

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 2000

BUDGET ACTIVITY

PE NUMBER AND TITLE

07 - Operational System Development

0303140F Information Systems Security Program

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
Total Program Element (PE) Cost	7,754	19,381	7,212	6,944	7,017	7,155	7,296	Continuing	TBD
674579 Information Warfare	1,920	9,407	1,892	1,882	1,869	1,906	1,943	Continuing	TBD
674585 Cryptologic 2020	1,957	1,233	0	0	0	0	0	Continuing	TBD
677820 Computer Security RDT&E: Firestarter	3,877	8,741	5,320	5,062	5,148	5,249	5,353	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0

BPAC 674585, Cryptologic 2020, will be funded under PE 33401F, Comm Sec, BPAC 674861, Cryptologic 2020, beginning in FY01.

(U) A. Mission Description

This program provides 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 recover from those attacks. Primarily, the project does research and development of information protection tools and transitions them to operational systems. It also provides the acquisition community and operational warfighters the ability to manage their own risks relative to mission, task, threat, and vulnerability information; and to mitigate IW risks based on rank-ordered countermeasure recommendations. The program element consists of three complimentary projects.

The computer security project directs the R&D of information protection technology and tools to defend C4ISR systems, with emphasis on computer and network systems security, damage assessment and recovery, and multi-level systems security. It provides access control, integrity, assured services and meets warfighter's requirements. The Cryptologic 2020 project comprises R&D for the Air Force Electronic Key Management System (AFEKMS). The AFEKMS, in concert with National Security Agency's (NSA's) EKMS, provides a secure and flexible capability for the electronic generation, distribution, and management of key material, voice callwords, and Communications Security (COMSEC) publications for the F-22. AFEKMS replaces the existing physical distribution and management system providing COMSEC KEYS for USAF Information Protection. The Air Force unique AFEKMS software is required because the production software developed by NSA cannot provide the capabilities to distribute the system keys in the format needed by the F-22 Mission Support System. The Information Warfare project comprises R&D for Vulnerability Assessment/Risk Management (IW VA/RM) and Technology planning to build information protection into all AF C4ISR and weapons systems.

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(U) **B. Budget Activity Justification**

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) **C. Program Change Summary (\$ in Thousands)**

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Total Cost</u>
(U) Previous President's Budget (FY 2000 PBR)	9,277	7,992	7,284	TBD
(U) Appropriated Value	9,420	19,492		
(U) Adjustments to Appropriated Value				
a. Congressional/General Reductions	-143	-5		
b. Small Business Innovative Research	-498			
c. Omnibus or Other Above Threshold Reprogram		-106		
d. Below Threshold Reprogram	-981			
e. Rescissions	-44			
f. Other				TBD
(U) Adjustments to Budget Years Since FY 2000 PBR			-72	
(U) Current Budget Submit/FY 2001 PBR	7,754	19,381	7,212	TBD

