

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0303140F Information Systems Security Program					
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	28,197	20,053	9,353	9,460	9,584	9,730	9,886	Continuing	TBD
4579 Information Warfare	5,640	5,134	3,343	3,370	3,400	3,461	3,496	Continuing	TBD
4871 Information Operations Technology	982	896	989	986	984	1,002	1,020	Continuing	TBD
7820 Computer Security RDT&E: Firestarter	21,575	14,023	5,021	5,104	5,200	5,267	5,370	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	Continuing	TBD

In FY03, Information Systems Security Programs, Information Operations Technology anticipates receiving \$4.0M from the Cost of War transfer account. These funds are not included in the FY03 Air Force baseline. These funds be will be used to pursue and improve unique information operations technologies for the purpose of achieving offensive and defensive information superiority.

(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 to recover from those attacks. Primarily, the project does research and development of information protection tools and transitions them to operational systems. The program element consists of several complimentary BPACs. The Information Warfare BPAC 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 Info Ops (IO) Technology BPAC concentrates on transitioning state-of-the-art IO capabilities to the warfighter through demonstrations of those technologies and rapid prototyping of warfighter tools. It also funds the IW Mission Area Team (MAT), the IW Technology Planning IPT (IW TPIPT), and the Panther Den program office. 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. This includes the Public Key Infrastructure (PKI) integration work which will ensure user identification, non-repudiation, digital signatures and encryption for electronic business and network transactions for all AF network users.

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<b>(U) <u>B. Budget Activity Justification</u></b> 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.					
<b>(U) <u>C. Program Change Summary (\$ in Thousands)</u></b>					
		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
(U) Previous President's Budget		7,212	7,936	9,375	TBD
(U) Appropriated Value		29,503	20,053		
(U) Adjustments to Appropriated Value					
a. Congressional/General Reductions					
b. Small Business Innovative Research		-903			
c. Omnibus or Other Above Threshold Reprogram					
d. Below Threshold Reprogram		-122			
e. Rescissions		-271			
(U) Adjustments to Budget Years Since FY 2002 PBR		-10		-22	
(U) Current Budget Submit/FY 2003 PBR		28,197	20,053	9,353	TBD
<b>(U) <u>Significant Program Changes:</u></b>					
Funding: Congressional \$2.5M add in FY02 for continued management of the Cyber Lighthouse Security Technology Program (BPAC 4579); \$9.1M FY02 add for continued development of the Coordinated Distributed Attack Detection System (CDADS). This phase renamed World Infrastructure Security Environment (WISE) (BPAC 7820); and \$1.0M FY02 add for the application of enabling technologies (biometrics, public key, signature authentication) to AF IA problems (BPAC 4579).					

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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303140F Information Systems Security Program</b>	<b>PROJECT</b> <b>4579</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4579 Information Warfare	5,640	5,134	3,343	3,370	3,400	3,461	3,496	Continuing	TBD

**(U) A. Mission Description**  
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 countermeasure 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.

Information Warfare Vulnerability Assessment and Risk Management (IW VA/RM): Development of a new capability to manage both individual and shared Information Warfare (IW) risks across all AF C2 and weapon systems. 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 the 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 system's 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.

Information Warfare Solutions Analysis Integrated Product Team (IW SA IPT): Supports modernization planning for IW Mission Area and Solutions Analysis Processes. Continuously identifies and evaluates commercial and Government inventory of available products that can be used to meet IW mission deficiencies. Develops and coordinates technology development and acquisition plans for resolving mission area deficiencies. Information Warfare Metrics provides SPOs objective measurement of how well information warfare solutions are being incorporated into a weapon system. Information Warfare Architectures provide architectural solutions that result in systems designed with IW fundamentals. Provides Government laboratories and private industry guidance on new technologies needed for the next 10 to 25 years.

