

UNCLASSIFIED

PE NUMBER: 0303140F
 PE TITLE: Information Systems Security Program

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	178.671	189.956	196.621	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
4579 Adv Security Solutions & Technologies (ASST)	3.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.100
4861 AF Electronic Key Management System (AF EKMS)	5.223	4.272	2.695	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5100 Cryptographic Modernization	142.575	156.687	170.893	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5231 AF Key Management Infrastructure (AF KMI)	4.130	8.602	15.567	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
7820 Computer Security RDT&E: Firestarter	23.643	20.395	7.466	0.000	0.000	0.000	0.000	0.000	Continuing	TBD

(U) 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 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 it addresses the development and transition of information security, protection and defensive capabilities and technologies.

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(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Previous President's Budget	186.255	187.933	199.627
(U) Current PBR/President's Budget	178.671	189.956	196.621
(U) Total Adjustments	-7.584	2.023	
(U) Congressional Program Reductions		-0.660	
Congressional Rescissions		-0.517	
Congressional Increases		3.200	
Reprogrammings	-2.926		
SBIR/STTR Transfer	-4.658		

(U) **Significant Program Changes:**

In FY09 Congress added \$3.2M for Remote Suspect Identification - these funds will be executed in Project 677820, Computer Security RDT&E: Firestarter.

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program				PROJECT NUMBER AND TITLE 4579 Adv Security Solutions & Technologies (ASST)			
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total	
4579 Adv Security Solutions & Technologies (ASST)	3.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.100	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0			

(U) A. Mission Description and Budget Item Justification

Project 674579, Advanced Security Solutions and Technologies, was originally established to develop defensive information warfare solutions for AF Command and Control (C2), Intelligence, Surveillance, and Reconnaissance (ISR) systems. The AF funding for Project 674579 was terminated in FY05. However, the Project remains active because of Congressional adds in FY05, FY06 and FY07. In FY08 the project line received two Congressional adds: one for the continuing Cybersecurity Defend and Attack Exercise in San Antonio, TX; another for an expansion of that effort to the Great Falls, MT location, entitled Montana Cybersecurity Defend and Attack Exercise.

The Center for Infrastructure Assurance and Security (CIAS) at the University of Texas at San Antonio (UTSA) has multiple funding sources, and is a multidisciplinary information assurance research and development, academic, and operationally-based program. It brings AF, academic, and civilian expertise to create a joint approach to technical and policy issues, civil threat information collection and reporting, as well as conducting joint military base/local civil agency Cybersecurity Defend and Attack Exercises. The aim of the work is to determine the degree of reliance of military establishments on locally-operated services, how military bases and posts currently participate in testing the local critical infrastructures, and how they would participate and respond to attacks to local critical infrastructure.

This project is in Budget Activity 7, Operational System Development, because it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Managed the Cybersecurity Defend and Attack Exercise (Congressional Add)	2.300		
(U) Managed the Montana Cybersecurity Defend and Attack Exercise (Congressional Add)	0.800		
(U) Total Cost	3.100	0.000	0.000

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

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) N/A										

(U) D. Acquisition Strategy

Congressional adds are for a specific on-going effort being done for AFISRA under the Center for Infrastructure Assurance and Security Program (CIAS) at University of Texas at San Antonio; and an extension of that effort to be conducted in Great Falls, MT. The extension effort will also be done for AFISRA by the CIAS Program.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
07 Operational System Development				0303140F Information Systems Security Program					4579 Adv Security Solutions & Technologies (ASST)			
<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> Cybersecurity Defend and Attack Exercise (Congressional Add)	FY03 Information Warfare Broad Area Announcem ent (IW BAA) Grant Amendment	University of TX San Antonio, San Antonio, TX	4.042	2.300	Oct-08	0.000		0.000		0.000	6.342	6.342
Montana Cybersecurity Defend and Attack Exercises (Congressional Add)	FY03 Information Warfare Broad Area Announcem ent (IW BAA) Grant Amendment	FY03 Information Warfare Broad Area Announcement (IW BAA) Grant Amendment	0.000	0.800	Oct-08	0.000		0.000		0.000	0.800	0.800
Subtotal Product Development			4.042	3.100		0.000		0.000		0.000	7.142	7.142
Remarks:												
(U) Total Cost			4.042	3.100		0.000		0.000		0.000	7.142	7.142

Exhibit R-4, RDT&E Schedule Profile

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BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0303140F Information Systems Security Program

PROJECT NUMBER AND TITLE
4579 Adv Security Solutions & Technologies (ASST)



ISSP BPAC 674579: ASST Program Schedule

	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Cybersecurity Defend and Attack Exercise	▲ ■ ▲							
Montana Cybersecurity Defend and Attack Exercise	▲ ■ ▲							

■ Design / development ▲ Initiate/Complete ▲ Spiral Release ◆ Key events

PB10 R-Docs

Depicted by installation/production flow

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Exhibit R-4a, RDT&E Schedule Detail

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07 Operational System Development

PE NUMBER AND TITLE

0303140F Information Systems Security Program

PROJECT NUMBER AND TITLE

4579 Adv Security Solutions & Technologies (ASST)

(U) Schedule Profile

FY 2008

FY 2009

FY 2010

(U) Managed the Cybersecurity Defend and Attack Exercise

1-4Q

(U) Managed the Montana Cybersecurity Defend and Attack Exercise

1-4Q

Exhibit R-2a, RDT&E Project Justification	DATE May 2009
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT NUMBER AND TITLE 4861 AF Electronic Key Management System (AF EKMS)
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
4861 AF Electronic Key Management System (AF EKMS)	5.223	4.272	2.695	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The 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 the current generation of weapon systems. 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. AFEKMS has a three-tier hierarchical structure. This tiered structure provides 'wholesale' to 'retail' to 'consumer' capability to distribute, manage and account for COMSEC keying material. Tier 1 installations comprise the wholesale generation and control capability. Tier 2 installations comprise the local distribution network and Tier 3 comprises the retail capability where keying material leaves the AFEKMS and enters the consumer 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 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 provide a temporary bridge to the DoD Key Management Infrastructure (KMI) Capability Increment (CI)-2, and then a migration path to the "full-up" KMI CI-3. Once KMI CI-3, with its advanced key generation/key distribution capability is fielded and operational, KMI interfaces to EKMS will be severed. DoD KMI has incurred schedule slips. As a result, the AFEKMS Program continues software development to support emerging requirements during the transition period to KMI. Initially, End User Application Software development represented Tier 2 requirements. The KMI fielding delays warranted combining Tier 2 and Tier 3 development projects as the transition period extended. End User Application Software development was completed with the DMD PS 5.0. release. CUAS, DMD and related computer based training continues under Tier 2/3 development for emerging requirements in the FYDP. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This project is in Budget Activity 7, Operational System Development, because it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

Exhibit R-2a, RDT&E Project Justification	DATE May 2009
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT NUMBER AND TITLE 4861 AF Electronic Key Management System (AF EKMS)
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(U) B. Accomplishments/Planned Program (\$ in Millions)	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue program office contract support to the AFEKMS Program for planning and migration to KMI: upgrade/improvements to the EKMS necessary to support the capabilities needed to bridge transition to the Key Management Infrastructure (KMI); EKMS continued deployment (Phase 5); interface and integration of key management into weapon systems; and tech refresh	0.625	0.593	0.273
(U) Completed End User Application Software Development, Data Management Device (DMD) v5.0 release.	1.341	0.000	0.000
(U) Tier 2/3 Development for emerging requirements: Mission support for ECUs, weapon systems and fill device user software pending transition to KMI to include the continuation of CUAS and DMD software development and associated computer based training.	3.257	3.679	2.422
(U) Total Cost	5.223	4.272	2.695

(U) C. Other Program Funding Summary (\$ in Millions)	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to Complete</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>								
(U) AF Other Procurement PE 0303140F	9.984	7.021	21.094	16.199	21.613	22.040	22.481	22.930	Continuing	TBD
Note: This line includes both AFEKMS and AF KMI Other Procurement (3080) funding.										

(U) 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.

