration with Air Force Research Laboratory [AFRL] and MLS Multi-Port Cryptographic Prototype effort. FY 2011 Plans: Complete development and testing of SMDLL. Continue collaborative AFRL effort for MLS Deployment Enablers. Deliver DGK capabilities and fund core engineering support to the Crypto Modernization portfolio. Continue HADDL Type 1 concept refinement and initiate MLS Real-Time Operating System (RTOS) Graphics Controller effort. FY 2012 Base Plans: Fund core engineering support to the Crypto Modernization portfolio, focusing effort on projects such as MLS Deployment Enablers, MLS Trusted Labeling Interoperability Standard, RTOS Graphic Controller, DGK certification, Advanced Message-Oriented Data Security Module (AMODSM), and Missile Electronic Encryption Device (MEED) study efforts. FY 2012 OCO Plans:				24.427	6.566	3.303	-	3.303
Title: TECHNICAL DEVELOPMENT				16.454	31.518	12.090	-	12.090

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program			PROJECT 675100: Cryptographic Modernization				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: Technology Development plans and executes technology maturation and initiates developmental programs to meet emerging and existing warfighter requirements.</p> <p>FY 2010 Accomplishments: Supported development and NSA certification of Mini-Crypto-Secure Micro Digital Data Link (MC-SMDDL) for AFSOC Small UAS. Continued to refine Remote Operational Management of End Crypto Units (ROME) standards with feedback from Internet Engineering Task Force (IETF). Initiated development of ROME Reference Implementation. Completed Type 1 Data at Rest (T1DAR). Continue MC-High Assurance DDL (MC-HADDL) concept refinement and initiate initial tech development efforts to meet NSA guidance.</p> <p>FY 2011 Plans: Complete development and testing of the digital data link module. Continue Type 1 concept refinement and initiate further tech development efforts to meet NSA guidance. Deliver encryption solution for MC-SMDDL project. Continue ROME IETF standard effort and development of Reference Implementation. Initiate technology development activities supporting T1DAR.</p> <p>FY 2012 Base Plans: Complete concept refinement and initiate development/competitive prototyping effort for a Type 1 solution. Continue development of Mini Crypto High Assurance DDL, as well as other emerging requirements such as T1DAR technology development efforts.</p> <p>FY 2012 OCO Plans:</p>											
Accomplishments/Planned Programs Subtotals							131.928	118.787	77.518	-	77.518
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 0303140F: Information System Security Program, OPAF	62.276	49.642	93.914	0.000	93.914	150.449	119.512	25.197	17.925	Continuing	Continuing
D. Acquisition Strategy											
The Crypto Modernization portfolio of component acquisition projects is executing using a variety of approaches that vary from an evolutionary acquisition strategy using spiral development (for new component development) to incremental improvement leveraging leading-edge, certified non-developmental items (for											

