

# UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					PE 0303140F I Information Systems Security Program							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	36.074	42.973	34.612	0.000	34.612	29.788	11.156	12.380	12.604	Continuing	Continuing
674861: EKMS (Electronic Key Management System)	-	0.922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
675100: Cryptographic Modernization	-	33.231	39.712	33.159	0.000	33.159	29.787	11.156	12.379	12.604	Continuing	Continuing
675231: AF Key Management Enterprise (AF KME)	-	1.921	3.261	1.453	0.000	1.453	0.001	0.000	0.001	0.000	Continuing	Continuing

## A. Mission Description and Budget Item Justification

Information Systems Security Program - Includes resources, manpower authorizations, necessary facilities and equipment required to perform INFOSEC research and development, to provide INFOSEC services, to procure INFOSEC products required to secure telecommunications and information systems when such products are separately procurable from host systems, and to provide INFOSEC maintenance and support. Also includes costs associated with the protection afforded to telecommunications and information systems which process sensitive data and efforts to ensure authenticity, integrity, and availability of the information and the system.

The Information Systems Security Program (ISSP) Element provides cradle-to-grave research, development, acquisitions, supply, sustainment, depot maintenance, and demilitarization of the Air Force (AF) cryptographic and key distribution /management systems (known as the Key Management Enterprise (KME)). ISSP delivers on rising national, DoD, and AF priorities to address cyber security threats and increasing war-fighter dependence on cyberspace. The AF and the DoD require the capability to secure, collect, process, store, and disseminate an uninterrupted flow of information, while denying an adversary the ability to intercept, collect, destroy, interpret, or manipulate our information flows. Secure communication allows the DoD to achieve and maintain decision superiority, the key to successful application of the military instrument of national power in modern, high-tempo, full-spectrum operations. AF Communications Security (COMSEC) equipment protects information such as war-fighter positions, mission planning, target strikes, commanders orders, intelligence, force strength, and force readiness and ensures adversaries cannot interpret, manipulate, or destroy information. When an adversary is capable of interpretation, manipulation, or destruction of the information used by the war-fighter, DoD military forces will suffer significant and/or devastating mission degradation that can result in loss of life and resources and/or exceptionally grave damage to national security.

The overall focus of the Research, Development, Test, and Evaluation (RDT&E) efforts within this program is to transform electronic key delivery and cryptographic devices to meet the next generation war-fighting requirements. These efforts are driven by the National Security Agency's (NSA) mandates to address decertifications, new requirements, and end of life issues. NSA's first tenet calls for an AF KME that permits a totally "man-out-of-the-loop" electronic crypto key distribution system from the generation of the key in the key processor all the way into the using End Crypto Unit (ECU). This eliminates the current key vulnerability of compromise /interruption by individuals transporting or loading the key. NSA's second tenet requires an inventory of cryptographic devices that are more robust, modular, scalable, capable, net-centric, and durable. This enables more effective and efficient performance including reduced inventory, expanded data rates, simplified upgrades, lower life cycle costs, and ensured global information grid-compatibility.

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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2019 Air Force **Date:** February 2018

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>
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This program element may include necessary civilian pay expenses required to manage, execute, and deliver ISSP weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

This program is in Budget Activity 7, Operational System Development, as these budget activities include development efforts, including the AF KME, to upgrade systems currently fielded or have approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>
Previous President's Budget	46.388	42.973	34.871	0.000	34.871
Current President's Budget	36.074	42.973	34.612	0.000	34.612
Total Adjustments	-10.314	0.000	-0.259	0.000	-0.259
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	-9.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.314	0.000			
• Other Adjustments	0.000	0.000	-0.259	0.000	-0.259

## Change Summary Explanation

Reductions in FY17 funding due to Congressional appropriations mark for "forward funding".

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program				Project (Number/Name) 674861 / EKMS (Electronic Key Management System)			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
674861: EKMS (Electronic Key Management System)	-	0.922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The Air Force Electronic Key Management System (AFEKMS) consists of multiple developments supporting the Air Force requirements portion of the DoD EKMS Program. The National Security Agency (NSA) acts as the Executive Agent for the DoD EKMS Program. AFEKMS, as part of the AF Key Management Enterprise (KME) and 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, with users across DoD Command, Control, Communications, Computers, and Intelligence (C4I) and all AF weapon systems. AFEKMS supports 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 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). Additionally, AFEKMS resources provide maintenance/distribution of AF Communications Security (COMSEC) publications for all AF users.

