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Exhibit R-2, RDT&E Budget Item Justification								Date: June 2001	
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE				
RESEARCH, DEVELOPMENT, TEST & EVALUATION, DEFENSE-WIDE, BUDGET ACTIVITY 4					PHYSICAL SECURITY EQUIPMENT PE 0603228D8Z				
COST (\$ in Millions)	FY 2000	FY 2001	FY2002					Cost to Complete	Total Cost
Total PE Cost	25.589	25.866	33.543					CONTINUING	CONTINUING
HALT	0.527	0.976	0.000					N/A	
CROWS	0.100	0.350	0.280					N/A	
HVISS	0.200	0.460	3.500					CONTINUING	CONTINUING
PEWD II	0.300	0.500	1.369					CONTINUING	CONTINUING
ETF	0.200	1.850	2.500					CONTINUING	CONTINUING
Delay/Denial D/D	0.350	0.114	0.900					CONTINUING	CONTINUING
Product Development/Qualification	0.454	0.960	0.925					CONTINUING	CONTINUING
Advanced Technology Program	0.000	0.266	0.948					CONTINUING	CONTINUING
Product Testing & Support	0.000	0.634	0.975					CONTINUING	CONTINUING
COTS	3.500	4.091	3.873					CONTINUING	CONTINUING
Technology Base	2.564	3.500	5.384					CONTINUING	CONTINUING
WSA	1.794	0.000	0.000					N/A	
TASS	3.600	2.965	4.672					CONTINUING	CONTINUING
WSS	2.656	2.482	2.633					CONTINUING	CONTINUING
EDE	2.452	2.531	3.834					CONTINUING	CONTINUING
Locks, Safes, Vaults	1.492	1.187	1.750					CONTINUING	CONTINUING
MDARS-E	5.400	3.000	0.000					N/A	

UNCLASSIFIED

UNCLASSIFIED

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Date:

June 2001

A. Mission Description and Budget Item Justification. This program is a budget activity level 4 based on the demonstration/validation activities ongoing within the program. The purpose of this program is to develop physical security equipment (PSE) systems for all DoD components, to include Force Protection. This program supports the protection of tactical and nuclear weapons systems, DoD personnel and DoD facilities. Funding for critical RDT&E security improvements within service channels has fluctuated widely over the years and prompted the FY89 Congressionally directed consolidation of the Services and former Defense Special Weapons Agency (DSWA) / Defense Threat Reduction Agency (DTRA) PSE RDT&E funds into this single OSD controlled program element. The funds are used to provide PSE RDT&E for individual Service and Joint PSE requirements. The PSE program is organized so that an ongoing DoD-coordinated Joint Action Group, consisting of Army, Navy, Air Force, and Defense Threat Reduction Agency (DTRA) representatives monitors, directs and prioritizes potential and existing PSE programs. With few exceptions, each Service sponsors RDT&E efforts for technologies and programs, which have multi-service applications. The funds are also employed to evaluate exploratory development of Physical Security Equipment. This program element supports the Army's advanced engineering development of Interior Detection, Exterior Detection, Security Lighting, Security Barriers and Security Display Units. In a like manner, the program element also supports the Air Force's PSE RDT&E effort in the area of Exterior Detection/Surveillance, Entry Control, Delay/Denial, Tactical Systems and Airborne Intrusion. Finally, the program supports Navy RDT&E efforts in the areas of Waterside Security, Explosive Detection, and improved technology for Locks, Safes and Vaults. Beginning with FY 1997, this PE includes funding for Force Protection Commercial-Off-The-Shelf (FP COTS) evaluation and testing, which has received focus since the 1996 Khobar Towers terrorist bombing incident. The FP COTS testing applies to all available technologies, which are considered effective for DoD use.

(U) FY 2000 Accomplishments

HINDER ADVERSARIES WITH LESS THAN LETHAL TECHNOLOGY (HALT) (0.527 million)

- Awarded EMD contract to develop a non-lethal eye-safe laser for all ranges, tactically rugged, and capable of operating over full military temperature ranges.
- Obtained Legal and Medical approval.

COMMON REMOTELY OPERATED WEAPON SYSTEM (CROWS) (0.100 million)

- Prepared ORD, Specification, and SOW Development for EMD award.
- Performed proof of concept demonstration and risk reduction activities.