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: 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 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>
<p>modernization). Contract type is selected for each of the individual projects based upon its acquisition approach and its unique technology risks. A mixture of fixed-price and cost-reimbursement contracts have been selected which maximize the best value for the Government as listed in the R-3.</p> <p>Program Support Administration (PMA) costs are defined as those direct, unique program costs, other than payroll costs for government personnel, which are required for operation of a program office and its management and oversight role. These include costs such as Advisory and Assistance Service (A&AS) (Specialized Cost Services - SCS, Professional Acquisition Support Services - PASS, Engineering and Technology Acquisition Support Services - ETASS, Federally Funded Research and Development Centers - FFRDC) contracted support to a program office. Under PMA, A&AS personnel support the functions of government personnel in managing a weapon system or common item.</p> <p><u>E. Performance Metrics</u></p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program				PROJECT 675100: Cryptographic Modernization					
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
KG-3X	C/FFP	Rockwell Collins:Cedar Rapids, IA	46.974	1.104	Apr 2011	-		-		-	0.000	48.078	51.403
Remote ReKey (CI-33)	C/CPIF	General Dynamics C4 Systems:Needham, MA	37.691	10.408	Nov 2010	-		-		-	0.000	48.099	46.121
Combat Key Generator (KOK-23)	C/CPIF	General Dynamics C4 Systems:Needham, MA	14.498	-		-		-		-	0.000	14.498	14.498
VINSON/ANDVT Cryptographic Modernization	C/CPIF	Raytheon Company:Ft Wayne, IN	0.837	14.525	Aug 2011	21.980	Aug 2012	-		21.980	7.111	44.453	TBD
VISON/ANDVT/Cryptographic Modernization (Embedded)	MIPR	Defense Microelectronic Activity:McClellan, CA	-	8.592	Nov 2010	-		-		-	0.000	8.592	TBD
Space Telemetry, Tracking & Commanding Crypto Mod (TT&C) Ground Operating Equipment (GOE)	C/CPIF	VIASAT:Carlsbad, CA	29.697	0.300	Oct 2010	-		-		-	0.000	29.997	10.995
Space Telemetry, Tracking & Commanding Crypto Mod (TT&C) Aerospace Vehicle Equipment (AVE)	C/CPAF	General Dynamics C4 Systems:Scottsdale, AZ	58.448	8.210	Nov 2010	-		-		-	0.000	66.658	TBD
Space Telemetry, Tracking & Commanding Crypto Mod (TT&C) Space Modular Common Crypto	C/CPAF	Multiple:Multiple,	4.484	4.417	Nov 2010	4.785	Dec 2011	-		4.785	Continuing	Continuing	TBD
Space Mission Data Crypto Mod	C/CPIF	L-3 COMM CORP:CAMDEN, NJ	2.130	14.093	Nov 2010	19.647	Nov 2011	-		19.647	8.266	44.136	TBD
F22A Multi Function Crypto (KOV 50)	MIPR	ASC/YFAA:Wright-Patterson AFB OH, OH	22.898	-		-		-		-	0.000	22.898	TBD
Concept Refinement Requirements (previously named Studies & Analyses)	Various	MULTIPLE:MULTIPLE,	60.787	3.701	Feb 2011	-		-		-	Continuing	Continuing	TBD
Tech Development [Mini-Crypto Efforts, Remote Operational ME [ROME], Type-1 Data At Rest [T1	Various	MULTIPLE:MULTIPLE,	104.320	25.311	Feb 2011	9.179	Feb 2012	-		9.179	Continuing	Continuing	TBD

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program				675100: Cryptographic Modernization					
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
DAR], High Speed Crypto [HSC]]													
Subtotal			382.764	90.661		55.591		-		55.591			
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
KG-3X	C/CPIF	ROCKWELL COLLINS: CEDAR RAPIDS, IA	2.178	-		-		-		-	0.000	2.178	2.178
Remote ReKey (CI-33)	Various	VARIOUS:VARIOUS,	1.000	1.650	Jan 2011	-		-		-	0.000	2.650	2.650
Subtotal			3.178	1.650		-		-		-	0.000	4.828	4.828
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
KG-3X	C/CPIF	ROCKWELL COLLINS: CEDAR RAPIDS, IA	2.208	-	Jan 2011	-		-		-	0.000	2.208	2.208
Tech Development [Mini-Crypto Efforts, Remote Operational ME [ROME], Type-1 Data At Rest [T1 DAR], High Speed Crypto [HSC]]	Various	MULTIPLE:MULTIPLE,	0.520	0.297	Jan 2011	0.128	Jan 2012	-		0.128	Continuing	Continuing	TBD
Remote ReKey (CI-33)	C/CPIF	General Dynamics C4 Systems:Needham, MA	2.792	0.986	Jan 2011	-		-		-	0.000	3.778	TBD
Space Telemetry, Tracking & Commanding Crypto Mod (TT&C)	Various	MULTIPLE:MULTIPLE,	5.956	1.236	Mar 2011	1.585	Mar 2012	-		1.585	Continuing	Continuing	TBD

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program				PROJECT 675100: Cryptographic Modernization						
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	
Space Mission Data Crypto Mod	Various	MULTIPLE:MULTIPLE,	2.995	2.421	Feb 2011	2.139	Feb 2012	-		2.139	Continuing	Continuing	TBD	
VINSON/ANDVT Crypto Mod-Embedded	MIPR	MULTIPLE:MULTIPLE,	1.241	1.517	Feb 2011	1.120	Jan 2012	-		1.120	Continuing	Continuing	TBD	
Subtotal			15.712	6.457		4.972		-		4.972				
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	
Program Management Administration (PMA)	Various	Various:Various,	162.275	20.019	Jan 2011	16.955	Jan 2012	-		16.955	Continuing	Continuing	TBD	
Subtotal			162.275	20.019		16.955		-		16.955				
			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			563.929	118.787		77.518		-		77.518				
Remarks														