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Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
07 Operational System Development				0303140F Information Systems Security Program					4861 AF Electronic Key Management System (AF EKMS)			
(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u>												
AFEKMS Program office contractor support for planning and migration to KMI	CPFF	Mitre, San Antonio, TX	4.667	0.625	Jan-08	0.593	Jan-09	0.273	Jan-10	Continuing	TBD	TBD
Complete End User Application Software Development	T&M	SAIC, San Diego, CA	14.936	1.341	Jan-08	0.000		0.000		0.000	16.277	16.277
Tier 2/3 Development for emerging requirements (CUAS, DMD & CBT).	T&M	SAIC, San Diego, CA	0.000	3.257	Jan-08	3.679	Jan-09	2.422	Jan-10	Continuing	TBD	TBD
Subtotal Product Development			19.603	5.223		4.272		2.695		Continuing	TBD	TBD
Remarks:												
(U) <u>N/A</u>												
(U) Total Cost			19.603	5.223		4.272		2.695		Continuing	TBD	TBD
Remarks:	N/A											

Exhibit R-4, RDT&E Schedule Profile

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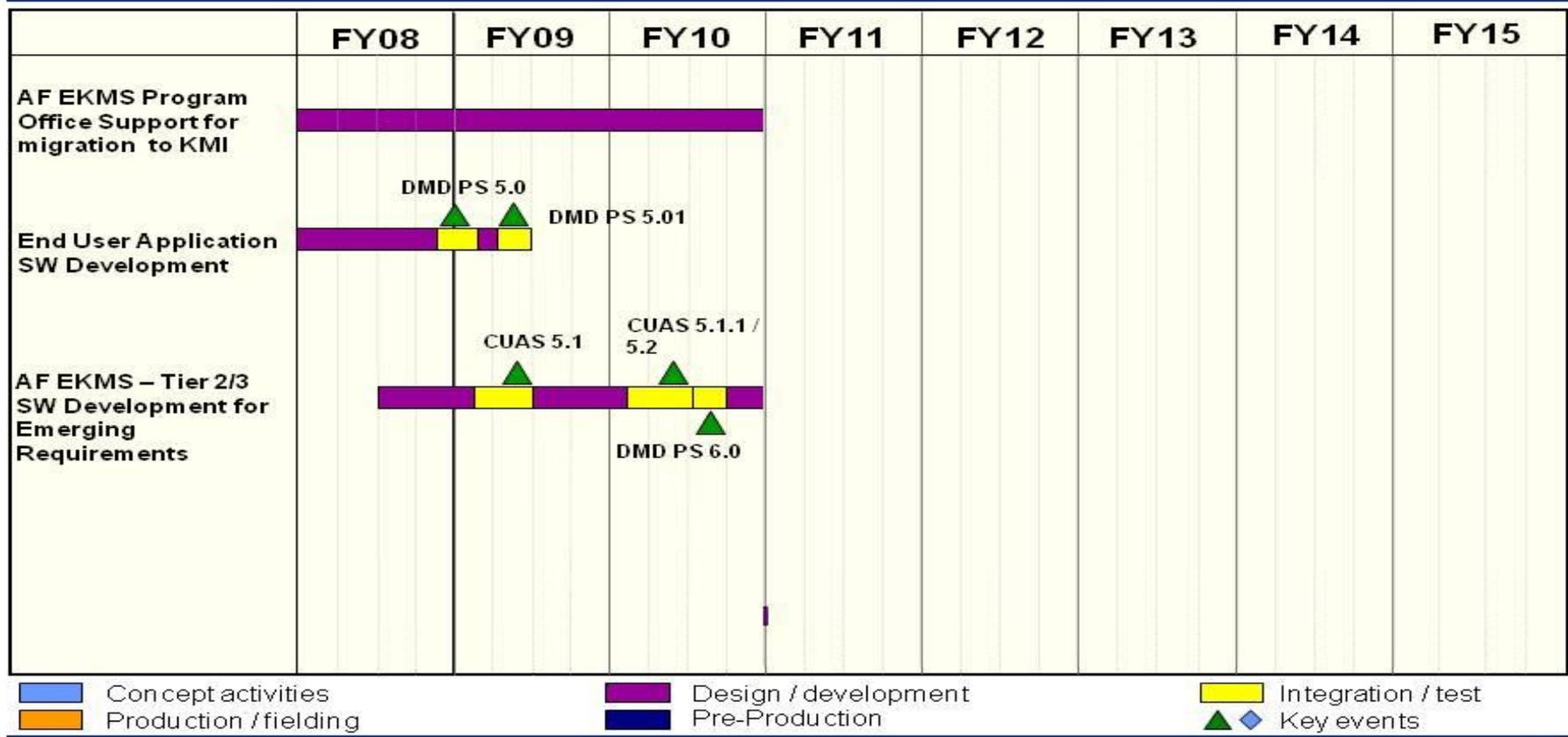
BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0303140F Information Systems Security Program

PROJECT NUMBER AND TITLE
4861 AF Electronic Key Management System (AF EKMS)



ISSP BPAC 674861: AFEKMS Program Schedule



PB10 R-Docs

Depicted by installation/production flow

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Exhibit R-4a, RDT&E Schedule Detail	DATE May 2009
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT NUMBER AND TITLE 4861 AF Electronic Key Management System (AF EKMS)
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	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) <u>Schedule Profile</u>			
(U) AFEKMS Program office contractor support for planning and migration to KMI	1-4Q	1-4Q	1-4Q
(U) Complete End User Application Software Development	1-4Q	1-2Q	
(U) Tier 2/3 Development for emerging requirements (CUAS, DMD and computer based training)	3-4Q	1-4Q	1-4Q

Exhibit R-2a, RDT&E Project Justification	DATE May 2009
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT NUMBER AND TITLE 5100 Cryptographic Modernization
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Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5100 Cryptographic Modernization	142.575	156.687	170.893	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

NOTE:
 In FY10, Key Management Equipment Modernization (KMEM) concept refinement and development transfers to ISSP Project 675231, AF KMI, for integral KMI development. The KMEM project develops the KOV-21 follow-on crypto engine that will be utilized with the KMI "next generation fill device" under development.

(U) A. Mission Description and Budget Item Justification

The Cryptographic Modernization Program modernizes cryptographic devices protecting critical information vital to successful mission 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 the transformation 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 a common solution 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 network-centric capabilities and seamless crypto that is transparent to the user. Activities also include studies and analysis to support both current program planning and execution and future program planning.

This project is in Budget Activity 07, Operation System Development, because it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue KG-3X Cryptographic Modernization development and test efforts of replacement crypto devices	19.879	15.910	6.378
(U) Complete IFF Mode 5 Crypto development and testing	12.699	0.734	0.000
(U) Continue F-22 Multi-Function Crypto (Crypto Mod of KOV-50) Development	0.008	9.024	11.634
(U) Continue Remote Rekey (CI-33, formerly CI-13) Cryptographic Modernization Development	3.429	12.434	26.983

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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT NUMBER AND TITLE 5100 Cryptographic Modernization
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(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue Studies and Analyses (includes SPO Support, CMPO Assessments, Engineering Support, and Crypto Transformation Initiative [includes-Dynamic Group Keying, Multi-Level Security {MLS}, Airborne Link Encryption Family (LEF), and software based encryption])	33.856	29.237	15.825
(U) Break out Space Cryptographic Modernization in FY10	32.201	43.067	0.000
(U) Continue Space Telemetry Tracking and Commanding (includes Aerospace Vehicle Equipment[AVE], KS-327, and Ground Operating Equipment [GOE], Increment 1, KG -252 concept development [Increment 1] and analysis and concept refinement [Increment 2])	0.000	0.000	10.523
(U) Continue Space Mission Data concept development	0.000	0.000	45.145
(U) Continue KM Equipment Modernization (KMEM) concept refinement and development (transfer to ISSP BPAC 675231, AF KMI, in FY10 for integral KMI development)	6.283	0.000	0.000
(U) Continue KOK-23 (formerly KOK-13) Combat Key Generator Development	9.063	6.759	0.000
(U) Continue VINSON/ANDVT Cryptographic Modernization (VACM) concept refinement and development (Includes Stand Alone Development and Testing and Embedded Concepts Studies)	3.698	12.013	32.787
(U) Discontinued Link-16 Encryption Modernization (LSEM) Technical Support	0.000	0.000	0.000
(U) Discontinued Range Telemetry Encryption Modernization (RTEM) in FY08	0.241	0.000	0.000
(U) Continue Secure Crypto Enterprise Management (SCEM) Standards Development	0.126	0.211	0.000
(U) Continue Advanced Common Crypto Modernization analysis and development (includes Smart Munitions,SCEM II, High Speed Crypto and Programmable Objective Encryption Technologies [POET] Type-1 Data At Rest); Smart Munitions paused due to lack of current requirements.	21.092	27.298	21.618
(U) Total Cost	142.575	156.687	170.893

(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF Other Procurement PE 0303140F	45.502	32.688	63.371						Continuing	TBD

(U) D. Acquisition Strategy
 The Crypto Modernization portfolio of component acquisition projects are 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 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.