UNCLASSIFIED

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification	Date: June 2001
<p>HIGH VALUE ITEM SECURITY SYSTEM (HVISS) PHASE II Radio Frequency Identification (RFID) (0.200 million)</p> <ul style="list-style-type: none"> • Monitored Applied Research Efforts. • Continued preparation of Concept Formulation Package. • Updated Project Plan. <p>PLATOON EARLY WARNING DEVICE II (PEWD II) (0.300 million)</p> <ul style="list-style-type: none"> • Completed market investigation/TASS determination. • Continued evaluation of candidate Non-Developmental Items (NDI)/COTS Systems. • Initiated Joint Army/Air Force Product Improvement effort. <p>ELECTRONIC TRIP FLARE (ETF) (0.200 million)</p> <ul style="list-style-type: none"> • Awarded Broad Agency Announcement (BAA) Contract to Ocean Atmospheric Science, Inc. to develop Brassboard prototype. • Monitored Technical Support Working Group (TSWG) prototype development effort. <p>DELAY/DENIAL (D/D) DEVELOPMENT/QUALIFICATION (0.350 million)</p> <ul style="list-style-type: none"> • Worked with the Joint Non-lethal Weapons Directorate (JNLWD) to develop future plans for active denial technology and a plan for public acceptance of eye-safe laser weapons. • Developed several transition plans for bringing promising laboratory programs into the acquisition community. <p>PRODUCT DEVELOPMENT/QUALIFICATION (0.454 million)</p> <ul style="list-style-type: none"> • Performed the research and planning for an out-of-cycle Foreign Comparative Test (FCT) Program. Program was approved--funding received and is being worked. Other FCT funded programs are in various stages and being worked. • Completed three CWG tests and are working six more. • Planned for and put on contract a new program to develop a long-range, all weather, 360 degree sensor. <p>(U) <u>FY 2001 Plans</u></p> <p>HINDER ADVERSARIES WITH LESS THAN LETHAL TECHNOLOGY (HALT) (0.976 million)</p> <ul style="list-style-type: none"> • Complete EMD Phase. <p>DELAY/DENIAL (D/D) DEVELOPMENT/QUALIFICATION (0.114 million)</p> <ul style="list-style-type: none"> • Continue to manage D/D product developments. • Continue to evaluate D/D COTS products. • Continue to recommend new D/D technologies. 	

UNCLASSIFIED

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<ul style="list-style-type: none"> • Develop new/better methods to delay intruders intent on entering secured external areas. <p>COMMON REMOTELY OPERATED WEAPON SYSTEM (CROWS) (0.350 million)</p> <ul style="list-style-type: none"> • Continue FY00 efforts for proof of concept demonstration leading up to EMD award, Dec 00. • Insert AF requirements into this Army effort. Ensure AF requirements are being met. <p>ADVANCED TECHNOLOGY PROGRAM (0.266 million)</p> <ul style="list-style-type: none"> • Identify technological advances at DoD, DoE, University Labs, DARPA programs, etc., with PSE utility. • Respond to and research FP Battlelab requests for information. • Prepare operational systems improvement plans. Develop technology roadmap. Update system architecture. <p>PRODUCT TESTING AND SUPPORT (0.634 million)</p> <ul style="list-style-type: none"> • Support all testing of PSE products (COTS, NDI, Developmental) and systems testing. • Provide Logistical and Cost Estimating support to on-going programs. <p>PRODUCT DEVELOPMENT/QUALIFICATION (0.960 million)</p> <ul style="list-style-type: none"> • Continue to manage sensor, access control, and assessment product developments. • Continue to evaluate sensor, access control, and assessment COTS products. • Continue to recommend new sensor, access control, and assessment technologies. <p>HIGH VALUE ITEM SECURITY SYSTEM (HVISS) PHASE II (RFID) (0.460 million)</p> <ul style="list-style-type: none"> • Evaluate Applied Research effort to determine acquisition approach. • Complete Concept Formulation Package (CFP) <p>ELECTRONIC TRIP FLARE (ETF) (1.850 million)</p> <ul style="list-style-type: none"> • Initiate Concept Formulation Package (CFP) • Monitor Technical Support Working Group prototype efforts. • Conduct prototype (DT) testing/integration effort. <p>PLATOON EARLY WARNING DEVICE II (PEWD II) (0.500 million)</p> <ul style="list-style-type: none"> • Monitor EER prototype development effort. • Conduct Critical Design Review (CDR), Phase I. • Conduct CDR, Phase II. 	