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: 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 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: 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 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: <i>Information Systems Security Program</i>	PROJECT 675100: <i>Cryptographic Modernization</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
KG-3X CM development, and test efforts (pg1of2)	1	2010	2	2011
Remote Rekey concept refinement and development (pg1of2)	1	2010	1	2012
Combat Key Generator development (pg1of2)	1	2010	2	2010
VINSON-ANDVT Cryptographic Modernization (VACM) concept refinement and development (pg1of2)	1	2011	1	2013
Space Telemetry Tracking and Commanding (Aerospace Vehicle Equipment [AVE] Increment 1, and Ground Operating Equipment [GOE] Increment 1 development (pg2of2)	1	2010	1	2015
Space Mission Data (KG-88) concept activities and development (pg2of2)	1	2010	4	2013
F-22 Multi Function Crypto (CM development of KOV-50) and platform integration (pg2of2)	1	2010	1	2015
Concept Refinement Requirements (includes MLS, Engineering Support, MITRE Support, and DGK) (pg2of2)	1	2010	4	2016
Technology Development Requirements (Includes ROME, High Speed Crypto, and T1 DAR) (pg 2of2)	1	2010	4	2016

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program				PROJECT 675231: AF Key Management Infrastructure (AF KMI)			
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
675231: AF Key Management Infrastructure (AF KMI)	12.127	15.369	16.471	-	16.471	10.697	5.186	7.093	7.134	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Air Force Key Management Infrastructure (AF KMI) Program consists of multiple developments supporting the AF requirements/portion of the DoD Key Management Infrastructure (KMI). (The National Security Agency [NSA] acts as the Executive Agency for the DoD KMI Program.) AF KMI, in concert with this overarching DoD KMI Program, will provide a secure and flexible capability for the electronic generation, distribution, accounting, and management of key material and other communications security (COMSEC) materials for all DoD Command, Control, Communications, Computers, and Intelligence (C4I) and for the Services' weapon systems. KMI represents a broad-scale replacement of the current Electronic Key Management System (EKMS). The new KMI will provide capabilities that will allow networked operation in consonance with the Global Information Grid (GIG) and other DoD, fellow Service, and AF enterprise objectives. It thereby will assure a viable support infrastructure for future weapons and C4I programs to incorporate key management into their system designs.

The DoD KMI will greatly improve protection of national, security-related information by substantially enhancing confidentiality, integrity, and non-repudiation characteristics over the legacy Electronic Key Management System. KMI will greatly accelerate the availability of crypto key materials through electronic transmission versus shipping of materials, will enhance mission responsiveness and flexibility, and will eventually take the man "out-of-the-loop" in the distribution of crypto key materials.

The AF Key Management Infrastructure (KMI) Program is building the AF KMI "Last Mile" architecture. This R&D effort includes defining all of the AF KMI "Last Mile" architecture, building the linkage interfaces that will allow KMI systems to communicate, and other related developments to meet operational needs. AF KMI is addressing requirements in increments. Increment 1 is in the concept development phase conducting development, studies and analysis efforts that includes: Single Point Fill Capability Development, Black Data Distribution System development, and the Legacy ECU Adaptor effort. Increment 1 also includes the studies, analysis, concept development and prototyping efforts of the Next Generation Fill Device which is renamed as the AF KMI Last Mile Load Device (LMLD) and will be developed in conjunction with the KOV-21 Follow-on Crypto Engine as a complete/combined unit to replace the current Simple Key Loader and its KOV-21 Crypto Engine. In addition, the AF KMI program is working with NSA to explore new key delivery methods for KMI: "Mobile" Clients that can be brought out to platforms and remote ECUs; a new COMSEC material device that works with KMI and incorporates netcentricity; and a method called "over-the-air-keying (OTAK)" to ultimately replace the current data transfer devices. Activities also include an integration laboratory and studies and analysis to support both current program planning and execution and future program planning.

In parallel with AFKMI, DoD and the Services are developing a new generation of End Crypto Units (ECUs) under the Joint Crypto Modernization Initiative that will be capable of direct interaction with the KMI. (PE0303140F, BPAC 675100, Cryptographic Modernization, supports this initiative). In some cases these new ECUs, although needing to be supported by KMI, will not be KMI network-connected. "Last mile" transport of black (aka benign, or encrypted) and red (unencrypted) keying material from a KMI client to a new generation ECU or current legacy ECU will need to be handled in the early years by one of two data transfer devices.