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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) (SCS, PASS, ETASS, 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.

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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> KG-3X	MIPRed to 639th ELSS/KM. ESC puts on a CPAF contract	CPSG/ZX, Lackland, AFB, TX	16.502	18.720	Jan-08	13.450	Jan-09	5.825	Jan-10	0.000	54.497	54.497
IFF Mode 5 Crypto	CPSG puts on two CPFF contracts.	CPSG/ZC, Lackland AFB, TX	36.384	8.991	Aug-08	0.633		0.000		0.000	46.008	46.008
F-22/ Multi Function Crypto (KOV -50)	MIPRed to ASC/YF. ASC puts on F-22 contract.	ASC/YFAA F-22 SPO, Wright Patterson AFB, OH	2.889	0.000		9.000	Feb-09	11.610	Jan-10	Continuing	TBD	TBD
Remote Rekey (CI-33)	CPSG will put on a FFP contract	CPSG/ZC, Lackland AFB, TX	6.331	2.546	Aug-08	9.476	Oct-09	23.194	Nov-10	Continuing	TBD	TBD
KM Equipment Modernization (KMEM) development (continued under ISSP BPAC 675231, AF KMI in FY10).	CPSG placed on a T&M Contract	CPSG/NI, Lackland AFB, TX	1.853	6.283	Feb-08	0.000	Feb-09	0.000		0.000	8.136	8.136
Combat Key Generator (KOK-23A)	CPSG placed on two CPIF Contracts	CPSG/ZC, Lackland AFB, TX	5.690	8.072	Nov-08	4.095	Nov-09	0.000		0.000	17.857	17.857
VINSON/ANDVT Cryptographic Modernization	CPSG placed on CPFF Contracts	CPSG/ZC, Lackland AFB, TX	4.765	3.651	Feb-08	9.222	Feb-09	30.778	Feb-10	Continuing	TBD	TBD
Range Telemetry Encryption Modernization (RTEM) (Discontinued in FY09)	N/A	CPSG/ZC, Lackland AFB, TX	3.345	0.000	Feb-08	0.000		0.000			3.345	3.345
* Studies and Analyses (includes SPO Support, CMPO Assessment, Engineering Support, and CTL.	CPSG puts on three T&M contracts	CPSG/ZX, Lackland AFB, TX	57.512	20.312	Jan-08	21.749	Jan-09	7.170	Feb-10	Continuing	TBD	TBD

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Project 5100

Exhibit R-3 (PE 0303140F)

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Exhibit R-3, RDT&E Project Cost Analysis										DATE		
										May 2009		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT NUMBER AND TITLE				
07 Operational System Development				0303140F Information Systems Security Program				5100 Cryptographic Modernization				
Space Crypto Mod (following two Projects broken out after FY09)	CPSG puts on three CPFF contracts	CPSG/ZJ, Lackland AFB, TX	42.226	29.146	Jan-08	30.123	Jan-09	0.000	0.000	101.495	101.495	
Space Telemetry, Tracking & Commanding Crypto Mod	CPSG will put on two CPFF contracts	CPSG/ZJ, Lackland AFB, TX	0.000	0.000		0.000		6.882	Jan-10	Continuing	TBD	TBD
Space Mission Data Crypto Mod	CPSG will put on a CPFF contract	CPSG/ZJ, Lackland AFB, TX	0.000	0.000		0.000		41.227	Jan-10	Continuing	TBD	TBD
Secure Crypto Enterprise Management (SCEM)	CPSG MIPRs funds to NSA to put on contract	CPSG/ZX, Lackland AFB, TX	2.881	0.125		0.211		0.000		0.000	3.217	3.217
Link 16 Encryption Modernization (LSEM)	N/A	N/A	0.000	0.000		0.000		0.000		0.000	0.000	0.000
Advanced Common Crypto Modernization analysis and development (includes High Speed Crypto, and POET)	CPSG puts on CPFF contracts	CPSG/ZX, Lackland AFB, TX	8.912	17.417	Feb-08	26.325	Feb-09	21.286	Feb-10	Continuing	TBD	TBD
Subtotal Product Development			189.290	115.263		124.284		147.972		Continuing	TBD	TBD
Remarks:	<p>* Early efforts within the AF CM Program to scope requirements, determine work needed to provide modernization and/or transformation solutions, consider viable solutions, etc. are considered "in-house efforts" and labeled "CM Initiatives". If no requirements are found or work already underway will provide a solution, the initiative is closed out. Some initiatives will point to a common solution, and be merged to form and initiate a new CM project. For some initiatives, individual solutions will be able to be crafted within on-going projects, and the work under the initiative will be dispersed across on-going or newly initiated projects.</p> <p>Note: R-3 has been updated to reflect current Project Requirements and latest EACs.</p>											
(U) <u>Program Management Administration (PMA)</u>	Various	Various		17.476		17.722		15.231		Continuing	TBD	TBD
Subtotal Program Management Administration (PMA)			0.000	17.476		17.722		15.231		Continuing	TBD	TBD
(U) <u>Test and Evaluation (T&E)</u>				0.659		0.849		0.000			1.508	1.508
KG-3X				3.708		0.076		0.000			3.784	3.784
IFF				0.883		0.987		2.236		Continuing	TBD	TBD
Remote Rekey (CI-33)				0.991		1.727		0.000			2.718	2.718
Combat Key Generator KOK-23				0.040		0.147		0.525		Continuing	TBD	TBD
VINSON/ANDVT Crypto Mod				3.055		4.922		0.000			7.977	7.977
Space Crypto Mod				0.000		0.000		1.937		Continuing	TBD	TBD
Space TT&C				0.000		0.000		2.792		Continuing	TBD	TBD
Space MD				0.000		0.000		0.200		Continuing	TBD	TBD
SCEM												

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Exhibit R-3 (PE 0303140F)

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Exhibit R-3, RDT&E Project Cost Analysis

DATE

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE						
07 Operational System Development	0303140F Information Systems Security Program	5100 Cryptographic Modernization						
Advanced Common Crypto Mod	0.000	0.973	0.000	Continuing	TBD	TBD		
Subtotal Test and Evaluation (T&E)	0.000	9.336	9.681	7.690	Continuing	TBD	TBD	
Remarks:								
(U) <u>Government Furnished Equipment (GFE)</u>								
KG-3X GFE	0.500	5.000	0.000	Continuing	TBD	TBD		
Subtotal Government Furnished Equipment (GFE)	0.000	0.500	5.000	0.000	Continuing	TBD	TBD	
Remarks:								
(U) Total Cost	189.290	142.575	156.687	170.893	Continuing	TBD	TBD	