(U) **Significant Program Changes:**

Funding: Congressional \$7.0M add in FY00 for management of the Cyber Lighthouse Security Technology Program, and \$4.5M add for continued development of the Secure Interoperable Distributed Computing Systems project.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2000	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program				PROJECT 674579	
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
674579 Information Warfare	1,920	9,407	1,892	1,882	1,869	1,906	1,943	Continuing	TBD
<p>(U) A. Mission Description</p> <p>Builds information protection into all AF Command and Control (C2), Intelligence, Surveillance, and Reconnaissance (ISR), and weapons systems. The project provides the acquisition community and operational warfighters the ability to manage the IW risks to their missions and operational tasks based on system threat and vulnerability information. Provides decision makers with countermeasures recommendations, rank-ordered based on operational utility and relative cost. Looking across all assessments conducted on AF systems, the project also provides the USAF a unique system-of-systems perspective for managing shared IW risks.</p> <p>Information Warfare Vulnerability Assessment and Risk Management (IW VA/RM): Development and sustainment of a new capability to manage both individual and shared Information Warfare (IW) risks across all AF C2 and weapon systems. This will enable AF acquisition programs to meet the information assurance requirements of AFPD 10-20, para 12. The IW VA/RM program enhances a commercially-available risk management tool so that it (1) provides risk management solutions based on mission impact and user cost; and (2) seamlessly combines government Threat, Vulnerability and Countermeasure (TVC) data with commercial TVC data at point of use. The IW VA/RM program also initiates the production of the Government TVC data; and the process of setting up a management infrastructure to coordinate all future TVC data production and distribution, similar to that established under AFI 10-703, Electronic Warfare Integrated Reprogramming (EWIR). Together, the tool with the data and supporting infrastructure will enable all AF System Program Offices (SPOs) to evaluate their IW risks and propose mission-based mitigation strategies to their users as part of a coordinated, coherent effort. To provide the overview needed to manage the shared risk across all AF systems, the IW VA/RM program establishes the means to aggregate individual SPO risk assessment results and report them based on higher-echelon mission impact. These reports will provide vital information on trends, deficiencies, and rationale for the AF Modernization Planning process.</p> <p>IW Technical Planning Integrated Product Team (IW TPIPT). Supports modernization planning for Counterinformation (CI) Mission Area and technology planning processes. Continuously identifies and evaluates commercial and Government inventory of available products that can be used to meet Counterinformation mission deficiencies. Develops and coordinates technology development and acquisition plans for resolving mission area deficiencies. Provides Government laboratories and private industry guidance on new technologies needed for the next 10 to 25 years.</p>									
Project 674579			Page 3 of 16 Pages				Exhibit R-2A (PE 0303140F)		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE February 2000
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
07 - Operational System Development	0303140F Information Systems Security Program	674579
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 1999 (\$ in Thousands)</u>		
(U) \$700	Continued exportable VA/RM process and toolset development	
(U) \$433	Established infrastructure: Intelligence support, metrics measurement, etc.	
(U) \$362	Continued developing libraries and databases, system-of-systems model	
(U) \$283	Continued IW TPIPT activities, analyses, database support	
(U) \$142	Conducted integrated cross program assessments and solution development	
(U) \$1,920	Total	
(U) <u>FY 2000 (\$ in Thousands)</u>		
(U) \$1,278	Continue exportable VA/RM process and toolset development	
(U) \$240	Establish infrastructure: Intelligence support, metrics, etc.	
(U) \$293	Continue to develop and update libraries and databases, system-of-systems model	
(U) \$292	Continue IW TPIPT activities, analyses, database support	
(U) \$304	Continue integrated cross program assessments and solution development	
(U) \$7,000	Manage Cyber Lighthouse Security Technology Development Program (Congressional add)	
(U) \$9,407	Total	
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$1,034	Continue exportable VA/RM process and toolset development	
(U) \$90	Establish and support existing infrastructure: Intelligence support, metrics, etc.	
(U) \$90	Continue to develop and update libraries and databases, system-of-systems model	
(U) \$196	Continue IW TPIPT activities, analyses, database support	
(U) \$482	Continue to integrate cross program assessments and solution development	
(U) \$1,892	Total	
(U) <u>B. Project Change Summary</u>		
N/A		
Project 674579	Page 4 of 16 Pages	Exhibit R-2A (PE 0303140F)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)	DATE February 2000
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT 674579
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(U) **C. Other Program Funding Summary (\$ in Thousands)**

	<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
none

(U) **D. Acquisition Strategy**
All major contracts within this Program Element are awarded after full and open competition.

(U) **E. Schedule Profile**

	<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Develop and iterate versions of the Exportable VA/RM process & tool set	*		*		*		X		X		X	
(U) Develop and iterate versions of the infrastructure, libraries, and database	*		*		*		X		X		X	
(U) Intelligence Support Plan signed					*							
(U) Establish VA/RM infrastructure: Intelligence support, metrics measurement,					*							
(U) Periodically check to ensure integration of cross program assessments and s	*		*		*		X		X		X	
(U) Sustain IW TPIPT technology database (quarterly reviews)	*	*	*	*	*	X	X	X	X	X	X	X
(U) Sustain IW TPIPT technology development plan (annual)			*				X				X	
(U) Participate and support IW TPIPT activities	*		*		*		X		X		X	