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program		PROJECT 675231: AF Key Management Infrastructure (AF KMI)			
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
<p>Title: Systems Engineering</p> <p>Description: Architectural planning, systems engineering, and studies and analyses for Migration to Key Management Infrastructure (includes acquisition planning, systems integration, engineering support and SPO support).</p> <p>FY 2010 Accomplishments: Continued architectural planning, systems engineering, and studies and analyses for migration to the Key Management Infrastructure. Developed the Air Force critical path to transition from EKMS to KMI CI-2. Developed the Joint KMI Concept of Operation and the DoD KMI Master Transition Plan.</p> <p>FY 2011 Plans: Continues architectural planning, systems engineering, and studies and analyses for migration to Key Management Infrastructure. Conduct AF-centric operational testing of KMI CI-2 components such as the Management Client (MGC) in addition to supporting NSA's operational testing plans.</p> <p>FY 2012 Base Plans: Will continue architectural planning, systems engineering, and studies and analyses for migration to Key Management Infrastructure.</p> <p>FY 2012 OCO Plans:</p>			3.724	3.807	4.135	-	4.135
<p>Title: Air Force KMI "Last Mile" Increment I</p> <p>Description: Air Force KMI Last Mile concept development; distribution and management elements of last mile; studies and analyses for technology possibilities for the load element of last mile; integrating Black Key Server technology.</p> <p>FY 2010 Accomplishments: Deployed a Key Management Distribution Pilot system capable of delivering cryptographic key material to geographically separated warfighters. AF KMI team awarded the 2010 DoD Cyber, Identity, and Information Assurnace Team Award for outstanding contributions advancing the DoD Information Assurance Strategy.</p> <p>FY 2011 Plans:</p>			8.403	11.562	12.336	-	12.336

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: 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 0303140F: <i>Information Systems Security Program</i>		PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete the piloting and fielding of a Key Management Distribution system with the baseline capability. Support "Last Mile" specific efforts as required for transitional activities required to support KMI.					
<i>FY 2012 Base Plans:</i> Continue fielding and development of a Key Management Distribution Systems future capabilities. Support "Last Mile" specific efforts as required for transitional activities required to support KMI.					
<i>FY 2012 OCO Plans:</i>					
Accomplishments/Planned Programs Subtotals	12.127	15.369	16.471	-	16.471

C. Other Program Funding Summary (\$ in Millions)											
<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>
• PE 0303140F: <i>Information Systems Security Program, OPAF</i>	0.000	1.689	7.537	0.000	7.537	10.091	11.655	18.015	13.991	Continuing	Continuing

D. Acquisition Strategy All major contracts within this Project are open to full and open competition with technology knowledge, expertise, and prior experience on similar projects weighted heavily in the evaluation process.
--

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.

UNCLASSIFIED

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 0303140F: Information Systems Security Program				PROJECT 675231: AF Key Management Infrastructure (AF KMI)					
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	
Architectural Planning and Migration to KMI Infrastructure	SS/TBD	MITRE:San Antonio, TX	2.832	-		-		-		-	Continuing	Continuing	TBD	
Studies & Analyses & Systems Engineering	SS/TBD	MITRE:San Antonio, TX	2.474	1.130	Jan 2011	1.797	Jan 2012	-		1.797	Continuing	Continuing	TBD	
Operational Capability Engineering Direct Mission Support	C/TBD	Jacobs Engineering:San Antonio, TX	0.359	0.401	Jan 2011	0.412	Jan 2012	-		0.412	Continuing	Continuing	TBD	
KMI Last Mile Development Increment 1	TBD	TBD:TBD,	15.933	11.128	Jan 2011	11.253	Jan 2012	-		11.253	Continuing	Continuing	TBD	
Subtotal			21.598	12.659		13.462		-		13.462				
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	
Architectural Planning & Migration to the KMI Infrastructure	SS/TBD	MITRE:San Antonio, TX	-	0.503	Jan 2011	0.770	Jan 2012	-		0.770	Continuing	Continuing	TBD	
Engineering & Technical Acquisition Support Service	C/TBD	Jacobs Engineering:San Antonio, TX	0.742	0.163	Jan 2011	0.168	Jan 2012	-		0.168	Continuing	Continuing	TBD	
Subtotal			0.742	0.666		0.938		-		0.938				
Remarks Test and Evaluation (\$ in Millions)														
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	
System Administrator	C/TBD	General Dynamics:San Antonio, TX	0.388	0.153	Jan 2011	0.157	Jan 2012	-		0.157	Continuing	Continuing	TBD	