EKMS improves 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 via 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). The AFEKMS Program continues to provide software development to support emerging requirements during the KMI transition period. Activities include studies and analysis to support both current program planning and execution as well as development activities to extend life of the Simple Key Loader to bridge the gap between EKMS and the KMI implementation.

NOTE: AF KME 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 can be bundled and tracked as a unit, thereby allowing less management overhead and more focus on configuration management and control.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver ISSP weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>
<b>Title:</b> Fill /Load Device Post Production SW Development	0.922	0.000	0.000	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 Air Force								<b>Date:</b> February 2018			
<b>Appropriation/Budget Activity</b> 3600 / 7			<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>			<b>Project (Number/Name)</b> 674861 / <i>EKMS (Electronic Key Management System)</i>					
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>						<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	
<p><b>Description:</b> AF KME Post Production software development focuses on extending life of EKMS through transition to Key Management Infrastructure (KMI) capabilities. This will be accomplished via the Intermediary Application (iApp) software and Tri-Service development of KOV-21 replacement chip through Communications-Electronics Research, Development and Engineering Center (CERDEC) by U.S. Army. The iApp is designed to include all major Data Management Device (DMD) capabilities. The iApp is designed to meet certification and accreditation requirements and iApp user interface is designed for ease of adoption and minimal user training for EKMS DMD, Consolidated Tier 3 Testing Infrastructure (CETTI) User Application Software (UAS), and Simple Key Loader (SKL). The CERDEC effort develops a replacement KOV-21 Card for current Simple Key Loader (SKL) to extend life of SKL until KMI compatible key loader is available.</p> <p><b>FY 2018 Plans:</b> N/A</p> <p><b>FY 2019 Base Plans:</b> N/A</p> <p><b>FY 2019 OCO Plans:</b> N/A</p>											
<b>Accomplishments/Planned Programs Subtotals</b>						0.922	0.000	0.000	0.000	0.000	
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPAF 03 831010: COMSEC Equipment	10.622	9.378	0.000	-	0.000	0.000	0.000	-	-	Continuing	Continuing
<b>Remarks</b>											
Other Program Funding reflects Air Force Electronic Key Management System (AFEKMS) portion of Information Systems Security Program (ISSP) OPAF total.											
<b>D. Acquisition Strategy</b>											
Implement AF portion of the DoD's Cryptographic Modernization (CM) Initiative through modernization/modification efforts, in varying stages of the acquisition cycle, with focus on minimizing life cycle costs. 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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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 Air Force		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 674861 / <i>EKMS (Electronic Key Management System)</i>

### E. Performance Metrics

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force																Date: February 2018			
Appropriation/Budget Activity 3600 / 7								R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program								Project (Number/Name) 674861 / EKMS (Electronic Key Management System)			

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Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program	Project (Number/Name) 674861 / EKMS (Electronic Key Management System)

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
EKMS				
EKMS (Electronic Key Management System)	1	2017	3	2018



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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program				Project (Number/Name) 675100 / Cryptographic Modernization			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
675100: Cryptographic Modernization	-	33.231	39.712	33.159	0.000	33.159	29.787	11.156	12.379	12.604	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The AF Cryptographic Modernization Effort modernizes cryptographic devices protecting critical national security information across cyber domain operations. In September 2000, the Defense Review Board (DRB) tasked National Security Agency (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 also identified and have been replaced or are in the process of being replaced. 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 by device and algorithm in Chairman Joint Chiefs of Staff Notice (CJCSN) 6510. The DoD Cryptographic Modernization Program was established to develop a modern cryptographic base that provides this assured security robustness, interoperability, advanced algorithms, releasability, programmability, and compatibility with the future Key Management Infrastructure (KMI-See PE 0303140F, Project 67523, AF KMI for a full description). This AF effort supports an integrated effort across the cyber domain to transform to next-generation cryptographic capabilities. It provides U.S. forces and multinational and interagency partners the security needed to protect the flow and exchange of operational decision making information in accordance with national and international policy/standards, the validated operational requirements of the warfighters, and the intelligence communities.

