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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2000	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303401F Communications Security				PROJECT 674861	
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
674861 Cryptologic 2000	0	0	4,857	4,700	5,511	5,507	4,017	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

NOTE: FY99 through FY00 funds are in PE 33140F. Beginning in FY01, funding for this effort is located in this PE.

(U) A. Mission Description
 The Cryptologic project consists of Air Force Electronic Key Management Systems (AFEKMS). AFEKMS, in concert with NSA's EKMS, 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 all AF weapon systems. AFEKMS replaces the existing physical distribution and management system providing COMSEC keying material for USAF Information Protection. Information Protection emphasizes access control, multi-level secure databases, trusted computing and information integrity. AFEKMS is a three tier system structure in a hierarchical arrangement. 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' capability. Tier 2 installations comprise the distribution network and tier 3 comprises the 'retail locations' where keying material leaves the AFEKMS and enters the End Item COMSEC Equipment (EICE) - the consumer.

Acquisition includes Commercial Off The Shelf (COTS) computers and software, contractor developed application software, Government Furnished Equipment (GFE) and software such as the NSA's Local COMSEC Management Software (LCMS). Also, USAF developed application software (UAS) is necessary for unique systems such as the F-22 and unique key fill requirements of EICE for other airborne platforms.

Current technology feed into deployed Tier 2 installations: A contract study begins in Oct 99 under NSA supervision to determine the scope of re-hosting Tier 2 workstations from the current UNIX equipment to either Windows NT or SUN Solaris operating systems. This study is expected to take 15-24 months to complete. If successful re-hosting is feasible, it would reduce the hardware replacements costs to 20% of the original cost of the equipment. The Browser currently being developed will also be added to Tier 2 during tech refreshes and system upgrades.

Given the complexity of emerging communication technologies, the growing complexity of desired DOD/AF applications of these technologies, and more recently the experience and insight we have gained in the last few years in the Cryptologic 2020 application, we see the need for a solid continuous R&D line to work the constantly emerging challenges in developing, acquiring and fielding state-of-the-art Key Management Infrastructure software and COMSEC equipment.

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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 1999 (\$ in Thousands)</u></p> <p>(U) \$0 Activity is Funded in PE 33140F (\$1.957)</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u></p> <p>(U) \$0 Activity is Funded in PE 33140F (\$1.233)</p> <p>(U) \$0 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$2,386 Program Office Support - for continued work on the Key Management Infrastructure (KMI) for the Defense Information Infrastructure Common Operation Environment (DII-COE) the Browser-Based Development effort & AF Public Key Infrastructure implementation</p> <p>(U) \$485 Tier 2 DII-COE Compliance</p> <p>(U) \$1,986 Local Management Device/Data Management Device (LMD/DMD) Browser Interface</p> <p>(U) \$4,857 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>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.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center;"><u>FY 1999</u></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget (FY 2000 PBR)</td> <td></td> <td></td> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td>(U) Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> f. Other</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2000 PBR</td> <td></td> <td></td> <td style="text-align: center;">4,857</td> <td></td> </tr> </tbody> </table>					<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>	(U) Previous President's Budget (FY 2000 PBR)			0		(U) Appropriated Value					(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions					f. Other					(U) Adjustments to Budget Years Since FY 2000 PBR			4,857	
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Project 674861	Page 2 of 5 Pages	Exhibit R-2 (PE 0303401F)																																																								

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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303401F Communications Security					PROJECT 674861		
(U) <u>C. Program Change Summary (\$ in Thousands) Continued</u>												
					<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>		<u>Total Cost</u>	
(U)	Current Budget Submit/FY 2001 PBR							4,857			TBD	
(U)	<u>Significant Program Changes:</u> N/A											
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>												
		<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>Cost to</u>		<u>Total Cost</u>	
		<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>			
(U)	AF RDT&E											
(U)	Other APPN											
(U)	APPN 3600/PE 33140F/PE	1,957	1,233	0	0	0	0	0	Continuing		TBD	
	Title Information Systems Security Program/BPAC 674585/Title Cryptologic 2020											
(U)	APPN 3600/PE 64239F/PE	410							Continuing		TBD	
	Title F-22/BPAC 654069/BPAC Title Adv. Tactical Fighter											
	NOTE: FY99 through FY00 funds are in PE 33140F. Beginning in FY01, funding for this effort is located in this PE.											
(U) <u>E. Acquisition Strategy</u>												
	All major contracts within this Program Element are awarded after full and open competition.											
(U) <u>F. Schedule Profile</u>												
					<u>FY 1999</u>		<u>FY 2000</u>			<u>FY 2001</u>		
					1	2	3	4	1	2	3	4
(U)	Establish Tier 2 DII--COE Compliance										X	
(U)	Begin Development of LMD/DMD Browser Interface										X	
(U)	Start Continuous MITRE Support										X	

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2000			
BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0303401F Communications Security				PROJECT 674861		
(U) A. Project Cost Breakdown (\$ in Thousands)											
						<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>	
(U)	Software Development									4,857	
(U)	Total									4,857	
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)											
(U) Performing Organizations:											
	<u>Contractor or Government Performing Activity</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Performing Activity EAC</u>	<u>Project Office EAC</u>	<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Organizations</u>											
	SAIC (GS-35F-44616)	BPA	May 98	N/A	N/A	0	0	0	985	Continuing	TBD
	L3	TBD	Dec 00	N/A	N/A	0	0	0	1,486	Continuing	TBD
	ESC	FFRDC	Nov 00	N/A	N/A	0	0	0	2,386	Continuing	TBD
<u>Support and Management Organizations</u>											
N/A											
<u>Test and Evaluation Organizations</u>											
N/A											
(U) Government Furnished Property:											
	<u>Item Description</u>	<u>Contract Method/Type or Funding Vehicle</u>	<u>Award or Obligation Date</u>	<u>Delivery Date</u>		<u>Total Prior to FY 1999</u>	<u>Budget FY 1999</u>	<u>Budget FY 2000</u>	<u>Budget FY 2001</u>	<u>Budget to Complete</u>	<u>Total Program</u>
<u>Product Development Property</u>											
N/A											
<u>Support and Management Property</u>											
N/A											
<u>Test and Evaluation Property</u>											
N/A											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)				DATE February 2000		
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0303401F Communications Security			674861	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
						<u>Total</u>
<u>Subtotals</u>						<u>Program</u>
Subtotal Product Development		0	0	0	4,857	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project		0	0	0	4,857	TBD