Cyber Lighthouse: The Cyber Lighthouse (a Congressional ADD) effort is a collection of research initiatives designed to address needs that are not currently being

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<b>07 - Operational System Development</b>	<b>0303140F Information Systems Security Program</b>	<b>4579</b>
<p>(U) <b><u>A. Mission Description Continued</u></b>            addressed by other sources. In some cases, it is simply investigating the feasibility of an effort and in others, we will actually develop and prototype a system. This effort has included such initiatives as the Common Vulnerability Database and improvements to the intrusion detection capabilities of the Air Force's Intrusion Detection System (IDS).</p>		
<p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p>		
(U) \$1,024	Continued exportable VA/RM process and toolset development	
(U) \$80	Established and supported existing infrastructure: Intelligence support, metrics, etc.	
(U) \$80	Continued initial development of libraries and databases, system-of-systems model	
(U) \$186	Continued IW TPIPT activities, analyses, database support	
(U) \$472	Continued to integrate cross program assessments and solution development	
(U) \$3,798	Managed Cyber Lighthouse Security Technology Development Program (Congressional Add)	
(U) \$5,640	Total	
<p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p>		
(U) \$2,500	Manage Cyber Lighthouse Security Technology Development Program (Congressional Add)	
(U) \$1,000	Manage Enabling technologies for Info Assurance (IA) (Congressional Add)	
(U) \$702	Continue exportable VA/RM process and toolset development -- Phase 2 Develop next generation VA/RM prototype	
(U) \$206	Continue exportable VA/RM process and toolset development -- Phase 3 Start performing VA/RM assessments	
(U) \$25	Continue to establish and support existing infrastructure: Intelligence support, metrics/architectures	
(U) \$436	Continue IW SA IPT activities, analyses, database support	
(U) \$36	Continue to integrate cross program assessments and solution development	
(U) \$229	Initiate development of TVC database	
(U) \$5,134	Total	
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BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT				
<b>07 - Operational System Development</b>					<b>0303140F Information Systems Security Program</b>					<b>4579</b>				
<b>(U) <u>E. Schedule Profile Continued</u></b>														
		<u>FY 2001</u>					<u>FY 2002</u>					<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4		
(U)	Continue to integrate cross program assessments & solution development													
(U)	Continue IW SA IPT activities, analysis, database support													
(U)	*											X		
(U)	Manage Cyber Lighthouse Program (Congressional Add)													
(U)	Manage Enabling technologies for IA (Congressional Add)													
(U)	Initiate development of TVC database													
	* Denotes Completed Events													
	X Denotes Planned Events													



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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303140F Information Systems Security Program</b>	<b>PROJECT</b> <b>4871</b>
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COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
4871 Information Operations Technology	982	896	989	986	984	1,002	1,020	Continuing	TBD

In FY03, Information Systems Security Programs, Information Operations Technology anticipates receiving \$4.0M from the Cost of War transfer account. These funds are not included in the FY03 Air Force baseline. These funds be will be used to pursue and improve unique information operations technologies for the purpose of achieving offensive and defensive information superiority.

**(U) A. Mission Description**

- (U) This program expedites Information Operations (IO) Technology transition from laboratory, industry, and academia to operational use via studies, rapid prototyping, and demonstrations.
- (U) The program office investigates and selects the highest potential IO technologies to meet specific shortfalls and deficiencies documented by major commands (MAJCOMS), unified commands, and IO agencies in Mission Area Plans (MAPs) and Mission Need Statements (MNSs). IO areas considered include: Psychological Operations (PSYOP), Electronic Warfare, Military Deception, Physical Attack, Information Attack, Information Assurance, Operational Security (OPSEC), Counterintelligence, Counter PSYOP, Electronic Protection, and Counterdeception.
- (U) The program office works directly with labs, industry, users and battle labs to set priorities and find synergistic combinations of new technology, doctrine and training. Program efforts will be prioritized and guided by the Information Warfare (IW) Technical Planning Integrated Planning Team (TPIPT) in support of the Air Force IW MAP and the DoD IO Master Plan.
- (U) Planned areas of study prototyping, and/or demonstration include techniquet and technologies for defending systems against sophisticated Information Warfare (IW) and computer network attacks, exploiting Integrated Air Defense Systems (IADS), Command and Control systems, and applying advanced IO applications in emerging physics, communications, directed energy, electronic sensors, and intelligence.
- (U) This program also funds the Panther Den program office at Hanscom AFB, MA. The Panther Den program office provides technical, program management, and security support to the programs funded by this PE, as well as PD-classified projects funded via other PEs.