The AF Cryptographic Modernization Effort 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 crypto devices with common solutions that are more robust, modular, scalable, and provide the durability to existing 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/execution and future program planning.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver ISSP weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.

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

	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>
<b>Title:</b> VINSON/ANDVT Cryptographic Modernization (VACM)	0.252	0.000	0.000	-	0.000

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Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program		Project (Number/Name) 675100 / Cryptographic Modernization		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p><b>Description:</b> VINSON (VHF(Very High Frequency)/UHF(Ultra High Frequency) Wideband Tactical Secure Voice System Cryptographic Equipment)/ANDVT (Advanced Narrowband Digital Voice Terminal) 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 Embedded Crypto)).</p> <p><b>FY 2018 Plans:</b> N/A</p> <p><b>FY 2019 Base Plans:</b> N/A</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> N/A</p>						
<p><b>Title:</b> Technology Development (TD)</p> <p><b>Description:</b> Technical Development (TD) conducts concept development and early systems engineering activities to address evolving threats identified by NSA, algorithm obsolescence and Communications Security (COMSEC) capability gaps across AF and DoD mission areas. Identifies, further matures, or sponsors technology development efforts, plans and executes foundational technology demonstration efforts to reduce risks to COMSEC acquisitions. Analyze capability gaps that translate to requirements, build capability roadmaps, execute studies, and support cost estimates prior to Materiel Development Decision (MDD) for future cryptographic initiatives. Mitigates risk for thousands of AF and DoD users affected by algorithm obsolescence and ensures required security upgrades can be integrated into the AF and DoD enterprise. Works closely with NSA and other services to develop standards that increase security, prevent stove-pipe implementations, and facilitate efficient COMSEC enterprise management lifecycle management. Includes but is not limited to: Remote Integrated Toolkit (REMIT), Common Crypto Management, Transmission Security (TRANSEC) modernization, Trusted Sensors, Crypto Enterprise Tracking (CET), Advanced Cryptographic Capabilities Increment One (ACC Inc 1)/Cryptographic Modernization 2, Trusted Systems Network (TSN)/Supply Chain Risk Management (SCRM), Ground Operating Equipment (GOE) and MILSATCOM Crypto Mod (MCM).</p> <p><b>FY 2018 Plans:</b> - Continue analysis and studies in support of Advanced Cryptographic Capabilities Increment One (ACC Inc 1) related efforts to include technical analysis on devices without suitable replacement options and the identification</p>		2.193	1.684	1.215	-	1.215

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
of operational gaps as a result of ACC Inc 1. Execute analysis of the entire USAF cryptographic inventory to include the unidentified cryptographic devices that are not life cycle managed within CCSD. Conduct CONOPS analyses across the USAF enterprise to identify users that could utilize symmetric keying to mitigate replacement costs. Determine current industry developments and assess the replacement potential for ACC Inc 1 impacted devices.						
- Continue analysis of studies for Cryptographic Modernization 2 (CM2) related efforts to include identification of crypto devices, associated capability gaps, determining program approach for devices that require replacement, conducting gap analysis, and comprehensive study of pre-placed key capable devices. Continue analysis and studies of CM2 related gaps to include next generation applicability, future algorithm impact, and vendor tracking of next generation devices. Identify various CCSD led efforts that are impacted by CM2 and sponsor various studies to determine if new algorithms are capable of operating in existing equipment.						
- Continue analysis of TRANSEC capability gaps, identify potential changes to TRANSEC approaches that may result in changes to key stream. Sponsor studies that support the early identification deltas early on and determine technology development and maturation efforts.						
- Continue to refine analysis for the replacement or upgrade of over 168,000 Air Force devices in support of the ACC Inc 1 initiative						
- Manage the CCSD hardware replacement effort in support of ACC Inc 1						
- Complete the CCSD ACC Inc 1 Implementation Plan, a living document that will outline the roles and responsibilities, provide guidance on software fielding and hardware replacements, and explain the testing and support requirements for CCSD						
- Continue analysis support to DOD CIO and NSA for development of the updated CM2 ICD						
- Continue to analyze parts obsolescence, determine crypto modernization requirements, and recommend specific materiel solutions						