Exhibit R-4, RDT&E Schedule Profile

DATE

May 2009

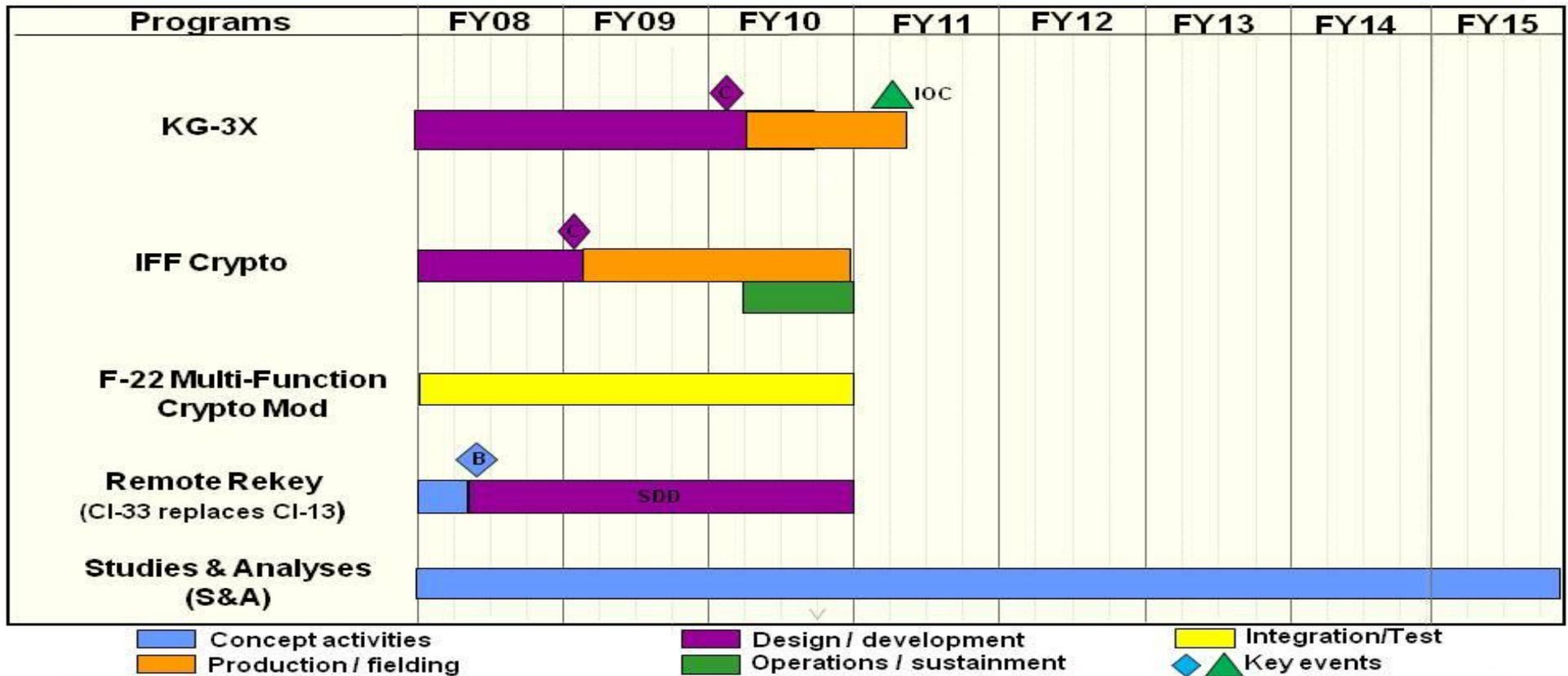
BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0303140F Information Systems Security Program

PROJECT NUMBER AND TITLE
5100 Cryptographic Modernization



ISSP BPAC 675100: Crypto Mod Program Schedule (p 1 of 3)



PB10 R-Docs

1

Exhibit R-4, RDT&E Schedule Profile

DATE

May 2009

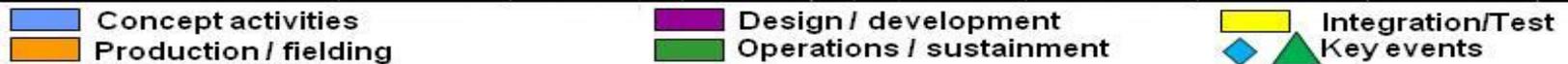
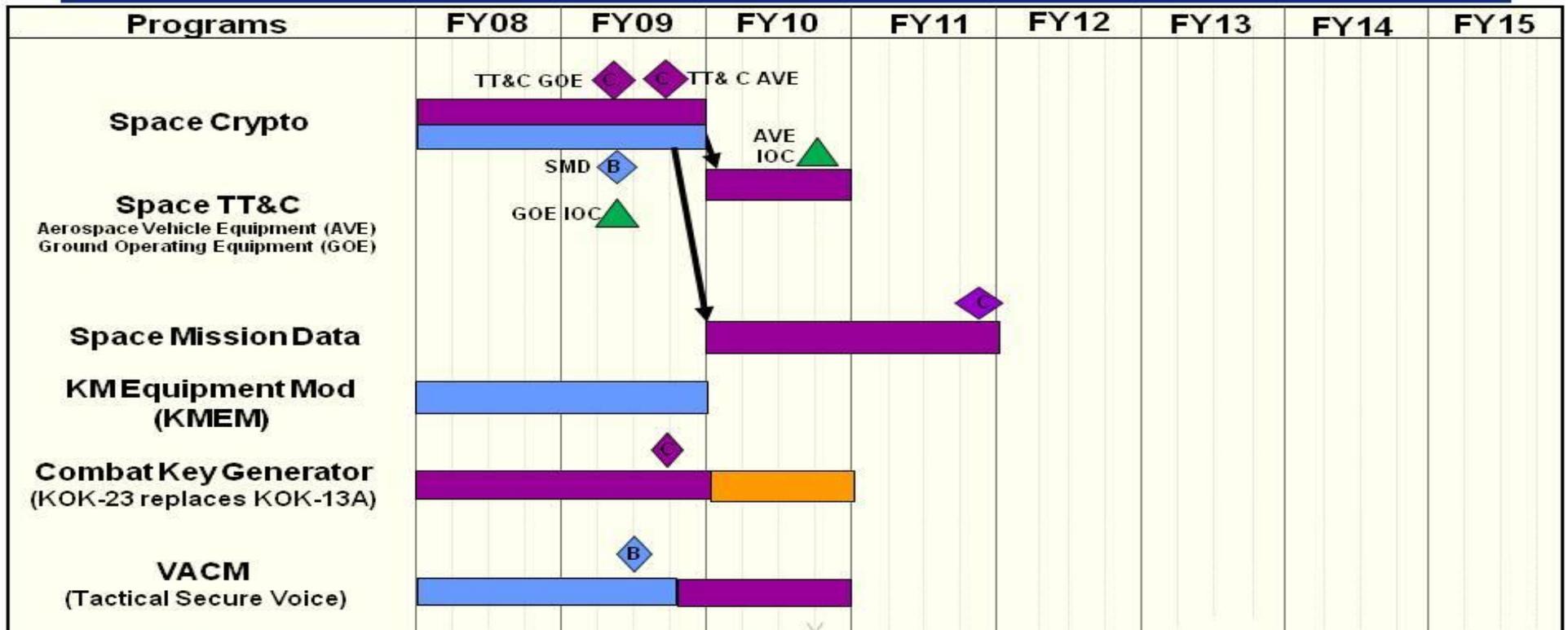
BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0303140F Information Systems Security Program

PROJECT NUMBER AND TITLE
5100 Cryptographic Modernization



ISSP BPAC 675100: Crypto Mod Program Schedule (p 2 of 3)



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Exhibit R-4, RDT&E Schedule Profile

DATE

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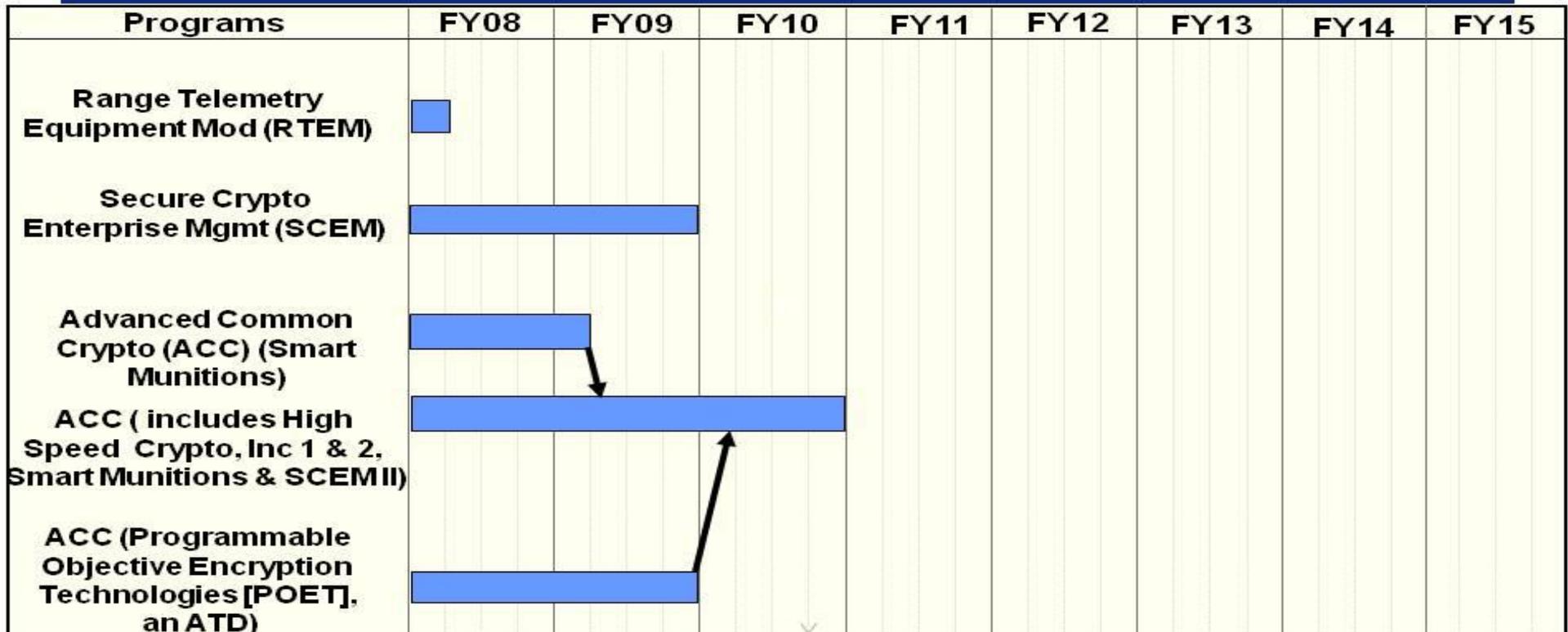
BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0303140F Information Systems Security Program