* Denotes Completed Events
X Denotes Planned Events

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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 0303140F Information Systems Security Program				PROJECT 674579		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>			
(U)	Software development				702	4,480	847			
(U)	Systems engineering support				1,082	4,264	920			
(U)	Program management support				136	663	125			
(U)	Total				1,920	9,407	1,892			
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>										
Trident Data Systems	FFP	Aug 98			0	822	1,097	820	Continuing	TBD
MITRE	FFRDC	On-going			0	0	2,332	0	0	2,332
Lincoln Labs	FFRDC	On-going			0	0	2,333	0	0	2,333
Carnegie-Mellon Software	FFRDC	On-going			0	0	2,333	0	0	2,333
Engineering Institute (SEI)										
<u>Support and Management Organizations</u>										
MITRE	FFRDC	On-going			0	480	729	765	Continuing	TBD
ITSP (various)	ID/IQ	On-going			0	483	371	232	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
Test & Evaluation					0	135	212	75	Continuing	TBD
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development					0	822	8,095	820	TBD	TBD
Subtotal Support and Management					0	963	1,100	997	TBD	TBD
Subtotal Test and Evaluation					0	135	212	75	TBD	TBD
Total Project					0	1,920	9,407	1,892	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2000	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program				PROJECT 674585	
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
674585 Cryptologic 2020	1,957	1,233	0	0	0	0	0	Continuing	TBD
<p>(U) <u>A. Mission Description</u> NOTE: FY99 through FY00 funds are in PE 33140. Beginning in FY01, this effort will be funded in PE 33401.</p> <p>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.</p> <p>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.</p> <p>(U) <u>FY 1999 (\$ in Thousands)</u> (U) \$950 LCMS application software development (F-22) (U) \$1,007 Local Management Device/Data Management Device (LMD/DMD) software development and system integration (U) \$1,957 Total</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u> (U) \$617 Transition LCMS application software development/sustainment (F-22) to Air Force (U) \$616 LMD/DMD software development and system integration (U) \$1,233 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u> (U) \$0 No Activity (U) \$0 Total</p>									
Project 674585			Page 7 of 16 Pages				Exhibit R-2A (PE 0303140F)		

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BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program				PROJECT 674585						
(U) <u>B. Project Change Summary</u>														
N/A														
(U) <u>C. 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)			4,857	4,700	5,511	5,507	4,017	Continuing	TBD					
Title Comm Security/ BPAC 674861/ Cryptologic 2020														
(U)	410							Continuing	TBD					
Title F-22/BPAC 654069/BPAC Title Adv. Tactical Fighter														
NOTE: BPAC 674585, Cryptologic 2020, will be funded under PE 33401,Comm Sec, BPAC 674861, Cryptologic 2020, beginning in FY01.														
(U) <u>D. Acquisition Strategy</u>														
All major contracts within this Program Element are awarded after full and open competition.														
(U) <u>E. Schedule Profile</u>														
			<u>FY 1999</u>			<u>FY 2000</u>			<u>FY 2001</u>					
			1	2	3	4	1	2	3	4	1	2	3	4
(U)	F-22 UAS Development & Transition Complete													
(U)	DMD/DTD 2000 hardware/software development and system integration													
	* Denotes Completed Events													
	X Denotes Planned Events													

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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 0303140F Information Systems Security Program			PROJECT 674585			
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>											
						<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>	
(U)	Hardware Development									0	
(U)	Software Development					1,957		1,233			
(U)	Total					1,957		1,233		0	
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>											
(U) <u>Performing Organizations:</u>											
	<u>Contractor or Government</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Performing Activity</u>	<u>Project Office</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>Performing Activity</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>						
<u>Product Development Organizations</u>											
	Motorola Inc. (F19628-97-C-0600)	SS/CPFF	Apr 97	N/A	N/A	51	950	83	0	Continuing	TBD
	SAIC (GS-35F-44616)	BPA	May 98	N/A	N/A	823	1,007	575	0	Continuing	TBD
	National Security Agency X35	SS/CPFF	Jun 98	N/A	N/A	517		575	0	Continuing	TBD
<u>Support and Management Organizations</u>											
	Trustest S/W Support					159				Continuing	TBD
	MSN Support					90				Continuing	TBD
<u>Test and Evaluation Organizations</u>											
(U) <u>Government Furnished Property:</u>											
	<u>Item Description</u>	<u>Contract Method/Type</u>	<u>Award or Obligation</u>	<u>Delivery</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>Description</u>	<u>or Funding Vehicle</u>	<u>Date</u>	<u>Date</u>							
<u>Product Development Property</u>											
<u>Support and Management Property</u>											

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE February 2000
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0303140F Information Systems Security Program	PROJECT 674585
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(U) **Government Furnished Property Continued:**

Test and Evaluation Property

Total Project

	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Subtotals</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development	1,391	1,957	1,233	0	TBD	TBD
Subtotal Support and Management	249				TBD	TBD
Subtotal Test and Evaluation						
Total Project	1,640	1,957	1,233	0	TBD	TBD