UNCLASSIFIED

UNCLASSIFIED

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<p>(U) <u>FY 2002 Plans</u></p> <p>DELAY/DENIAL (D/D) DEVELOPMENT/QUALIFICATION (0.900 million)</p> <ul style="list-style-type: none"> • Continue to manage D/D product developments. • Continue to evaluate D/D COTS products. • Continue to recommend new D/D technologies. <p>COMMON REMOTELY OPERATED WEAPON SYSTEM (CROWS) (0.280 million)</p> <ul style="list-style-type: none"> • Continue with EMD Phase by providing Engineering, Logistics, and Cost Estimating support. <p>ADVANCED TECHNOLOGY PROGRAM (0.948 million)</p> <ul style="list-style-type: none"> • Continue to identify technological advances at DoD, DoE, University Labs, DARPA programs, etc., with PSE utility. • Continue to respond/research FP Battlelab requests for information. • Continue to prepare operational systems improvement plans. Develop technology roadmap. Update system architecture. <p>PRODUCT TESTING AND SUPPORT (0.975 million)</p> <ul style="list-style-type: none"> • Continue to support all testing of PSE products (COTS, NDI, Developmental) and systems testing. • Continue to provide Logistical and Cost Estimating support to on-going programs. <p>PRODUCT DEVELOPMENT/QUALIFICATION (0.925 million)</p> <ul style="list-style-type: none"> • Continue to manage sensor, access control, and assessment product developments. • Continue to evaluate sensor, access control, and assessment COTS products. • Continue to recommend new sensor, access control, and assessment technologies. <p>HIGH-VALUE ITEM SECURITY SYSTEM (HVISS) PHASE II (RFID) (3.500 million)</p> <ul style="list-style-type: none"> • Award Broad Agency Announcement (BAA) Contract. • Monitor TSWG prototype development effort. • Conduct Technical Feasibility Testing (TFT). • Conduct MS A (IPR). <p>ELECTRONIC TRIP FLARE (ETF) (2.500 million)</p> <ul style="list-style-type: none"> • Transition Technical Support Working Group (TSWG) effort to Army. • Complete Concept Formulation Package (CFP). • Conduct MS A/B In-Process Review. 	

UNCLASSIFIED

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Exhibit R-2, RDT&E Budget Item Justification

Date:

June 2001

PLATOON EARLY WARNING DEVICE II (PEWD II) (1.369 million)

- Conduct Technical Feasibility Testing (TFT)
- Field 69 units to Brigade Combat Team (BCT).
- Conduct MS C IPR.

B. Program Change Summary (\$ million)

	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>Total Cost</u> Cont
Previous President's Budget Submit	37.107	36.201	35.284	
Appropriated Value	26.107	26.107		
Adjustments to Appropriated Value				
a. Congressionally Directed Appropriation Reduction				
b. Congressionally Directed Undistributed Reduction		(0.183)		
c. OSD Directed Program Reduction/Increase	(0.518)	(0.058)	(1.741)	
Current Budget Submit/President's Budget	25.589	25.866	33.543	Cont

Change Summary Explanation:

Funding: Adjustments reflect inflation savings, below threshold reprogrammings and the Government-wide rescission

Schedule: N/A

Technical: N/A

C. Other Program Funding Summary

	<u>Cost</u>	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
Procurement Line P-1 No(s) - USAF		1.000	1.000	1.000
Milcon Project No(s) - N/A				
Related RDT&E: - N/A				

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UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification				Date:
D. <u>Acquisition Strategy:</u>				
E. <u>Schedule Profile</u>				
Fiscal Year actual and planned events:				
	FY2000	FY2001	FY2002	
Acquisition Milestones				
HALT	MS II			
CROWS		MS II		
HVISS			MS A	
PEWD II			MS C	
ETF			MS B	
Engineering Milestones				
N/A				
	FY2000	FY2001	FY2002	
T&E Milestones				
HALT		QT&E		
HVISS			TFT	
PEWD II			TFT	
ETF		DT		
Contract Milestones				
HVISS			BAA Awd	
ETF	BAA Awd			