PROJECT NUMBER AND TITLE
5100 Cryptographic Modernization



ISSP BPAC 675100: Crypto Mod Program Schedule (p 3 of 3)



■ Concept activities
■ Production / fielding

■ Design / development
■ Operations / sustainment

■ Integration/Test
◆ Key events

PB10 R-Docs

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Exhibit R-4a, RDT&E Schedule Detail	DATE May 2009
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT NUMBER AND TITLE 5100 Cryptographic Modernization
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(U) <u>Schedule Profile</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue KG-3X CM development and test efforts (rebaselined Dec07)	1-4Q	1-4Q	1-2Q
(U) Complete IFF Mode 5 Crypto development and testing	1-4Q		
(U) Continue F/A-22 Multi Function Crypto (CM development of KOV-50)	1-4Q	1-4Q	1-4Q
(U) Continue Remote Rekey (replacement for CI-13) CM concept refinement and development	1-4Q	1-4Q	1-4Q
(U) Continue Studies and Analyses (includes SPO support, CM PM Reserves, Engineering Support, and Crypto Transformation Initiative.	1-4Q	1-4Q	1-4Q
(U) Breakout Space CM in FY10: (The following two projects broken out after FY09	1-4Q	1-4Q	
(U) Continue Space Telemetry Tracking and Commanding (Includes Aerospace Vehicle Equipment [AVE] KS-327, and Ground Operating Equipment [GOE], KG-252) concept development [Increment 1] and analysis and concept refinement [increment 2]			1-4Q
(U) Continue Space Mission Data concept development			1-4Q
(U) Continue KM Equipment Modernization (KMEM) development	1-4Q	1-4Q	
(U) Continue Combat Key Generator (replacement for KOK-13A) concept refinement and development	1-4Q	1-3Q	
(U) Continue VINSON-ANDVT Cryptographic Modernization (VACM) concept refinement and development (Includes Stand Alone and Embedded Concept Studies)	2-4Q	1-4Q	
(U) Discontinued Range Telemetry Encryption Modernization (RTEM) (alternative solution revealed)	1Q		
(U) Continue Secure Crypto Enterprise Management (SCEM)	1-4Q	1-4Q	
(U) Continue Advanced Common Crypto Modernization analysis and development (includes High Speed Crypto and Programmable Objective Encryption Technologies [POET]; Smart Munitions paused due to lack of current requirements) Common Crypto Engines/Modules, and Smart Munitions)	1-4Q	1-4Q	1-4Q

Exhibit R-2a, RDT&E Project Justification

DATE

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE						PROJECT NUMBER AND TITLE		
07 Operational System Development		0303140F Information Systems Security Program						5231 AF Key Management Infrastructure (AF KMI)		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5231 AF Key Management Infrastructure (AF KMI)	4.130	8.602	15.567	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	37	50	10	0	0	0	0	0		

NOTE:

In FY10, the Key Management Equipment Modernization (KMEM) concept refinement and development effort transfers from ISSP Project 675100, Cryptographic Modernization, to Project 675231, AF KMI, for integral KMI development. The KMEM project develops the KOV-21 follow-on crypto engine that will be utilized with the KMI "next generation fill device" under development.

(U) **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; voice callwords; and communications security (COMSEC) publications 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 AF Key Management Infrastructure (KMI) Program's R&D efforts will include: building the AF KMI architecture; defining all of its linkages; building the linkage interfaces that will allow them to communicate; and other "last mile" development. (See NOTE below for detailed explanation of the "last mile" work.) Activities also include studies and analysis to support both current program planning and execution and future program planning.

The DoD KMI will greatly improve protection of national, security-related information by substantially enhancing confidentiality, integrity, and non-repudiation characteristics over the legacy EKMS 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 take the man "out-of-the-loop" in the distribution of crypto key materials.

This project is in Budget Activity 7, Operational System Development, because it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

NOTE: In parallel, 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. (See BPAC 675100, this PE, for the AF CM Program supporting 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) keying material from a KMI client to a new generation ECU will need to be handled in the early years by one of two data transfer devices. CPSG and NSA are exploring new key delivery methods for KMI CI-3: "Mobile" COMSEC Accounts that can be wheeled out to platforms and remote ECUs; a new Simple Key Loader (SKL) for Special Operations that carries more

Exhibit R-2a, RDT&E Project Justification

DATE

May 2009

BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT NUMBER AND TITLE 5231 AF Key Management Infrastructure (AF KMI)
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keys and is smaller and lighter; and a method called "over-the-air-keying (OTAK)" to ultimately replace the data transfer devices.

(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue architectural planning, systems engineering, and studies and analyses for Migration to Key Management Infrastructure (includes acquisition planning, systems integration, Engineering support and SPO support)	1.917	3.592	4.048
(U) Continue next generation Last Mile Systems development & Concept Refinement (F22), and risk mitigation: End user key delivery devices; user node application software; and related computer-based training	2.213	5.010	4.501
(U) Break out next generation fill device development from Last Mile Systems Development	0.000	0.000	2.592
(U) Break out single point keying capability concept (studies, device and software) from Last Mile Systems Development	0.000	0.000	1.625
(U) Break out web-based key transfer to aircraft from Last Mile Systems development	0.000	0.000	2.300
(U) Design and develop the KOV-21 follow-on engine for the next generation fill device (effort transfers from ISSP BPAC 675100)	0.000	0.000	0.501
(U) Total Cost	4.130	8.602	15.567

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

	<u>FY 2008</u> <u>Actual</u>	<u>FY 2009</u> <u>Estimate</u>	<u>FY 2010</u> <u>Estimate</u>	<u>FY 2011</u> <u>Estimate</u>	<u>FY 2012</u> <u>Estimate</u>	<u>FY 2013</u> <u>Estimate</u>	<u>FY 2014</u> <u>Estimate</u>	<u>FY 2015</u> <u>Estimate</u>	<u>Cost to</u> <u>Complete</u>	<u>Total Cost</u>
(U) See AF Other Procurement PE 33140F	9.984	7.021	21.094	16.199	21.613	22.040	22.481	22.930	Continuing	TBD

Note: this line includes both AFEKMS and AF KMI Other Procurement (3080) money.

(U) **D. Acquisition Strategy**

All major contracts within this Project are awarded after full and open competition. Evolutionary Acquisition with Spirals being fielded in Capability Increments.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE
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BUDGET ACTIVITY 07 Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program				PROJECT NUMBER AND TITLE 5231 AF Key Management Infrastructure (AF KMI)				
(U) <u>Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u>												
Architectural Planning & Migration (to) the KMI Infrastructure Studies & Analyses & Systems Engineering	CPFF	MITRE, San Antonio, TX	0.630	0.818	Jan-08	0.873	Jan-09	1.090	Jan-10	Continuing	TBD	TBD
Last Mile Concept Development/Refinement	T&M	SAIC, San Diego, CA	0.861	2.208	Jan-08	5.010	Jan-09	4.636	Jan-10	Continuing	TBD	TBD
Next Generation Fill Device	T&M	TBD	0.000	0.000		0.000		2.592	Jan-10	Continuing	TBD	TBD
Single Point Keying Capability Development	TBD	TBD	0.000	0.000		0.000		2.300	Jan-10	Continuing	TBD	TBD
Web-based Key Transfer to Aircraft	TBD	TBD	0.000	0.000		0.000		1.625	Apr-10	Continuing	TBD	TBD
KOV-21 Follow-on Engine Development	TBD	TBD	0.000	0.000		0.000		0.501	Jan-10	Continuing	TBD	TBD
Subtotal Product Development			1.491	3.691		6.597		13.562		Continuing	TBD	TBD
Remarks:	Product development for "Last Mile" under the KMI BPAC 675231 is expanded to include web-based keying for wide aircraft as a result of the F-22 concept development/refinement and the follow-on crypto engine for the next generation fill device(s). Zero-based transfer of \$50.3M from the Cryptographic Modernization BPAC 675100 to the KMI BPAC 675231. Approved during FY10 POM (CCN 10R2C001AN).											
(U) <u>Support</u>												
System Administrator	T&M	General Dynamics, San Antonio, TX	0.000	0.120	Jul-08	0.120	Jul-09	0.124	Jul-10	Continuing	TBD	TBD
Professional Acquisition Support Services	T&M	P. E. Systems, San Antonio, TX	0.000	0.126	Feb-08	1.573	Feb-09	1.548	Feb-10	Continuing	TBD	TBD
Engineering Technology Acquisition Support services (ETASS)	T&M	Jacobs Engineering, San Antonio, TX	0.000	0.193	Jan-08	0.312	Jan-09	0.333	Jan-10	Continuing	TBD	TBD
Subtotal Support			0.000	0.439		2.005		2.005		Continuing	TBD	TBD
Remarks:	Prior year acquisition support was provided on the ITSP II contract by Booz, Allen, Hamilton, San Antonio, Tx.											
(U) <u>Test & Evaluation</u>												
N/A											0.000	0.000
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>												
N/A											0.000	0.000
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			1.491	4.130		8.602		15.567		Continuing	TBD	TBD