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BUDGET ACTIVITY		PROJECT																												
<b>07 - Operational System Development</b>	<b>0303140F Information Systems Security Program</b>	<b>February 2002</b> <b>4871</b>																												
<p>(U) <b><u>A. Mission Description Continued</u></b>            (U) Specific program content is classified. Current and historical project information is available in the Panther Den (PD) Special Access Program (SAP) Report.</p> <p>(U) <b><u>FY 2001 (\$ in Thousands)</u></b></p> <table border="0"> <tr> <td>(U) \$347</td> <td>Directed Energy Application to IW</td> </tr> <tr> <td>(U) \$74</td> <td>Advanced IO Communication Application</td> </tr> <tr> <td>(U) \$65</td> <td>Advanced Intelligence Applications to IO</td> </tr> <tr> <td>(U) \$298</td> <td>Supported Mitre Chief Engineer</td> </tr> <tr> <td>(U) \$198</td> <td>Supported Program Office and Security Structure</td> </tr> <tr> <td>(U) \$982</td> <td>Total</td> </tr> </table> <p>(U) <b><u>FY 2002 (\$ in Thousands)</u></b></p> <table border="0"> <tr> <td>(U) \$459</td> <td>The IO Technology program office will support the IW TPIPT and the IW MAT through studies, rapid prototyping, and demonstrations of state-of-the-art IO technologies to meet the warfighters' IO requirements</td> </tr> <tr> <td>(U) \$269</td> <td>Mitre Chief Engineer Support</td> </tr> <tr> <td>(U) \$168</td> <td>Program Office and Security Structure Support</td> </tr> <tr> <td>(U) \$896</td> <td>Total</td> </tr> </table> <p>(U) <b><u>FY 2003 (\$ in Thousands)</u></b></p> <table border="0"> <tr> <td>(U) \$489</td> <td>The IO Technology program office will support the IW TPIPT and the IW MAT through studies, rapid prototyping, and demonstrations of state-of-the-art IO technologies to meet the warfighters' IO requirements</td> </tr> <tr> <td>(U) \$300</td> <td>Mitre Chief Engineer Support</td> </tr> <tr> <td>(U) \$200</td> <td>Program Office and Security Structure Support</td> </tr> <tr> <td>(U) \$989</td> <td>Total</td> </tr> </table> <p>(U) <b><u>B. Project Change Summary</u></b></p>			(U) \$347	Directed Energy Application to IW	(U) \$74	Advanced IO Communication Application	(U) \$65	Advanced Intelligence Applications to IO	(U) \$298	Supported Mitre Chief Engineer	(U) \$198	Supported Program Office and Security Structure	(U) \$982	Total	(U) \$459	The IO Technology program office will support the IW TPIPT and the IW MAT through studies, rapid prototyping, and demonstrations of state-of-the-art IO technologies to meet the warfighters' IO requirements	(U) \$269	Mitre Chief Engineer Support	(U) \$168	Program Office and Security Structure Support	(U) \$896	Total	(U) \$489	The IO Technology program office will support the IW TPIPT and the IW MAT through studies, rapid prototyping, and demonstrations of state-of-the-art IO technologies to meet the warfighters' IO requirements	(U) \$300	Mitre Chief Engineer Support	(U) \$200	Program Office and Security Structure Support	(U) \$989	Total
(U) \$347	Directed Energy Application to IW																													
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(U) \$989	Total																													
Project 4871	Page 9 of 19 Pages	Exhibit R-2A (PE 0303140F)																												

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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>				<b>PE NUMBER AND TITLE</b> <b>0303140F Information Systems Security Program</b>				<b>PROJECT</b> <b>4871</b>		
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>										
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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										0
(U) Other APPN										0
PE 0303140F studies will leverage current DoD lab efforts. Studies will be deconflicted with and will complement PE 0208021F, Information Warfare Support. Some aspects of this program will be protected under the PANTHER DEN Special Access Program. Data available upon request.										
<b>(U) D. Acquisition Strategy</b>										
All major contracts within this Program Element are awarded after full and open competition unless other than full and open is justified to the Designated Acquisition Commander (DAC).										
<b>(U) E. Schedule Profile</b>										
		<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>		
		1	2	3	4	1	2	3	4	1
(U) Directed Energy Application to IW					*					
(U) Advanced IO Communication Application					*					
(U) Advanced Intelligence Applications to IO					*					
(U) IO Technology Study/Prototype/Demo						X		X		X
(U) Mitre Chief Support								X		X
(U) Program Office and Security Structure Supported								X		X
X - Denotes planned event										
* - Denotes completed event										
Project 4871			Page 10 of 19 Pages				Exhibit R-2A (PE 0303140F)			