UNCLASSIFIED

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Exhibit R-2a, RDT&E Project Justification									Date:		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER					
RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 4			PE 0603228D8Z			Commercial off the Shelf (COTS)					
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY2007	Cost to Complete	Total Cost	
COTS	3.500	4.091	3.873						Continuing	Continuing	
RDT&E Articles Qty											
<p><u>A. Mission Description and Budget Item Justification.</u> The DoD Force Protection Commercial-Off-The-Shelf (COTS) evaluation and integration project identifies and evaluates commercial systems and equipment that have potential for solving critical Force Protection problems. Equipment is tested in laboratory and operational settings to determine its suitability for a wide range of Force Protection applications. These include applications in nuclear, aircraft flight line, personnel facilities and resource protection security. Products that are identified as having military value are made available for use by incorporating them into existing or new programs. Current emphasis is on products that provide day/night all-weather detection/surveillance, sniper location, non-lethal defensive capability, barriers, large vehicle explosives detection, water-side security systems, and personal and tactical security systems. Planned testing may be accomplished at the established DoD Test Facility at Eglin AFB, FL or another appropriate/necessary facility.</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> Developed a new system capability through the integration of Commercial-Off-The Shelf (COTS) products. Tested/demonstrated new capability at Joint Expeditionary Force Experiment (JEFX)'99. Performed scheduled FY 2000 evaluations and test of selected COTS equipment/systems. Published appropriate reports. Updated the User's Guide of Commercially available Non-Developmental Items for Force Protection users. <p>(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> Procure and deliver COTS Force Protection Equipment in support of DoD urgent and compelling requirements for evaluation and testing. Update methodology and publish evaluation and test schedule for FY 2001. Perform scheduled FY 2001 test and evaluations of selected COTS equipment/systems. Conduct Force Protection Equipment Demonstration III 8-10 May 2001. 											

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification	Date: June 2001																				
<p>(U) <u>FY 2002 Plans</u></p> <ul style="list-style-type: none"> • Procure and deliver COTS Force Protection Equipment in support of DoD urgent and compelling requirements for evaluation and testing. • Publish appropriate reports. • Update the User's Guide of Commercially available Non Developmental Items for Force Protection users. • Update methodology and publish test and evaluation schedule for FY 2002. <p>B. Other Program Funding Summary</p> <p>C. Acquisition Strategy: Identify available government contracts or commence action to competitively award delivery order contracts.</p> <p>D. Schedule Profile:</p> <p>Fiscal Year actual and planned events:</p> <table> <thead> <tr> <th></th> <th>FY2000</th> <th>FY2001</th> <th>FY2002</th> </tr> </thead> <tbody> <tr> <td>Acquisition Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Engineering Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>T&E Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Contract Milestones</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			FY2000	FY2001	FY2002	Acquisition Milestones				Engineering Milestones				T&E Milestones				Contract Milestones			
	FY2000	FY2001	FY2002																		
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T&E Milestones																					
Contract Milestones																					

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification								Date: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 4			PROGRAM ELEMENT PE 0603228D8Z		PROJECT NAME AND NUMBER TECHNOLOGY BASE					
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002						Cost to Complete	Total Cost
Technology Base	2.564	3.500	5.384						Cont	Continuing
RDT&E Articles Qty										
<p>A. <u>Mission Description and Budget Item Justification.</u> The Defense Threat Reduction Agency (DTRA) is responsible for coordinating technology base efforts that feed into the advanced development projects within the Physical Security Equipment (PSE) Program. DTRA performs the exploratory development on technologies that are nominated and prioritized by the Services and the Physical Security Equipment Action Group (PSEAG). This annual process determines which technologies have potential to meet Service interests in fulfilling eventual Joint Service and Service-unique requirements.</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • Completed and demonstrated prototype hardware for the improved laser diode, miniaturized radio frequency tags, acoustic detection and classification sensor, nuclear quadrupole resonance sensor, photo-neutron probe for the detection of explosives, tactical security sensor internetting system, an advanced user interface system, and the weather vulnerability assessment tool. • Continued the detection on the move (exterior) project, security vehicle with acoustic guidance, and the fluorescence detection of explosives detection projects. • Initiated the Video Forward Looking Infrared (FLIR) Imager, the Remote Detection Target Sensor, the Target Classifying Sensor, and the Blue Rose fiber optic cable sensor projects. <p>(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> • Complete and demonstrate the results of applied research and development for the detection on the move (exterior) project, the security vehicle with acoustic guidance project, and the fluorescence detection of explosives projects. • Continue the Target Classifying Sensor Project, Blue Rose Fiber Optic Sensor Project and the Inspection AIDE Project which is a follow-on to the Photo Neutron Probe Project. 										