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Project 5231

Exhibit R-3 (PE 0303140F)

Exhibit R-4, RDT&E Schedule Profile

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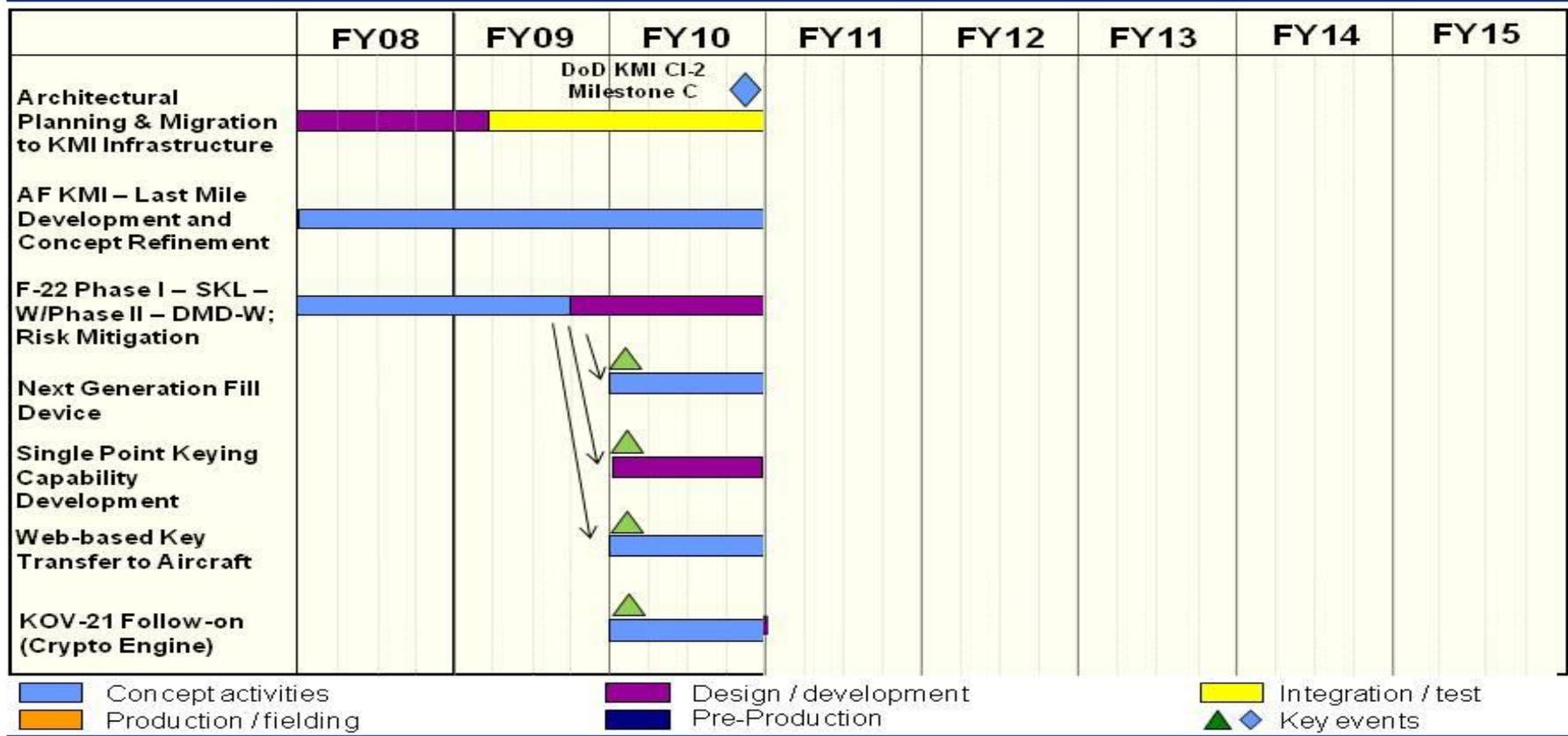
BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0303140F Information Systems Security Program

PROJECT NUMBER AND TITLE
5231 AF Key Management Infrastructure (AF KMI)



ISSP BPAC 675231: KMI Program Schedule



PB10 R-Docs

Depicted by in stallation/production flow

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Exhibit R-4a, RDT&E Schedule Detail	DATE May 2009
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT NUMBER AND TITLE 5231 AF Key Management Infrastructure (AF KMI)
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	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Schedule Profile			
(U) Architectural Planning & Migration (to) the KMI Infrastructure	1-4Q	1-4Q	1-4Q
(U) Develop next generation Last Mile Systems & Concept Refinement (F-22)	1-4Q	1-4Q	1-4Q
(U) Next Generation Fill Device			1-4Q
(U) Single Point Keying Study and Capability			1-4Q
(U) Web-based Key Transfer to Aircraft			1-4Q
(U) KOV-21 Follow-on Engine			2-4Q

Exhibit R-2a, RDT&E Project Justification

DATE
May 2009

BUDGET ACTIVITY 07 Operational System Development					PE NUMBER AND TITLE 0303140F Information Systems Security Program			PROJECT NUMBER AND TITLE 7820 Computer Security RDT&E: Firestarter		
Cost (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
7820 Computer Security RDT&E: Firestarter	23.643	20.395	7.466	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

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. As one of the Air Force managers for IA R&D, the PMO ensures that 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. 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 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), Department 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, acquire, and integrate emerging IA 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 it addresses the development and transition of information security, protection, and defensive capabilities and technologies.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue development of cyber forensic tools and methodologies (FY09 \$3.2M Cong. Add)	0.786	4.095	0.980
(U) Break out efforts for Cyber Threat Recognition (from cyber forensic tools & methodologies)			0.846
(U) Break out efforts for Cyber Threat Attribution and Mitigation (from cyber forensic tools & methodologies)			0.972
(U) Completed development of technology for self-healing, self-regenerative systems (to include automated system recovery)	1.383	0.000	0.000
(U) Continue development of information attack correlation methodologies	1.231	0.880	0.492
(U) Completed development of methodologies for Steganography Detection and Dynamic Quarantine of Worms	0.871	0.000	0.000
(U) Continue effort to develop metrics for reliable information assurance (IA) measurement and testing	0.739	0.652	0.230
(U) Continue development of secure interoperable distributed agent computing	0.939	0.825	0.385
(U) Continue effort to provide active response, dynamic policy Enforcement and computer/network attack attribution	1.679	1.595	0.873

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Project 7820

Exhibit R-2a (PE 0303140F)

Exhibit R-2a, RDT&E Project Justification	DATE May 2009
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BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT NUMBER AND TITLE 7820 Computer Security RDT&E: Firestarter
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(U) B. Accomplishments/Planned Program (\$ in Millions)	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Continue effort to provide dynamic, cost effective, risk mitigation information assurance techniques for wireless networks and systems	0.793	0.557	0.530
(U) Continue effort to provide IA/Cyber modeling and simulation for mission impact assessment and dynamic network security planning	0.723	0.520	0.203
(U) Continue effort to provide secure coalition IA data management, collaboration, and visualization	0.914	0.602	0.302
(U) Continue Cyber Security Bots	1.879	1.376	0.360
(U) Continue Integrated Airborne Network Security IO Platform	1.031	0.982	0.100
(U) Continue effort to transition DARPA/DTO/IARPA/DHS information assurance (IA) technology into AF Information Protection, Detection, & Response architecture (includes: support for terrestrial network defense overarching strategy; development of technology demonstrations and prototypes for IA of airborne IP networking; and identify and develop solutions for IA in space systems)	10.675	5.209	0.900
(U) Break out support for terrestrial network defense overarching strategy (from DARPA/etc. IA technology transition effort)			0.095
(U) Break out development of technology demonstrations and prototypes for information assurance of airborne IP networking (from DARPA/etc. IA technology transition effort)			0.098
(U) Break out efforts to identify and develop solutions for information assurance in space systems (from DARPA/etc. IA technology transition effort)			0.100
(U) Initiate Remote Suspect Identification (FY09 Congressional Add)		3.102	
(U) Total Cost	23.643	20.395	7.466

(U) C. Other Program Funding Summary (\$ in Millions)	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) N/A										
(U) N/A										

(U) D. Acquisition Strategy
All major contracts within this project are awarded after full and open competition utilizing evolutionary capability and incremental development.