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Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program		Project (Number/Name) 675100 / Cryptographic Modernization			
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<ul style="list-style-type: none"><li>- Assist CCSD Programs with developing their system security documentation (OPSEC Plans, Cybersecurity Plans, Security Classification Guidance (SCG), Integrated Threat Assessments (IT As), Anti-Tamper Planning and Program Protection Planning</li><li>- Continue to evaluate Trusted Sensor candidate solutions for network intrusion detection and prevention</li><li>- Develop the necessary TSN processes to deliver a trusted system (integrating all source supply chain information, threat to risk methodologies, mapping of both SCRM Key Practices and Risk Management Framework (RMF) mitigations, risk strategies, and technical mitigations for both H/W and S/W)</li><li>- Provide both counterfeit detection (H/W analysis) and Malware Analysis (S/W analysis)</li><li>- Assist CCSD programs with TSN contract language and clauses to effectively acquire trusted systems</li><li>- Continue to refine analysis for the replacement or upgrade of Ground Operating Equipment (GOE) devices in support of the GOE initiative and associated activities in support of preparation for Decision Point 2 (DP-2) for a Materiel Development Decision (MDD)</li><li>- Conduct analysis for the replacement or upgrade of legacy MILSATCOM crypto devices in support of the MILSATCOM Crypto Modernization (MCM) Initiative and associated activities in support of preparation for Decision Point 1 (DP-1) approval to refine a MCM CCTD and pursue a MOD at DP-2</li></ul> <p><b>FY 2019 Base Plans:</b></p> <ul style="list-style-type: none"><li>- Continue to manage the CCSD execution of hardware replacement and software updates in support of the ACC Inc 1 initiative</li><li>- Will provide technical guidance in support of ACC Inc 1 operational, testing and evaluation (OT&amp;E)</li><li>- Will analyze ACC Inc 1 impacts to AF users and provide technical guidance in support of user integration and test and follow-on fielding of modified crypto equipment</li><li>- Will identify AF materiel solutions requiring modification or acquisition under the joint CM2 ICD to AF Lead Command to initiate 1067 modification or JCI OS documentation for follow-on acquisition</li></ul>							

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>- Will assist CCSD Programs with developing their system security documentation (OPSEC Plans, Cybersecurity Plans, Security Classification Guidance (SCG), Integrated Threat Assessments (IT As), Anti-Tamper Planning and Program Protection Planning</p> <p>- Will continue to refine analysis for the replacement or upgrade of legacy MILSATCOM crypto devices in support of the MCM Initiative and associated activities in support of preparation for Decision Point 2 (DP- 2), as well as refinement of development/acquisition strategies in support of MCM Initiative MOD</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding decrease owing to higher Air Force priorities.</p>						
<p><b>Title:</b> Mini Crypto (MC)</p> <p><b>Description:</b> Mini Crypto (MC) is developing a Tactical Key Management (TKM) miniaturized cryptographic solution to protect Secret and Below (SaB) Command and Control (C2) and mission data for Size, Weight, and Power (SWaP) constrained platforms which currently have no cryptographic capability and transmit in the clear. MC's Tactical Key Management (TKM) solution has a self-generating key which removes the requirement for pre-placed keys and has the ability to add or remove users as tactical situation dictates.</p> <p><b>FY 2018 Plans:</b> -Complete Milestone C documentation updates -Receive NSA Certification - Seek Milestone C approval from Program Executive Officer (PEO) -Perform Sufficiency of Operational Test Review (SOTR) -Support Mini Crypto Users to collect platform integration and operational assessment data -Prepare Engineering Change Proposals to address deficiencies identified in testing</p> <p><b>FY 2019 Base Plans:</b> N/A</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funding decreased because effort will end in FY 2018.</p>		7.668	2.506	0.000	-	0.000
<p><b>Title:</b> Space Modular Common Crypto (SMCC)</p> <p><b>Description:</b> Space Modular Common Crypto (SMCC) provides Information Assurance (IA) services for new satellite architectures via a family of common crypto solutions that integrate Telemetry, Tracking, and</p>		18.565	33.587	28.459	-	28.459