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification	Date: <div style="text-align: center;">June 2001</div>																				
<p>(U) <u>FY 2002 Plans</u></p> <ul style="list-style-type: none"> • Initiate new projects for the Wireless Network Security Sensor; the Multi-Beam Antennae for Active Microwave and Passive Infrared Sensors; the TASS Miniature Acoustic/Seismic Sensor; the Compact Video Motion Detection Sensor; the Long Range Intelligent Infrared Fence; the Non-Lethal Swimmer Interdiction Device; and the Shoreline Intruder Detection System. • Continue the Video FLIR Imager project; the Wireless Network Security Sensors project; the Force Protection Sensor Selector project; the Multi-Beam Antennae for Active Microwave and Passive Infrared Sensors project; the Remote Detection Target Sensor project; the Target Classifying Sensor project; the Blue Rose fiber optic cable sensor project; the Non-Lethal Swimmer Interdiction device project; and the Shoreline Intruder Detection System project. • Initiate new projects as agreed upon with the Service sponsors and funding permits. <p>E. Other Program Funding Summary</p> <p>F. Acquisition Strategy:</p> <p>G. Schedule Profile:</p> <p>Fiscal Year actual and planned events:</p> <table style="width: 100%; margin-top: 10px;"> <thead> <tr> <th></th> <th style="text-align: center;">FY2000</th> <th style="text-align: center;">FY2001</th> <th style="text-align: center;">FY2002</th> </tr> </thead> <tbody> <tr> <td>Acquisition Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Engineering Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>T&E Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Contract Milestones</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			FY2000	FY2001	FY2002	Acquisition Milestones				Engineering Milestones				T&E Milestones				Contract Milestones			
	FY2000	FY2001	FY2002																		
Acquisition Milestones																					
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Contract Milestones																					

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER					
RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 4			PE 0603228D8Z			WEAPON STORAGE AREA (WSA)/AIR BASE SECURITY UPGRADES					
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002						Cost to Complete	Total Cost	
WSA	1.794	0.000	0.000						N/A	N/A	
RDT&E Articles Qty											
<p>A. <u>Mission Description and Budget Item Justification.</u> Develop, test, and deploy equipment that will provide new capability, upgrade the existing capability, or reduce the sustainment cost of WSA/Air Base Security. This activity will be accomplished through the development, testing and employment of automatic access control equipment, command and control equipment, and intrusion detection and assessment equipment that permit the security of WSA/Air Base facilities. Test and deploy (as appropriate) Commercial-Off-The-Shelf (COTS) products.</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • Developed a new system Force Protection Command and Control (FPC2) capability through the integration of Commercial-Off-The Shelf (COTS) products. • Tested/demonstrated new Force Protection Command and Control (FPC2) capability at Joint Expeditionary Force Experiment (JEFX)'99. • Assisted the Force Protection Battlelab with developing and proving the operational benefits of FPC2. • Worked with the Battlelab to develop the follow-on Combat Support C2 System and the testing/demonstration of the new capability at the Joint Expeditionary Force Experiment (JEFX) 00. • Awarded a contract to install a 2D Video Motion Detection (VMD) system at Altus AFB Flightline and temporarily install and evaluate a 3D VMD system. • Began development of a new system architecture that takes advantage of advances in technology. • Continued market research and testing of COTS security products. <p>(U) <u>FY 2001 Plans</u></p>											