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Exhibit R-3, RDT&E Project Cost Analysis

DATE

May 2009

BUDGET ACTIVITY				PE NUMBER AND TITLE					PROJECT NUMBER AND TITLE			
07 Operational System Development				0303140F Information Systems Security Program					7820 Computer Security RDT&E: Firestarter			
<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2008 Cost</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>FY 2010 Cost</u>	<u>FY 2010 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
(U) <u>Product Development</u> FFRDC (MITRE)	CPFF	Multiple Locations	6.862	17.222	Jan-08	0.300	Jan-09	0.250	Jan-10	Continuing	TBD	TBD
Multiple Contractors	CPFF	Multiple Locations	105.668	6.056	Jan-08	19.250	Jan-09	5.244	Jan-10	Continuing	TBD	TBD
Multiple Universities	CPFF	Multiple Locations	16.116	0.365	Jan-08	0.845	Jan-09	1.972	Jan-10	Continuing	TBD	TBD
Subtotal Product Development			128.646	23.643		20.395		7.466		Continuing	TBD	TBD
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.											
(U) Total Cost			128.646	23.643		20.395		7.466		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE
May 2009

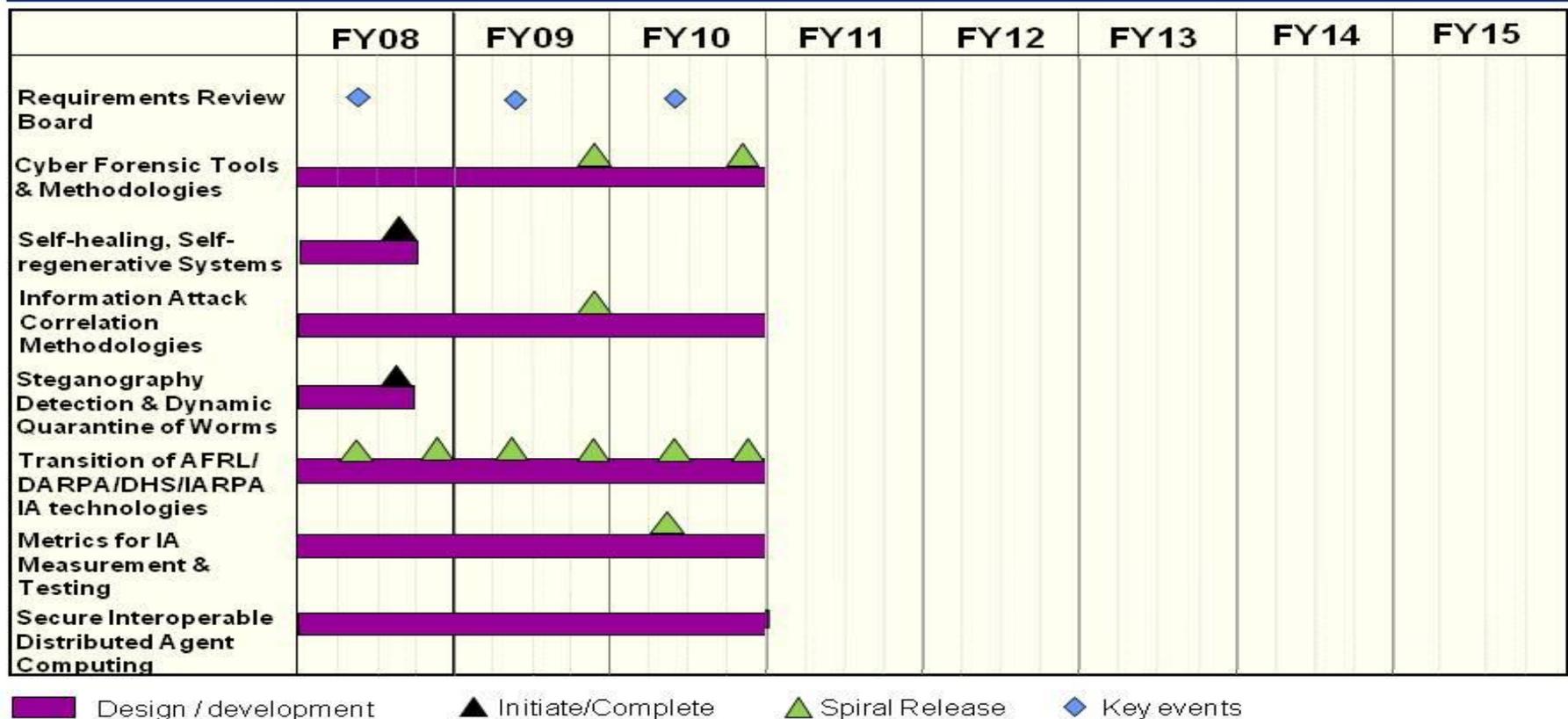
BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0303140F Information Systems Security Program

PROJECT NUMBER AND TITLE
7820 Computer Security RDT&E: Firestarter



ISSP BPAC 677820: Firestarter Program Schedule (p1 of 3)



PB10 R-Docs

Depicted by installation/production flow

1

Exhibit R-4, RDT&E Schedule Profile

DATE
May 2009

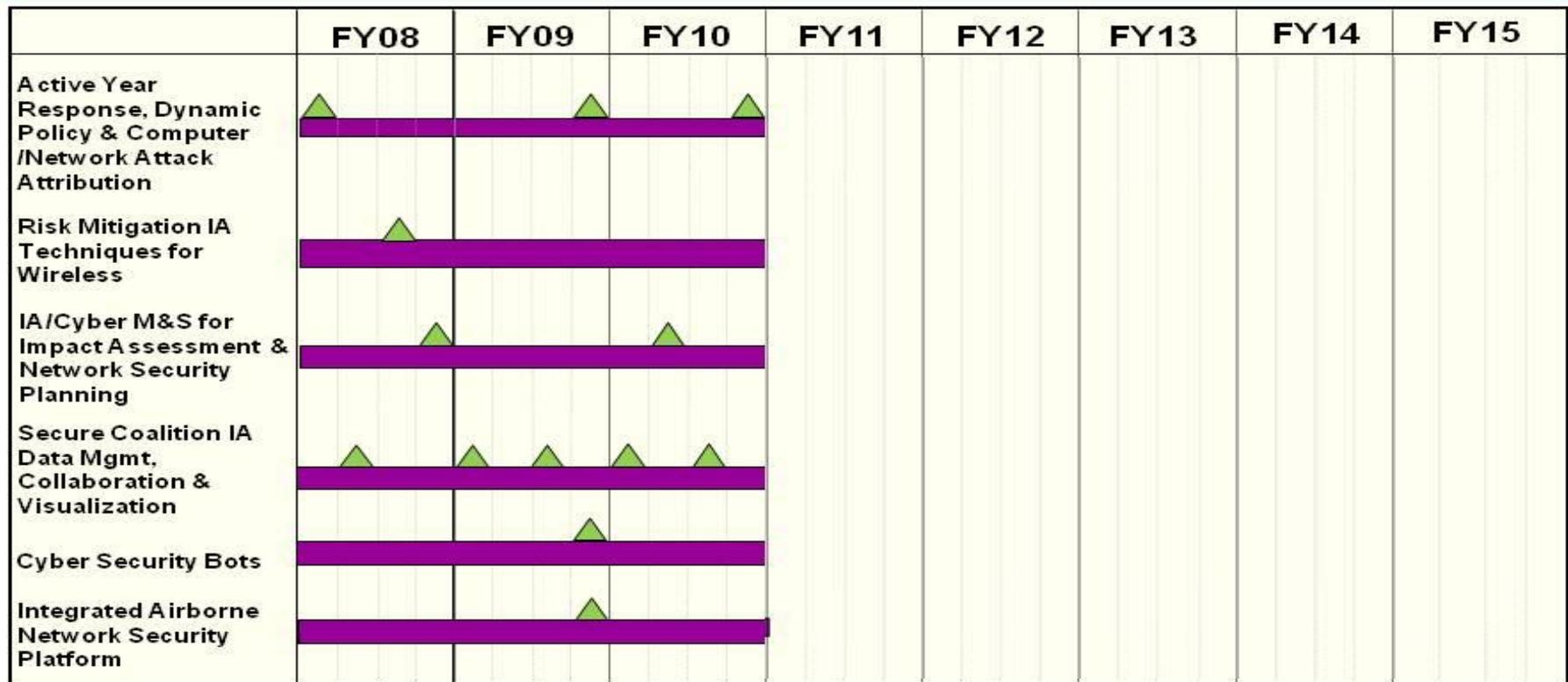
BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0303140F Information Systems Security Program