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0303140F Information Systems Security Program</b>				<b>4871</b>		
<b>(U) A. Project Cost Breakdown (\$ in Thousands)</b>										
						<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>
(U)	Directed Energy Application to IW					347				
(U)	Advanced IO Communication Application					74				
(U)	Advanced Intelligence Applications to IO					64				
(U)	IO Technology Study/Prototype/Demo							459		489
(U)	Mitre Chief Engineer Support					299		269		300
(U)	Program Office and Security Support					198		168		200
(U)	Total					982		896		989
<b>(U) B. Budget Acquisition History and Planning Information (\$ in Thousands)</b>										
<b>(U) Performing Organizations:</b>										
	<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>Activity</u>		<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
									<u>Budget to</u>	<u>Total</u>
									<u>Complete</u>	<u>Program</u>
	<u>Product Development Organizations</u>									
	Contractor TBD							347	459	489
	Contractor TBD							74		74
	Contractor TBD							64		64
	<u>Support and Management Organizations</u>									
	Electronic Systems Center							78	63	79
	Aegis, Inc. (Security Contractor)							120	105	121
	Mitre (Engineering Support)							299	269	300
	<u>Test and Evaluation Organizations</u>									
									Continuing	TBD
									Continuing	TBD
									Continuing	TBD

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2002	
BUDGET ACTIVITY			PE NUMBER AND TITLE			PROJECT
<b>07 - Operational System Development</b>			<b>0303140F Information Systems Security Program</b>			<b>4871</b>
			<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>
			to FY 2001	FY 2001	FY 2002	FY 2003
				<u>Budget to</u>		<u>Total</u>
				Complete		Program
<u>Subtotals</u>						
Subtotal Product Development				485	459	489
Subtotal Support and Management				497	437	500
Subtotal Test and Evaluation						
Total Project				982	896	989
						TBD
						TBD
						TBD

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<b>BUDGET ACTIVITY</b> <b>07 - Operational System Development</b>	<b>PE NUMBER AND TITLE</b> <b>0303140F Information Systems Security Program</b>
	<b>PROJECT</b> <b>7820</b>

COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
7820 Computer Security RDT&E: Firestarter	21,575	14,023	5,021	5,104	5,200	5,267	5,370	Continuing	TBD

**(U) A. Mission Description**

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 ensure the systems' recovery from these attacks. As the USAF single manager for Information Protect (R&D), this program directs C4I system Information Protect R&D with emphasis on information/computer/network systems security, damage assessment and recovery, and dynamic security policy enforcement. The advent of the asymmetrical threat of cyber terrorism has the potential to affect the battlefield commander's ability to fight and win because of his dependence upon the availability, timeliness, and integrity of the information flow/processing capability. The requirement for global presence and global power has demanded increasing reliance on the advanced information systems and global accessibility. The susceptibilities inherent in such reliance and accessibility has heightened the awareness that the National Information Infrastructure (NII), the Defense Information Infrastructure (DII), and the future global Info Grid (GIG) must be protected against attack in order to provide Global Information Exchange (GIE).

Emphasis is therefore placed on R&D areas that provide deterrence of attack through cyberspace surveillance, Tactical Indications & Warning (I&W), intrusion detection, characterization of attack, decision support, recovery, and active response. Since 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 GIE info protect requirements are being met.

Public Key Infrastructure (PKI): A Department of Defense (DoD) PKI was mandated by the Deputy Secretary of Defense on 8 Aug 97 and the Services were further directed to use the capabilities in a 6 May 99 memo. PKI, supports the overall Defense-in-Depth Strategy for information assurance capabilities -- user identification, non-repudiation, digital signatures and encryption for government electronic business and network transactions -- protecting/securing all network information.