UNCLASSIFIED

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<ul style="list-style-type: none"> To more accurately reflect the needs of the Air Force in FY 2001 and beyond, this effort has been divided into multiple programs to evaluate, develop, test and purchase physical security equipment that support all facilities and flightlines. The efforts previously identified as only "WSA", also have applications in other areas. 					
(U) <u>FY 2002 Plans</u> N/A					
B. Other Program Funding Summary					
Procurement	<u>2000</u> 3.499	<u>2001</u> 3.011	<u>2002</u> 5.594	<u>To</u> Complete Cont	<u>Total</u> Cost Cont
C. Acquisition Strategy: Identify available government contracts or commence action to competitively awarded delivery order contracts.					
D. Schedule Profile:					
Fiscal Year actual and planned events:					
FY2000	FY2001	FY2002			
Acquisition Milestones					
T&E Milestones					
Contract Milestones					
VMD	CA				

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER					
RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 4			PE 0603228D8Z		TACTICAL AUTOMATED SECURITY SYSTEM (TASS)					
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002						Cost to Complete	Total Cost
TASS	3.600	2.965	4.672						Cont	Continuing
RDT&E Articles Qty										
<p>A. <u>Mission Description and Budget Item Justification.</u> The Tactical Automated Security System (TASS), an Air Force funded procurement and DoD funded R&D program, is an ongoing effort to develop an integrated, portable, relocatable security system to provide Force Protection capability for personnel, dispersed assets, fixed base facilities and Air Base Ground Defense applications. The system includes remote sensing, alarm monitoring through fiber optic and wireless data communications, remote assessment through the use of day/night all weather Thermal Imaging and CCTV systems. The system employs a PC-based annunciator and relies on an internal power and recharging system.</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • Conducted Follow-On Test and Evaluation (FOT&E) and corrected critical FOT&E deficiencies. • Conducted testing of COTS technology to add capabilities to the TASS suite of products. • Awarded and performed technology enhancement Engineering Change Proposals (ECP) to improve/provide new capabilities. These included the upgrade to the Data Communications system to meet US Army size and weight requirements, add an encryption capability, and add a GPS capability for team location functions. In addition, a major software upgrade was developed, tested, and fielded increasing capabilities to include auto-assessment. • Downsized TASS footprint requirements to a level consistent with AEF (Aerospace Expeditionary Force) concepts. <p>(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> • Complete the upgrade to the data communications system to meet AF and ARMY requirements, to include reduced component size, added encryption capability, and GPS. • Conduct testing of COTS technology to add capabilities to the TASS suite of products. • Award and perform technology enhancement ECPs to improve/provide new capabilities. Included will be: (1) annunciator software upgrade IV that leverages current market technology to increase capability while decreasing procurement costs; (2) an upgrade of power system components including battery modules and solar panels; (3) develop new sensors to increase performance while decreasing NAR/FAR (Nuisance Alarm Rates/False Alarm Rates). 										

UNCLASSIFIED

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<ul style="list-style-type: none"> • Conduct testing of COTS products to add capabilities to the TASS suite of products. This will include testing short-range thermal imagers and a new class hand-held thermal imager. 																					
<p>(U) FY 2002 Plans</p> <ul style="list-style-type: none"> • Conduct testing of COTS products to add capabilities to the TASS suite of products. • Award and perform technology enhancement ECPs to improve/provide new capabilities. Included will be: (1) developing an upgraded assessment network that greatly increases the situational awareness of the operator; (2) the program will develop and incorporate sensor systems; (3) an upgrade to the annunciator software system to increase user capabilities for nuclear safeguarding applications; and (4) an upgrade to the system to provide for a tactical entry control capability. • Continue the miniaturization efforts to produce a system that is small, lightweight, and durable. 																					
<p>B. Other Program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 15%; text-align: center;"><u>2000</u></th> <th style="width: 15%; text-align: center;"><u>2001</u></th> <th style="width: 15%; text-align: center;"><u>2002</u></th> <th style="width: 15%; text-align: center;"><u>To Complete Cont</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost Cont</u></th> </tr> </thead> <tbody> <tr> <td style="padding-left: 40px;">Procurement</td> <td style="text-align: center;">22.200</td> <td style="text-align: center;">25.000</td> <td style="text-align: center;">22.200</td> <td></td> <td></td> </tr> </tbody> </table>							<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>To Complete Cont</u>	<u>Total Cost Cont</u>	Procurement	22.200	25.000	22.200						
	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>To Complete Cont</u>	<u>Total Cost Cont</u>																
Procurement	22.200	25.000	22.200																		
<p>C. Acquisition Strategy: One (1) large, two (2) Small Business competitively awarded contracts with Technology enhancement delivery order available.</p>																					
<p>D. Schedule Profile:</p> <p>Fiscal Year actual and planned events:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 15%; text-align: center;">FY2000</th> <th style="width: 15%; text-align: center;">FY2001</th> <th style="width: 15%; text-align: center;">FY2002</th> </tr> </thead> <tbody> <tr> <td>- FOT&E</td> <td></td> <td></td> <td></td> </tr> <tr> <td>- P3I/COTS</td> <td></td> <td></td> <td></td> </tr> <tr> <td>- P3I/ECPs</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>							FY2000	FY2001	FY2002	- FOT&E				- P3I/COTS				- P3I/ECPs			
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<p>Contract Milestones</p>																					