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Commanding (TT&C), Mission Data (MD), and/or Transmission Security (TRANSEC) key stream functions for the Air Force and Intelligence Community space systems.  <b>FY 2018 Plans:</b> -Continue TMRR activities -Continue SMCC ACS development contract activities -Continue SMCC MLCS development contract activities  <b>FY 2019 Base Plans:</b> -Will ramp down TMRR activities -Will continue SMCC ACS development contract activities -Will ramp down SMCC MLCS development contract activities  <b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> Funded decreased due to a ramp down in SMCC development contract activities						
<b>Title:</b> Algorithm Transition Compliance and Support  <b>Description:</b> Supports AF Space Command (AF Cyber Core Function Lead) in Algorithm Transition Compliance and Support provides Information Assurance (IA} support that performs transition and governance efforts to effectively analyze 30 classified algorithms, thousands of associated COMSEC keying material short titles, and hundreds of equipment types. This effort also tracks and reports algorithm/device integration across the AF. Analysis (Analyzes), determines and monitors mitigation strategies; develops and plans technology demonstration efforts to ensure new algorithms can be integrated into the AF enterprise. Assesses current state of AF crypto across the enterprise. Develops and maintains a classified Crypto Modernization (CM) database system that tracks status of AF crypto device types that (and) is accessible by the CM community via SIPRNET. Efforts support NC3, ISR, all AF platforms, and most ground networks.  <b>FY 2018 Plans:</b> -Continue to support algorithm transition and governance efforts to effectively track, analyze, and report on AF use of 30 classified algorithms in over 270,000 devices across the AF enterprise comprised of over 300 equipment types/families and requiring thousands of associated COMSEC keying material short titles  - Continue analysis and development of a method and/or process to accurately transition, track, and manage crypto assets and COMSEC across the AF		1.824	1.835	3.385	-	3.385

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Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program	Project (Number/Name) 675100 / Cryptographic Modernization				
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p>- Provide Crypto-Mod analysis database to AF community to assist in annual assessments during long term effort to develop enterprise capabilities based assessment (CBA) to identify management capability gaps</p> <p>- Conduct annual assessment of the state of the AF COMSEC report card and update Crypto and Cyber Roadmap</p> <p>- Continue to evaluate NSA recommendations for Advanced Cryptographic Capabilities suite of algorithms and identify related tasks which affect the AF</p> <p><b>FY 2019 Base Plans:</b></p> <p>- Will continue to analyze the AF Crypto and Cyber enterprise and provide situational awareness to significant risks related to aging inventory and vulnerabilities to the key exchange process</p> <p>- Will provide assessment of Commercial Solutions for Classified (CSfC) and Quantum Resistance Encryption impacts</p> <p>- Will continue to provide analysis of adequacy of COMSEC and Cyber products in support of NSA requirements, sustainment issues and the state of technology</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b></p> <p>Funding increased due to Crypto Modernization 2 (CM2) support</p>							
<p><b>Title:</b> Missile Electronic Encryption Device (MEED) Modification</p> <p><b>Description:</b> The MEED Modification upgraded the legacy Missile Entry Control System (MECS) devices used to securely authenticate personnel attempting access to this Nation's ground-based Intercontinental Ballistic Missile (ICBM) facilities. This effort will bring the MEED equipment into compliance with current NSA information assurance (IA) security design guidance.</p> <p><b>FY 2018 Plans:</b></p> <p>N/A</p> <p><b>FY 2019 Base Plans:</b></p>			1.531	0.000	0.000	-	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018			
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program	Project (Number/Name) 675100 / Cryptographic Modernization				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
N/A						
<p><b>Title:</b> Classified Data At Rest (CDAR)</p> <p><b>Description:</b> CDAR plans to develop and procure an NSA approved modernized cryptographic solution(s) for use in ISR, C2, and EW platforms exposed to hostile/uncontrolled environments. The enterprise cryptographic solution will encrypt/decrypt Top Secret and Below (TSAB) data at rest residing in a variety of data storage environments.</p> <p><b>FY 2018 Plans:</b> -Complete systems engineering and concept development activities leading to Material Development Decision (MDD) -Conduct material solution analysis</p> <p><b>FY 2019 Base Plans:</b> -Will continue material solution analysis</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> N/A</p>		0.100	0.100	0.100	-	0.100
<p><b>Title:</b> Integrated Data Denial (IDD) Crypto</p> <p><b>Description:</b> The United States Nuclear Detonation (NUDET) Detection System (USNDS) Program and Air Force Space Command have identified a need to replace the Integrated Data Denial (IDD) crypto devices within the USNDS architecture. The primary purpose of USNDS is to detect, locate, and report nuclear detonation in Earth's atmosphere or near space in near real time. IDD is a cryptographic component within the USNDS ground systems and is currently facing obsolescence issues.</p> <p><b>FY 2018 Plans:</b> N/A</p> <p><b>FY 2019 Base Plans:</b> N/A</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b> N/A</p>		1.098	0.000	0.000	-	0.000
Accomplishments/Planned Programs Subtotals		33.231	39.712	33.159	-	33.159