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2000		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program				PROJECT 677820		
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
677820	Computer Security RDT&E: Firestarter	3,877	8,741	5,320	5,062	5,148	5,249	5,353	Continuing	TBD
NOTE: FY00 New Start Request currently being processed for submission to Congress. Title: Pouncer 4. Amount \$2.995M. Years: FY00										
(U) <u>A. Mission Description</u>										
<p>This program directs the Research & Development (R&D) of Information Protect technology/tools to provide the capability to defend USAF Command, Control, Communications, Computer, and Intelligence (C4I) Systems from Information Warfare (IW) Cyber attacks and to recover from those attacks. As the USAF single manager for Information Protect (R&D), this program directs C4I system Information Protect R&D with emphasis in computer/network systems security, damage assessment and recovery, and multi-level security. With the advent of the information age, the battlefield commander's ability to fight and win becomes more dependent upon the availability, timeliness, and integrity of the information flow/processing capability available. The requirement for global presence and global power has demanded increasing reliance on these advanced information systems with global accessibility. The susceptibilities inherent in such reliance and accessibility has heightened the awareness that the National Information Infrastructure (NII) and the Defense Information Infrastructure (DII) must be protected against attack.</p> <p>Emphasis is therefore placed on R&D areas that provide deterrence of attack through cyberspace surveillance, Tactical Indications & Warning (I&W), intrusion detection and characterization of attack. As adversaries may gain access to critical AF Force information systems through a variety of means, this technology will provide the capability of collecting, integrating, and displaying threat, vulnerability, and system data indicating an attack is about to take place and/or is taking place. Current Air Force systems such as the Combat Information Transport Systems (CITS), Theater Deployable Communications (TDC) leverage the technology from this project to meet their info protect needs/requirements. Additionally, this project utilizes info assurance technology investments by DARPA as a jump-start for providing a solution to Air Force requirements and cooperates with DISA and other services/agencies to ensure DII info protect requirements are complied with.</p>										
(U) <u>FY 1999 (\$ in Thousands)</u>										
(U)	\$58	Continued the development of secure data handling system for multi-level database								
(U)	\$1,512	Continued the development of secure interoperable distributed computing systems								
(U)	\$552	Initiated the development of technology for self-healing network system								
(U)	\$546	Developed methodologies for commercial software evaluation								
(U)	\$313	Completed effort to transition DARPA intrusion detection technology into the Air Force Information Warfare Center (AFIWC) and the Base Information Protection (BIP) Suite								
Project 677820			Page 11 of 16 Pages				Exhibit R-2A (PE 0303140F)			

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)		DATE
BUDGET ACTIVITY		PROJECT
07 - Operational System Development	0303140F Information Systems Security Program	February 2000 677820
(U) <u>A. Mission Description Continued</u>		
(U) <u>FY 1999 (\$ in Thousands) Continued</u>		
(U) \$292	Completed effort to demonstrate INFOSEC for Air Force Network Operations System Centers (AF NOSCs)	
(U) \$302	Initiated effort to transition secure wrapper technologies into Air Force systems.	
(U) \$302	Initiated effort for automatic capability to trace source of intrusions	
(U) \$3,877	Total	
(U) <u>FY 2000 (\$ in Thousands)</u>		
(U) \$1,103	Continue development of technology for self-healing network systems (to include automated system recovery)	
(U) \$406	Begin development of Information Attack correlation methodologies	
(U) \$660	Continue effort to transition DARPA information assurance technology to Air Force Information Warfare Center (AFIWC) and Combat Information Transport System (CITS) SPO	
(U) \$404	Continue development of methodologies for commercial software evaluation and steganography detection	
(U) \$4,912	Continue development of secure interoperable distributed agent computing (\$4.5M Congressional Add)	
(U) \$802	Begin development of extensible prototype framework for Enterprise Defense to support protection of warfighter mission critical information flows	
(U) \$454	Continue effort to transition secure wrapper technologies into Air Force systems.	
(U) \$0	Pouncer 4 - pending submission to Congress and approval of new start effort.	
(U) \$8,741	Total	
(U) <u>FY 2001 (\$ in Thousands)</u>		
(U) \$1,290	Continue development of technology for self-healing network systems (to include automated system recovery)	
(U) \$780	Continue development of Information Attack correlation methodologies	
(U) \$680	Continue development of methodologies for commercial software evaluation and steganography detection	
(U) \$880	Continue development of extensible prototype framework for Enterprise Defense to support protection of warfighter mission critical information flows	
(U) \$480	Continue effort to transition secure wrapper technologies into Air Force systems.	
(U) \$780	Continue effort to transition DARPA information assurance technology into AF Information Protect architecture	
(U) \$430	Begin effort to develop metrics for reliable information assurance measurement & testing	
(U) \$5,320	Total	
(U) <u>B. Project Change Summary</u>		