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Exhibit R-2a, RDT&E Project Justification									Date: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 4			PROGRAM ELEMENT PE 0603228D8Z		PROJECT NAME AND NUMBER WATERSIDE SECURITY SYSTEM (WSS)					
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002						Cost to Complete	Total Cost
WSS	2.656	2.482	2.633						Continuing	Continuing
RDT&E Articles Qty										
<p>A. <u>Mission Description and Budget Item Justification.</u> The Space and Naval Warfare Center (SPAWARCEN), San Diego is the Center of Excellence for waterfront security. Responsibilities include fixed and transportable waterfront security systems, swimmer detection sonars, and commercial-off-the-shelf (COTS) equipment test and evaluation, which focuses on waterfront force protection. The program is under the sponsorship and direction of CNO (N34).</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • Supported installation P3I of the WSS at operational sites. • Tested sonar and thermal imager technologies at SUBASE Kings Bay, Bangor and NAVCENT. • Established the Mike 5000 Pier test and integration facility and commenced the evaluation of COTS. • Conducted testing of the Sea Threat Assessment and Response System. • Conducted testing of the Diver Imaging system in coordination with DTRA. • Worked closely with submarine community for the establishment of technology requirements. • Initiated "knowledge management" initiatives to deliver information to the PSE community. <p>(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> • Manage the Waterside Security System and Shipboard Physical Security programs. • Evaluate and test COTS technologies for the waterfront environment. • Test and integrate WSS, which includes barriers and underwater assessment capabilities. • Initiate RDT&E for the development of the new generation of swimmer detection sonar. • Support installation WSS systems at operational sites. • Coordinate Knowledge Management efforts with other DoD Services. <p>(U) <u>FY 2002 Plans</u></p> <ul style="list-style-type: none"> • Evaluate, test, and integrate emerging technologies into the waterfront security program. • Test and evaluate new sonar technology for swimmer detection. • Evaluate and integrate swimmer assessment capabilities into the WSS. • Investigate robotics for detection and assessment of hostile swimmers. 										

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Exhibit R-2a, RDT&E Project Justification	Date: June 2001			
<ul style="list-style-type: none"> • Test swimmer detection technologies under the Foreign Comparative Testing Program. • Support WSS at operational sites. • Coordinate Knowledge Management efforts with other federal agencies (FAA, Energy, etc.). <p>B. Other Program Funding Summary</p> <p>C. Acquisition Strategy</p> <p>D. Schedule Profile:</p> <p>Fiscal Year actual and planned events:</p> <table data-bbox="672 633 1113 665"> <tr> <td>FY2000</td> <td>FY2001</td> <td>FY2002</td> </tr> </table> <p>Acquisition Milestones</p> <p>Engineering Milestones</p> <p>T&E Milestones</p> <p>Contract Milestones</p>		FY2000	FY2001	FY2002
FY2000	FY2001	FY2002		