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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force									Date: February 2018		
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program				Project (Number/Name) 675100 / Cryptographic Modernization			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• OPAF 03 831010: COMSEC Equipment	50.045	57.527	42.885	-	42.885	50.356	49.107	49.951	49.951	Continuing	Continuing
Remarks											
Remarks: Other Program Funding reflects Crypto Modernization (CM) portion of Information Systems Security Program (ISSP) OPAF total.											
D. Acquisition Strategy											
Implement AF portion of the DoD's Cryptographic Modernization (CM) Initiative through modernization/modification efforts, in varying stages of the acquisition cycle, with focus on minimizing life cycle costs. The CM 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 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.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program				Project (Number/Name) 675100 / Cryptographic Modernization					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
VINSON/ANDVT Cryptographic Modernization (VACM)	C/CPIF	Raytheon Company : Ft Wayne, IN	-	0.240	Dec 2017	-		-		-		-	Continuing	Continuing	47.863
VINSON/ANDVT/ Cryptographic Modernization (ARC-234)	MIPR	Defense Microelectronic Activity : Sacramento, CA	-	-		-		-		-		-	Continuing	Continuing	32.737
Space Telemetry, Tracking & Commanding (TT&C) Aerospace Vehicle Equipment (AVE Inc 1)	C/CPFF	General Dynamics C4 Systems : Scottsdale, AZ	-	-		-		-		-		-	Continuing	Continuing	-
Tech Development	Various	MULTIPLE : MULTIPLE	-	0.250	Jan 2017	0.269	Jan 2018	0.226	Jan 2019	-		0.226	Continuing	Continuing	-
Mini Crypto	C/CPIF	VIASAT, INC : Carlsbad, CA	-	6.359	Apr 2017	1.717	Apr 2018	1.444	Apr 2019	-		1.444	Continuing	Continuing	-
Space Modular Common Crypto (SMCC)	C/CPIF	MULTIPLE : MULTIPLE	-	17.154	Feb 2017	27.166	Dec 2017	22.853	Dec 2018	-		22.853	Continuing	Continuing	-
Missile Electronic Encryption Device (MEED) Modernization	C/FFP	SAIC : Tampa, FL	-	0.472	Aug 2017	-		-		-		-	Continuing	Continuing	-
Subtotal			-	24.475		29.152		24.523		-		24.523	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
VINSON/ANDVT Crypto Mod (VACM)	MIPR	MULTIPLE : MULTIPLE	-	-		-		-		-		-	Continuing	Continuing	5.001
Mini Crypto	Various	MULTIPLE : MULTIPLE	-	0.656	Mar 2017	0.441	Mar 2018	0.371	Mar 2019	-		0.371	Continuing	Continuing	-
Space Modular Common Crypto (SMCC)	Various	MULTIPLE : MULTIPLE	-	0.360	Oct 2016	2.153	Dec 2017	1.811	Dec 2018	-		1.811	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program				Project (Number/Name) 675100 / Cryptographic Modernization					
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Missile Electronic Encryption Device (MEED) Modernization	MIPR	MULTIPLE : MULTIPLE	-	0.234	Feb 2017	-		-		-		-	Continuing	Continuing	-
Subtotal			-	1.250		2.594		2.182		-		2.182	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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	-	7.506	Dec 2016	7.966	Dec 2017	6.454	Dec 2018	-		6.454	Continuing	Continuing	-
Subtotal			-	7.506		7.966		6.454		-		6.454	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	33.231		39.712		33.159		-		33.159	Continuing	Continuing	N/A
Remarks															