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<b>07 - Operational System Development</b>	<b>0303140F Information Systems Security Program</b>	<b>7820</b>																																
<p>(U) <u><b>A. Mission Description Continued</b></u></p> <p>Funds will be used to support initial implementation and integration of PKI user smart card, PKI registration for both users, devices, servers, and initial training. In particular, the RDT&amp;E funds will be applied to PKI's integration and testing efforts with the Smart Card/Common Access Card (CAC). Current Defense Enrollment Reporting System (DEERS)/Real-Time Automated Personnel Identification Systems (RAPIDS) will be used to issue CACs to all AF military and civilian personnel. Furthermore, we will perform technology integration and testing of a new hardware CAC token into the user desktop environment. Finally, we alloted a small amount for AF SPO program support activities.</p> <p>(U) <u><b>FY 2001 (\$ in Thousands)</b></u></p> <table border="0"> <tr> <td>(U) \$1,135</td> <td>Continued development of technology for self-healing network systems (to include automated system recovery)</td> </tr> <tr> <td>(U) \$627</td> <td>Continued development of information attack correlation methodologies</td> </tr> <tr> <td>(U) \$2,536</td> <td>Continued development of methodologies for commercial software evaluation and steganography detection (\$2.0M Congressional add)</td> </tr> <tr> <td>(U) \$746</td> <td>Continued development of extensible prototype framework for Enterprise Defense to support protection of warfighter mission critical information flows</td> </tr> <tr> <td>(U) \$346</td> <td>Continued effort to transition secure wrapper technologies into Air Force systems</td> </tr> <tr> <td>(U) \$638</td> <td>Continued effort to transition DARPA information assurance technology into AF Information Protect architecture</td> </tr> <tr> <td>(U) \$287</td> <td>Began effort to develop metrics for reliable information assurance measurement &amp; testing</td> </tr> <tr> <td>(U) \$9,881</td> <td>Managed development of secure interoperable agent computing (\$10M Congressional Add)</td> </tr> <tr> <td>(U) \$5,379</td> <td>Expedited the PKI program--specifically, the prototyping PKI support for Interface/Integration of Registration with Common Access Cards with peripheral readers AF-wide (\$5.5M Congressional Add)</td> </tr> <tr> <td>(U) \$21,575</td> <td>Total</td> </tr> </table> <p>(U) <u><b>FY 2002 (\$ in Thousands)</b></u></p> <table border="0"> <tr> <td>(U) \$834</td> <td>Continue development of technology for self-healing network systems (to include automated system recovery)</td> </tr> <tr> <td>(U) \$526</td> <td>Continue development of information attack correlation methodologies</td> </tr> <tr> <td>(U) \$694</td> <td>Continue development of methodologies for commercial software evaluation and steganography detection</td> </tr> <tr> <td>(U) \$876</td> <td>Continue development of secure agent frameworks for Enterprise Defense to support protection of the warfighter C4ISR systems</td> </tr> <tr> <td>(U) \$324</td> <td>Continue effort to transition secure wrapper technologies into Air Force systems</td> </tr> <tr> <td>(U) \$425</td> <td>Continue effort to transition DARPA information assurance (IA) technology into AF Information Protection, Detection, &amp; Response architecture</td> </tr> </table>			(U) \$1,135	Continued development of technology for self-healing network systems (to include automated system recovery)	(U) \$627	Continued development of information attack correlation methodologies	(U) \$2,536	Continued development of methodologies for commercial software evaluation and steganography detection (\$2.0M Congressional add)	(U) \$746	Continued development of extensible prototype framework for Enterprise Defense to support protection of warfighter mission critical information flows	(U) \$346	Continued effort to transition secure wrapper technologies into Air Force systems	(U) \$638	Continued effort to transition DARPA information assurance technology into AF Information Protect architecture	(U) \$287	Began effort to develop metrics for reliable information assurance measurement & testing	(U) \$9,881	Managed development of secure interoperable agent computing (\$10M Congressional Add)	(U) \$5,379	Expedited the PKI program--specifically, the prototyping PKI support for Interface/Integration of Registration with Common Access Cards with peripheral readers AF-wide (\$5.5M Congressional Add)	(U) \$21,575	Total	(U) \$834	Continue development of technology for self-healing network systems (to include automated system recovery)	(U) \$526	Continue development of information attack correlation methodologies	(U) \$694	Continue development of methodologies for commercial software evaluation and steganography detection	(U) \$876	Continue development of secure agent frameworks for Enterprise Defense to support protection of the warfighter C4ISR systems	(U) \$324	Continue effort to transition secure wrapper technologies into Air Force systems	(U) \$425	Continue effort to transition DARPA information assurance (IA) technology into AF Information Protection, Detection, & Response architecture
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Project 7820	Page 14 of 19 Pages	Exhibit R-2A (PE 0303140F)																																