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: 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 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>
--	--	--

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
KMI Transition Support	TBD	TBD:TBD,	-	0.281	Feb 2011	0.289	Feb 2012	-		0.289	Continuing	Continuing	TBD
Subtotal			0.388	0.434		0.446		-		0.446			

Remarks

Management Services (\$ in Millions)

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
Professional Acquisition Support Services	C/TBD	P.E. Systems:San Antonio, TX	3.208	1.610	Jan 2011	1.625	Jan 2012	-		1.625	Continuing	Continuing	TBD
Subtotal			3.208	1.610		1.625		-		1.625			

			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			25.936	15.369		16.471		-		16.471			

Remarks

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: 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 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: <i>Information Systems Security Program</i>	PROJECT 675231: <i>AF Key Management Infrastructure (AF KMI)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Architectural Planning, System Engineering and Acquisition Support	1	2010	4	2016
DoD KMI Cabability Increment 2 IOC	4	2011	1	2012
KMI "Last Mile" Increment 1	1	2010	3	2015
AF KMI Increment 2 - Last Mile Load Device (LMLD)	1	2014	4	2016

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: 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 0303140F: <i>Information Systems Security Program</i>				PROJECT 677820: <i>Computer Security RDT&E: Firestarter</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
677820: <i>Computer Security RDT&E: Firestarter</i>	13.919	3.321	6.022	-	6.022	6.280	6.438	6.504	6.772	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
<p>The Firestarter program provides technical transition opportunities for research in the area of Information Assurance (IA) technologies and tools needed to defend Air Force Command, Control, Communications, Computer, and Intelligence (C4I) systems from computer network attacks, and ensure recovery in the event of an attack. The emphasis of the program is directed toward computer and network systems security; damage assessment and recovery; cyber threat recognition, attribution, and mitigation; and active response methodologies in response to evolving threats and changes to cyber environment. These areas of emphasis are realized through research and development in the areas of: cyberspace surveillance; cyber indications and warning (CI&W); high-speed and host-based network intrusion detection; fusion and correlation of cyber intelligence; decision support; recovery; digital forensics; active response, etc. Current Air Force systems, such as the Combat Information Transport System/Base Information Protection (CITS/BIP) leverage this technology to meet their information assurance needs/requirements. Additionally, this program utilizes IA and cyber technology investments by the Defense Advanced Research Projects Agency (DARPA), the National Security Agency (NSA), Director of National Intelligence (DNI), Intelligence Advanced Research Projects Activity (IARPA), and the Department of Homeland Security (DHS) to jump-start its development of solutions to existing Air Force IA and cyber requirements. This program coordinates and cooperates with the JTF-GNO, STRATCOM, DISA, NSA and other services to ensure Global Information Grid (GIG) IA requirements are being met. Activities performed include those designed to identify, analyze, test, rapidly acquire, and integrate emerging IA and cyber technology into all regions of the GIG - terrestrial, airborne, and space systems. 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.</p>											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Cyber Forensic Tools							1.199	1.020	1.946	-	1.946
Description: Cyber forensic tools & methodologies. Includes: Initial metrics for reliable info assurance; secure coalition IA data management, collaboration and visualization; analysis of cyber security bots.											
FY 2010 Accomplishments: Continued investigation and analysis of Cyber Security Bots.											
FY 2011 Plans: Extend the development of an Integrated Airborne Network Security IO Platform.											
FY 2012 Base Plans:											

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program	PROJECT 677820: Computer Security RDT&E: Firestarter				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Will develop methods and technologies to enhance “real time” cyber network forensic analysis.						
FY 2012 OCO Plans:						
Title: Cyber Threat Recognition		1.050	0.803	1.452	-	1.452
Description: Cyber Threat Recognition. Includes: extended effort for info assurance metrics; integrated airborne network security IO platform						
FY 2010 Accomplishments: Extended effort to develop metrics for reliable information assurance (IA) measurement and testing.						
FY 2011 Plans: Extend the development of an Integrated Airborne Network Security IO Platform.						
FY 2012 Base Plans: Will enhance IO Platform technology to identify “zero-day” threats in real time.						
FY 2012 OCO Plans:						
Title: Cyber Threat Attribution		1.363	0.900	1.645	-	1.645
Description: Cyber Threat Attribution and Mitigation. Includes: risk mitigation techniques for wireless networks and systems; active response, dynamic policy enforcement and computer/net attack attribution efforts.						
FY 2010 Accomplishments: Continued efforts to provide dynamic, cost effective, risk mitigation information assurance techniques for wireless networks and systems.						
FY 2011 Plans: Continue effort to provide active response, dynamic policy enforcement and computer/network attack attribution.						
FY 2012 Base Plans: Will enhance and transition data mining and analysis technologies to attribute “low and slow” computer network attacks, occurring over time, to specific adversaries.						
FY 2012 OCO Plans:						
Title: Transition IA Technology		7.776	0.598	0.979	-	0.979