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2019 Air Force			<b>Date:</b> February 2018		
<b>Appropriation/Budget Activity</b> 3600 / 7		<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>			<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b><i>Cryptographic Modernization APPN 3600, BA07, PE 0303140F, BPAC 675100</i></b>																												
VACM																												
Technology Development																												
Mini Crypto (MC)																												
Space Modular Common Crypto (SMCC)																												
Missile Electronic Encryption Device (MEED) Modernization																												
Classified Data at Rest (CDAR)																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 Air Force			<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675100 / <i>Cryptographic Modernization</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Cryptographic Modernization APPN 3600, BA07, PE 0303140F, BPAC 675100</i></b>				
VACM	1	2017	4	2017
Technology Development	1	2017	4	2023
Mini Crypto (MC)	1	2017	3	2018
Space Modular Common Crypto (SMCC)	1	2017	1	2020
Missile Electronic Encryption Device (MEED) Modernization	1	2017	1	2018
Classified Data at Rest (CDAR)	1	2017	3	2021

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program				Project (Number/Name) 675231 / AF Key Management Enterprise (AF KME)			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
675231: AF Key Management Enterprise (AF KME)	-	1.921	3.261	1.453	0.000	1.453	0.001	0.000	0.001	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

## A. Mission Description and Budget Item Justification

The Air Force Key Management Enterprise (AF KME) 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 Agent 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) systems and for the Services' weapon systems. KMI represents a broad-scale replacement of the current Electronic Key Management System (EKMS). KMI will provide capabilities that will allow networked operation in consonance with the AF Information Network 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 EKMS. 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 KMI Program in concert with the DoD KMI Program is transitioning the Air Force from the legacy EKMS to modern DoD KMI and building the AF KMI Last Mile architecture. This Research and Development effort includes system engineering, development and testing to successfully implement the AF KMI Last Mile architecture as part of the AF Key Management Enterprise (KME). The AF KMI Last Mile is a holistic solution integrating the legacy and new and evolving cryptographic programs, materials, products, sources and consumers. The AF KMI Last Mile capabilities include as part of the AF KME distribution, management, and loading of cryptographic materials from the KMI (COMSEC account) to the end cryptographic unit (ECU). It builds the linkage interfaces that will allow KMI systems to communicate and integrate other related developments to meet operational needs. AF KMI Last Mile is currently in the Development Phase. Activities also include studies and analysis to support both current program planning and execution and future program planning.

In parallel with AF KMI, DoD and the Services are addressing the need for a new generation of future KMI-aware ECUs that will be capable of direct interaction with the DoD KMI Enterprise, under the Joint Crypto Modernization Initiative (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.

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Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018				
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program	Project (Number/Name) 675231 / AF Key Management Enterprise (AF KME)				
This program element may include necessary civilian pay expenses required to manage, execute, and deliver ISSP weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.							
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
<p><b>Title:</b> Air Force KMI Last Mile Space &amp; Naval Warfare Systems Command (SPAWAR) Support (Tier 3)</p> <p><b>Description:</b> Support includes architectural planning, systems engineering, testing and studies and analyses for migration to the Key Management Infrastructure (KMI) (includes acquisition planning, systems integration, engineering support and System Program Office (SPO) support). Transitioned existing key management capabilities to AF KMI Last Mile Tier 3.</p> <p><b>FY 2018 Plans:</b></p> <p>-Continue to provide annual resources to SPAWAR to plan and execute specific profile testing for all Air Force ECUs</p> <p>-Continue MS App development based upon the existing iAPP software</p> <p><b>FY 2019 Base Plans:</b></p> <p>-Will continue to provide annual resources to SPAWAR to plan and execute specific profile Air Force ECUs</p> <p>-Will continue and develop and integrate/test MS App with existing Tier 3 Key Loaders</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b></p> <p>Funding decreased due to ramping down of development and test efforts</p>			0.129	3.144	1.453	-	1.453
<p><b>Title:</b> Air Force KMI Last Mile (Tier 3)</p> <p><b>Description:</b> Air Force KMI Last Mile Tier 3 early system engineering, risk reduction and engineering development to include: concept development for distribution, load and management elements of last mile; studies and analyses for technology possibilities and prototyping efforts for the last mile; and development of a certified KMI-aware, Product Delivery Enclave - enabled key load device.</p> <p><b>FY 2018 Plans:</b></p> <p>Contract termination expenses.</p> <p><b>FY 2019 Base Plans:</b></p> <p>N/A</p> <p><b>FY 2018 to FY 2019 Increase/Decrease Statement:</b></p>			1.792	0.117	0.000	-	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2019 Air Force				<b>Date:</b> February 2018							
<b>Appropriation/Budget Activity</b> 3600 / 7		<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>		<b>Project (Number/Name)</b> 675231 / <i>AF Key Management Enterprise (AF KME)</i>							
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>						<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	
Funding decreased because effort ended in FY 2018.											
<b>Accomplishments/Planned Programs Subtotals</b>						1.921	3.261	1.453	-	1.453	
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019 Base</b>	<b>FY 2019 OCO</b>	<b>FY 2019 Total</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPAF 03 831010: <i>COMSEC Equipment</i>	3.972	2.283	2.673	-	2.673	2.643	1.971	2.931	2.984	Continuing	Continuing
<b>Remarks</b>											
Remarks: Other Program Funding reflects AF Key Management Infrastructure (KMI) portion of Information Systems Security Program (ISSP) OPAF total.											
<b>D. Acquisition Strategy</b>											
Implement AF portion of the DoD's Cryptographic Modernization (CM) Initiative through modernization/modification efforts, in varying stages of the acquisition cycle, with focus on minimizing life cycle costs. 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.											
<b>E. Performance Metrics</b>											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											