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)											DATE February 2000				
BUDGET ACTIVITY 07 - Operational System Development						PE NUMBER AND TITLE 0303140F Information Systems Security Program					PROJECT 677820				
(U) C. Other Program Funding Summary (\$ in Thousands)															
	<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														
	None														
(U) D. Acquisition Strategy															
	All major contracts within this Program Element are awarded after full and open competition.														
(U) E. Schedule Profile															
				<u>FY 1999</u>			<u>FY 2000</u>		<u>FY 2001</u>						
				1	2	3	4	1	2	3	4	1	2	3	4
(U)	Requirements Review Boards														
						*				X					X
(U)	AF NOSEC INFOSEC Transition/demonstrations														
							*				X				X
(U)	Transition Secure Wrapper Tech Development to AF Systems														
				*											X
(U)	Begin Development of Self Healing Network Systems														
						*									X
(U)	MLS DB technology transition														
							*								X
(U)	Develop Secure Interoperable Distributed Computing System & Periodically De														
			*								X				X
(U)	Begin development of methodologies for Commercial Software Evaluation and														
			*												X
(U)	DARPA Information Assurance Technology Transition														
			*								X				
(U)	Devel tech for tracing intrusions														
									X						
(U)	Information attack correlation technology development														
							*							X	
(U)	Develop and periodically demonstrate extensible prototype framework for Ent														
							*					X			
(U)	Begin Development of reliable information assurance measurement & testing														
												X			
(U)	Develop automated Information damage assessment and recover capability														
								X							

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)

DATE February 2000

BUDGET ACTIVITY

07 - Operational System Development

PE NUMBER AND TITLE

0303140F Information Systems Security Program

PROJECT

677820

(U) E. Schedule Profile Continued

<u>FY 1999</u>				<u>FY 2000</u>				<u>FY 2001</u>			
1	2	3	4	1	2	3	4	1	2	3	4

KEY: * Denotes Completed Events;
X Denotes Planned Events.

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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 0303140F Information Systems Security Program			PROJECT 677820		
(U) A. Project Cost Breakdown (\$ in Thousands)										
					<u>FY 1999</u>		<u>FY 2000</u>			<u>FY 2001</u>
(U)	Secure Data Handling System				58					
(U)	Database Protection Mechanisms									
(U)	Security Analysis Tools									
(U)	DARPA Technology Insertion/Transition				313		660			780
(U)	Secure Distributed Computing/Collaborative Planning				1,512		4,912			
(U)	Information Protection (IP) Integration Framework				292					
(U)	Self-Healing Network System (to include automated system recovery)				552		1,103			1,290
(U)	Wrappers to Secure Commercial-Off-the-Shelf (COTS)				302		454			480
(U)	Information Attack Data Correlation						406			780
(U)	Extensible framework for Enterprise for Defense				302		802			880
(U)	COTS Software (S/W) Evaluation				546		404			680
(U)	Reliable Information Assurance measurement & testing									430
(U)	Total				3,877		8,741			5,320
(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)										
(U) Performing Organizations:										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
FFRDC (MITRE)	MIPR	On-Going	N/A	N/A	652	171	490	548	Continuing	TBD
Multiple Contractors	CPFF	On-Going	N/A	N/A	2,277	3,308	7,661	4,124	Continuing	TBD
Universities	CPFF	On-Going	N/A	N/A	368	398	590	648	Continuing	TBD
<u>Support and Management Organizations</u>										
<u>Test and Evaluation Organizations</u>										

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)		DATE					
07 - Operational System Development		0303140F Information Systems Security Program			February 2000		
BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT					
						677820	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
		<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>	<u>Program</u>
Subtotal Product Development		3,297	3,877	8,741	5,320	TBD	TBD
Subtotal Support and Management							
Subtotal Test and Evaluation							
Total Project		3,297	3,877	8,741	5,320	TBD	TBD