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program		PROJECT 677820: Computer Security RDT&E: Firestarter			
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<p>Description: Transition DARPA/DTO/IARPA/DHS information assurance (IA) technology into AF Information Protection, Detection, & Response architecture. Includes: space systems IA solutions; terrestrial net defense technology development; airborne IP network IA tools; IA/cyber modeling & sim; secure interoperable distributed agent computing.</p> <p>FY 2010 Accomplishments: Identified and enhanced solutions for information assurance in space systems. Continue IA/Cyber modeling. Extend the development of technology demonstrations and prototypes for information assurance of airborne IP networking.</p> <p>FY 2011 Plans: Extend development and implementation of a terrestrial network defense overarching strategy realized through various US Government IA research programs.</p> <p>FY 2012 Base Plans: Will continue enhancing and transitioning customer funded IA technology to operational USAF components in accordance with rapid requirements documentation provided by AFSPC.</p> <p>FY 2012 OCO Plans:</p>							
Accomplishments/Planned Programs Subtotals			11.388	3.321	6.022	-	6.022
			FY 2010	FY 2011			
<p>Congressional Add: Remote Suspect Identification</p> <p>FY 2010 Accomplishments: Upgraded and field tested the Digital Biometric Security (DiBiS) system. Successfully demonstrated the ability to link a computer system to a specific user based on unique biometric patterns identified within keystroke logs.</p> <p>FY 2011 Plans:</p>			2.531	-			
Congressional Adds Subtotals			2.531	-			

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: 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 0303140F: <i>Information Systems Security Program</i>	PROJECT 677820: <i>Computer Security RDT&E: Firestarter</i>	

C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• N/A:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

All major contracts within this project are awarded after full and open competition utilizing evolutionary capability and incremental development.

E. Performance Metrics

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

UNCLASSIFIED

UNCLASSIFIED

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 0303140F: Information Systems Security Program				PROJECT 677820: Computer Security RDT&E: Firestarter						
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	
FFRDC (MITRE)	C/CPFF	Various:Various,	6.703	0.600	Jan 2011	2.200	Jan 2012	-		2.200	Continuing	Continuing	TBD	
Multiple Contractors	C/CPFF	Various:Various,	5.244	1.821	Jan 2011	1.696	Jan 2012	-		1.696	Continuing	Continuing	TBD	
Multiple Universities	C/CPFF	Various:Various,	1.972	0.900	Jan 2011	2.126	Jan 2012	-		2.126	Continuing	Continuing	TBD	
Subtotal			13.919	3.321		6.022		-		6.022				
Remarks Multiple contractors & multiple universities reflect on-going efforts with over a dozen contractors & universities. Each has a different contract date depending on when that particular contract was awarded.														
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	
Subtotal			-	-		-		-		-	0.000	0.000	0.000	
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	
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			13.919	3.321		6.022		-		6.022				

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: 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 0303140F: <i>Information Systems Security Program</i>			PROJECT 677820: <i>Computer Security RDT&E: Firestarter</i>			
	Total Prior Years Cost	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks									

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: 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 0303140F: <i>Information Systems Security Program</i>	PROJECT 677820: <i>Computer Security RDT&E: Firestarter</i>

UNCLASSIFIED

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 0303140F: <i>Information Systems Security Program</i>	PROJECT 677820: <i>Computer Security RDT&E: Firestarter</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Continue Cyber forensic tools and methodologies	1	2010	4	2016
Continue Cyber Threat Recognition	1	2010	4	2016
Continue Cyber Threat Attribution and Mitigation	1	2010	4	2016
Continue Transition of DARPA/DTO/IARPA/DHS information assurance (IA) technology into AF Information Protection, Detection, & Response architecture	1	2010	4	2016
Initiated/Completed Remote Suspect Identification (FY10 Congressional Add)	1	2010	4	2010

UNCLASSIFIED