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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2019 Air Force</b>												<b>Date: February 2018</b>			
<b>Appropriation/Budget Activity</b> 3600 / 7						<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>						<b>Project (Number/Name)</b> 675231 / <i>AF Key Management Enterprise (AF KME)</i>			
<b>Product Development (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
AF KMI Last Mile	C/CPIF	L3 Comm : Camden, NJ	-	0.671	Mar 2017	2.574	Mar 2018	1.258	Mar 2019	-		1.258	Continuing	Continuing	13.364
<b>Subtotal</b>			-	0.671		2.574		1.258		-		1.258	Continuing	Continuing	N/A
<b>Support (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Engineering & Technical Documentation	SS/T&M	MITRE : San Antonio, TX	-	-		-		-		-		-	Continuing	Continuing	-
Engineering & Technical Acquisition Support Service	C/CPFF	Abacus Technology Corp. : Chevy Chase, MD	-	-		0.071	Jan 2018	-		-		-	Continuing	Continuing	-
AF KMI Last Mile (Tier 3)	MIPR	U.S. Navy SPAWAR : San Diego, CA	-	-		0.357	May 2018	-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			-	-		0.428		-		-		-	Continuing	Continuing	N/A
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2017</b>		<b>FY 2018</b>		<b>FY 2019 Base</b>		<b>FY 2019 OCO</b>		<b>FY 2019 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
KMI Last Mile	PO	46 TS : Eglin AFB, FL	-	0.000	Mar 2017	0.078	Mar 2018	-		-		-	Continuing	Continuing	-
NSA Test Support	MIPR	NSA : FT Meade, MD	-	-		-		-		-		-	Continuing	Continuing	-
KMI Last Mile TEST	MIPR	605 TES : Eglin AFB, FL	-	-		-		-		-		-	Continuing	Continuing	-
CERDEC/PD Net E	MIPR	US Army : Aberdeen Proving Ground, MD	-	-		-		-		-		-	Continuing	Continuing	-
Joint Interoperability Test Command	MIPR	JITC : Ft. Huachuca, AZ	-	-		-		-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program				Project (Number/Name) 675231 / AF Key Management Enterprise (AF KME)					
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			-	0.000		0.078		-		-		-	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	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	-	1.250	Dec 2016	0.181	Dec 2017	0.195	Dec 2018	-		0.195	Continuing	Continuing	-
Subtotal			-	1.250		0.181		0.195		-		0.195	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			-	1.921		3.261		1.453		-		1.453	Continuing	Continuing	N/A
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force										Date: February 2018																			
Appropriation/Budget Activity 3600 / 7										R-1 Program Element (Number/Name) PE 0303140F / Information Systems Security Program										Project (Number/Name) 675231 / AF Key Management Enterprise (AF KME)									

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
KME																												
SPAWAR Support																												
AF KMI Tier 3 Last Mile																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2019 Air Force		<b>Date:</b> February 2018
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0303140F / <i>Information Systems Security Program</i>	<b>Project (Number/Name)</b> 675231 / <i>AF Key Management Enterprise (AF KME)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>KME</b>				
SPAWAR Support	1	2017	4	2019
AF KMI Tier 3 Last Mile	1	2017	4	2018