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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)								DATE February 2002				
BUDGET ACTIVITY <b>07 - Operational System Development</b>				PE NUMBER AND TITLE <b>0303140F Information Systems Security Program</b>				PROJECT <b>7820</b>				
<b>(U) C. Other Program Funding Summary (\$ in Thousands)</b>												
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</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	22,610	5,048	5,133	5,235	5,344	5,422	5,538		54,330			
(U) Other APPN APPN 3600/PE 33112F/ PE Title AF Communca- tions/BPAC 674884/ Title PKI												
<b>(U) D. Acquisition Strategy</b>												
All major contracts within this Program Element are awarded after full and open competition.												
<p>PKI: Electronic Systems Center (ESC) Information Assurance Product Area Directorate (PAD) manages the AF PKI Program. All major contracts within this program element are scheduled to be awarded after full and open competition or through existing government contracting vehicles. The options under review include: GSA, Standard AF contract (through the Standard Systems Group, AL), and Information Technology Services Program (ITSP) to support engineering effort and equipment for the integration of Common Access Card tokens. Current PKI program strategy is to use the ITSP contract.</p>												
<b>(U) E. Schedule Profile</b>												
	<u>FY 2001</u>			<u>FY 2002</u>			<u>FY 2003</u>					
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Requirements Review Boards		*				X			X			
(U) Transition secure wrapper tech development to AF systems						X					X	
(U) Development of self healing network systems					*							X
(U) DARPA information assurance transition		*			*		X				X	
(U) Devel technology for tracing intrusions							X				X	
(U) Information attack correlation technology development					*		X				X	
(U) Develop & demo extensible prototype framework for Enterprise Defense		*			*	X		X	X			X
(U) Develop metrics for reliable IA measurement & testing		*				X			X			
Project 7820	Page 16 of 19 Pages						Exhibit R-2A (PE 0303140F)					

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2A Exhibit)										DATE February 2002		
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT		
<b>07 - Operational System Development</b>					<b>0303140F Information Systems Security Program</b>					<b>7820</b>		
<b>(U) <u>E. Schedule Profile Continued</u></b>												
		<u>FY 2001</u>				<u>FY 2002</u>				<u>FY 2003</u>		
	1	2	3	4	1	2	3	4	1	2	3	4
(U) Develop automated info damage assessment and recovery	*				*				X			
(U) Begin effort to evaluate biometric systems						X		X			X	
(U) Begin development of cyber forensic tools & methodologies						X					X	
(U) Completed prototyping support for PKI interface/integration of tokens				*								
(U) Secure interoperable distributed agent computing (Congressional add)	*							X				
KEY: * Denotes Completed Events; X Denotes Planned Events.												
Project 7820				Page 17 of 19 Pages				Exhibit R-2A (PE 0303140F)				

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)							DATE February 2002			
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
<b>07 - Operational System Development</b>				<b>0303140F Information Systems Security Program</b>				<b>7820</b>		
<b>(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u></b>										
					<u>FY 2001</u>		<u>FY 2002</u>			<u>FY 2003</u>
(U)	DARPA technology insertion/transition				638		425			473
(U)	Secure distributed computing/collaborative planning				9,881		9,371			417
(U)	Self-healing network system (to include automated system recovery)				1,135		834			511
(U)	Wrappers to secure commercial-off-the-shelf ( COTS)				2,536		324			0
(U)	Methodologies for commercial software evaluation and steganography detection				346		694			298
(U)	Information attack data correlation				627		526			603
(U)	Extensible framework for Enterprise Defense				746		876			926
(U)	Reliable information assurance measurement & testing				287		414			536
(U)	PKI				5,379		0			0
(U)	Active response & cyber forensic tools				0		362			458
(U)	Biometric systems (wired & wireless networks)				0		197			184
(U)	Active response/dynamic policy enforcements to attacks				0		0			48
(U)	Dynamic, cost effective risk mitigation tools				0		0			567
(U)	Total				21,575		14,023			5,021
<b>(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u></b>										
<b>(U) <u>Performing Organizations:</u></b>										
<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 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
FFRDC (MITRE)	MIPR	On-Going	N/A	N/A	652	6,094	4,108	1,108	Continuing	TBD
Multiple Contractors	CPFF	On-Going	N/A	N/A	2,277	13,090	6,523	3,522	Continuing	TBD
Universities	CPFF	On-Going	N/A	N/A	368	2,391	3,392	391	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 February 2002	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
<b>07 - Operational System Development</b>		<b>0303140F Information Systems Security Program</b>			<b>7820</b>	
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
		<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>
						<u>Program</u>
<u>Subtotals</u>						
Subtotal Product Development		3,297	21,575	14,023	5,021	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project		3,297	21,575	14,023	5,021	TBD