PROJECT NUMBER AND TITLE
7820 Computer Security RDT&E: Firestarter



ISSP BPAC 677820: Firestarter Program Schedule (p2 of 3)



Design / development
 Initiate/Complete
 Spiral Release
 Key events

PB10 R-Docs

Depicted by installation/production flow

Exhibit R-4, RDT&E Schedule Profile

DATE

May 2009

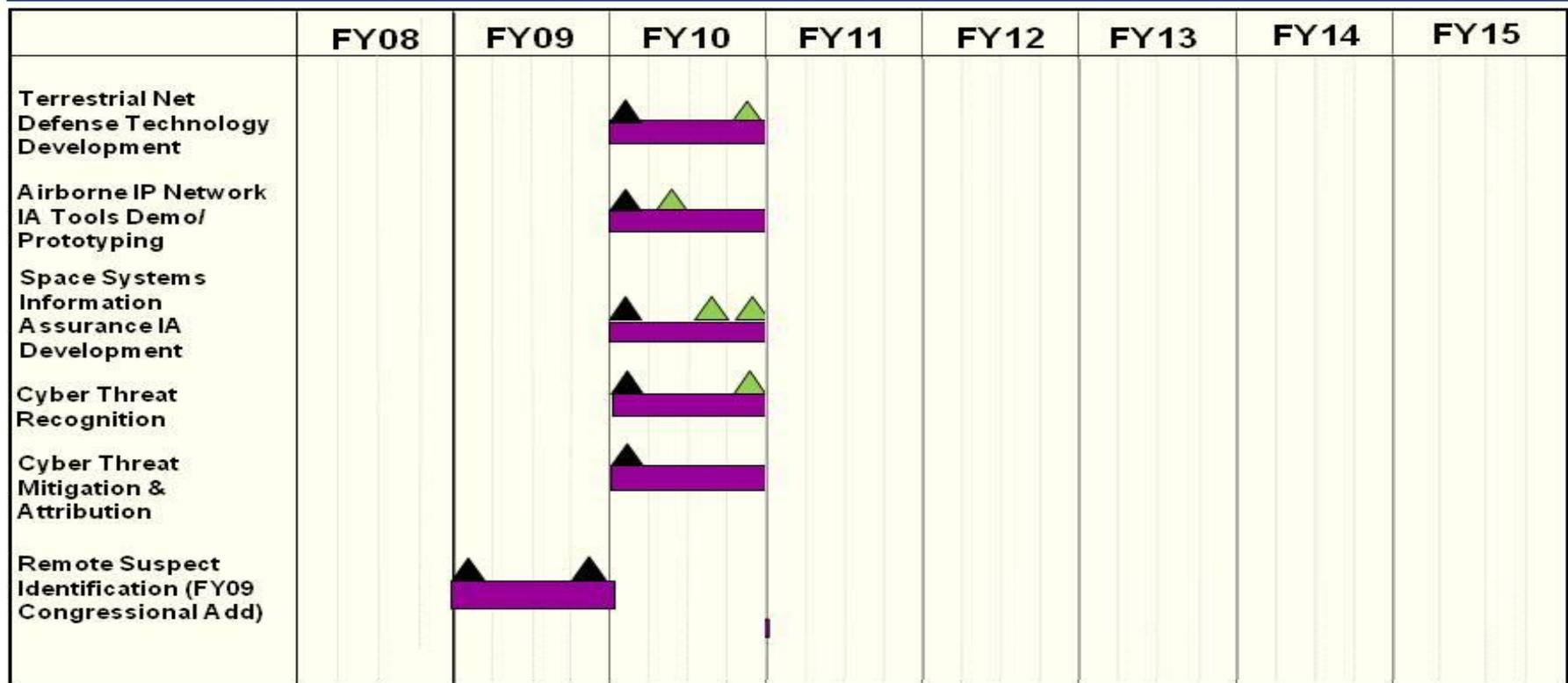
BUDGET ACTIVITY
07 Operational System Development

PE NUMBER AND TITLE
0303140F Information Systems
Security Program

PROJECT NUMBER AND TITLE
7820 Computer Security RDT&E:
Firestarter



ISSP BPAC 677820: Firestarter Program Schedule (p3 of 3)



■ Design / development ▲ Initiate/Complete ▲ Spiral Release ◆ Key events

PB10 R-Docs

Depicted by installation/production flow

3

UNCLASSIFIED

Exhibit R-4a, RDT&E Schedule Detail		DATE May 2009		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE		
07 Operational System Development	0303140F Information Systems Security Program	7820 Computer Security RDT&E: Firestarter		
		<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
(U) Schedule Profile				
(U) Requirements Review Boards		2Q	2Q	2Q
(U) Continue development of cyber forensic tools and methodologies (includes cyber threat recognition, mitigation and attribution) (FY09 \$3.2M Cong. Add)		1-4Q	1-4Q	1-4Q
(U) Break out efforts for Cyber Threat Recognition (from cyber forensic tools & methodologies)				1-4Q
(U) Break out efforts for Cyber Threat Attribution and Mitigation (from cyber forensic tools & methodologies)				1-4Q
(U) Completed development of technology for self-healing, self-regenerative systems		1-3Q		
(U) Continue information attack correlation methodologies		1-4Q	1-4Q	1-4Q
(U) Completed development of methodologies for Steganography Detection and Dynamic Quarantine of Worms		1-3Q		
(U) Continue effort to develop metrics for reliable information assurance (IA) measurement and testing		1-4Q	1-4Q	1-4Q
(U) Continue secure interoperable distributed agent computing		1-4Q	1-4Q	1-4Q
(U) Continue to develop active response, dynamic policy enforcement, and computer/network attack attribution		1-4Q	1-4Q	1-4Q
(U) Continue risk mitigation IA techniques for wireless networks and systems		1-4Q	1-4Q	1-4Q
(U) Continue IA/Cyber modeling and simulation for mission impact assessment and dynamic network security planning		1-4Q	1-4Q	1-4Q
(U) Continue secure coalition IA data management collaboration and visualization		1-4Q	1-4Q	1-4Q
(U) Continue Cyber Security Bots (Cybercraft)		1-4Q	1-4Q	1-4Q
(U) Continue Integrated Airborne Network Security IO platform		1-4Q	1-4Q	1-4Q
(U) Continue effort to transition DARPA/DTO/IARPA/DHS information assurance (IA) technology into AF Information Protection, Detection, & Response architecture (includes: support for terrestrial network defense overarching strategy; development of technology demonstrations and prototypes for IA of airborne IP networking; and identify and develop solutions for IA in space systems)		1-4Q	1-4Q	1-4Q
(U) Break out support for terrestrial network defense overarching strategy for tools, architecture, protocols, and technologies (from DARPA/etc. IA technology transition effort)				1-4Q
(U) Break out development of technology demonstrations and prototypes for information assurance of airborne IP networking (from DARPA/etc. IA technology transition effort)				1-4Q
(U) Break out efforts to identify and develop solutions for information assurance in space systems				1-4Q

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Project 7820

Exhibit R-4a (PE 0303140F)

Exhibit R-4a, RDT&E Schedule Detail

DATE

May 2009

BUDGET ACTIVITY

07 Operational System Development

PE NUMBER AND TITLE

**0303140F Information Systems
Security Program**

PROJECT NUMBER AND TITLE

**7820 Computer Security RDT&E:
Firestarter**

(from DARPA/etc. IA technology transition effort)

(U) Complete Remote Suspect Identification (FY09 Congressional Add)

1-4Q