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Exhibit R-2a, RDT&E Project Justification									Date: June 2001	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER					
RDTE&E, DEFENSE WIDE, BUDGET ACTIVITY 4			PE 0603228D8Z		EXPLOSIVE DETECTION EQUIPMENT (EDE)					
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002						Cost to Complete	Total Cost
EDE	2.452	2.531	3.834						Continuing	Continuing
RDT&E Articles Qty										
<p>A. <u>Mission Description and Budget Item Justification.</u> The EDE Program's primary focus is to evaluate Commercial Off-the-Shelf (COTS) explosive detection products. Assessments of systems at Department of Defense (DoD) locations are a critical component of the effort, as is ensuring the results of such demonstrations or testing are readily available to the military services' decision-makers. Attempts to leverage previous independent testing and evaluation and supplementing other government investments in development of explosives screening systems is made. A limited amount of funding is earmarked for low-risk emerging technologies that may assist in increasing the likelihood of detecting improvised explosive devices, large vehicle bomb, etc.</p> <p>(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • Conducted a Security Technology Demonstration of the American Science and Engineering Mobile Truck X-ray Wide-Eye, a large imaging system, at an operational naval activity in Southwest Asia (February-March 2000). • Assessed the operation of the Quantum Magnetics QScan QR160, in a mail screening application, at an overseas DoD activity. • Assembled a kit of low-cost vehicle inspection equipment for the visual screening of cars and truck. • Updated the EDE catalog, a compilation of COTS product data. • Established a web site at www.explosivedetection.nfesc.navy.com for a wide range of EDE related information. • Hosted an EDE Symposium in January 2000 which drew attendees from academia, the private sector and other government agencies. • Identified near-term COTS solutions to explosive detection requirements, e. g., Camp Able Sentry and Camp Bondsteel. • Supported the Navy's Knowledge Management initiative. <p>(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> • Engaged the Federal Aviation Administration to select suitable EDE for use in mailroom screening. • Perform comparative evaluations of various COTS equipment/systems beginning with hand-held trace detectors. 										

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Exhibit R-2a, RDT&E Project Justification	Date: June 2001																				
<ul style="list-style-type: none"> • Provide low-cost vehicle inspection kits to a number of DoD organizations for deployment and evaluation. • Develop logistic support data, to include the publication of Quick Reference Cards, for selected commercially-available products. • Update and maintain the EDE web site. • Continue/transition the development of a photoneutron-based probe that enhances the capabilities of high-energy radiographic inspection for explosives <p>(U) <u>FY 2002 Plans</u></p> <ul style="list-style-type: none"> • Perform comparative evaluations of various COTS equipment/systems. • Develop logistic support data, to include the publication of Quick Reference Cards, for selected commercially-available products. • Update and maintain the EDE web site. <p>B. Other Program Funding Summary</p> <p>C. Acquisition Strategy: Current approach is an Abbreviated Acquisition Program. Most purchases or procurement of equipment will be made at the local or activity level.</p> <p>D. Schedule Profile:</p> <p>Fiscal Year actual and planned events:</p> <table> <thead> <tr> <th></th> <th>FY2000</th> <th>FY2001</th> <th>FY2002</th> </tr> </thead> <tbody> <tr> <td>Acquisition Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Engineering Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>T&E Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Contract Milestones</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			FY2000	FY2001	FY2002	Acquisition Milestones				Engineering Milestones				T&E Milestones				Contract Milestones			
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T&E Milestones																					
Contract Milestones																					

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Exhibit R-2a, RDT&E Project Justification									Date: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 4			PROGRAM ELEMENT PE 0603228D8Z		PROJECT NAME AND NUMBER DoD LOCKS, SAFES, VAULTS					
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002						Cost to Complete	Total Cost
LOCKS	1.492	1.187	1.750						Continuing	Continuing
RDT&E Articles Qty										

A. Mission Description and Budget Item Justification. The DoD Lock, Safes and Vaults Program identifies, tests and evaluates commercial hardware for suitability and compliance with security requirements, and tools and technology that may reduce the delay time afforded by present day security systems mandated by current regulations. The program also provides users with up-to-date security technology information by means of CD-ROM distribution. Other valuable services provided include testing security seals, analysis of alternative high security locking systems for Arms, Ammunition & Explosive (AA&E) applications, and evaluation of entry systems for "locked out" high security magazine doors.

(U) FY 2000 Accomplishments

- Finalized and received approval for National Security Information (NSI) Destruction CD-ROM.
- Installed 10 Internal Locking Device (ILD) systems and trained operators at Army ammunition storage facility Miesau, Germany.
- Conducted ILD forced entry test.
- Tested commercially available attack tools.
- Completed update and published High Security Padlock Technical Data Sheet (TDS).
- Developed and implemented online hotline tracking software and user guide.
- Finalized development, tested, and met approval requirements for alternative lightweight concrete for Navy High security magazine door.

(U) FY 2001 Plans

- Update and publish guide specifications for security equipment (as needed).
- Conduct a Security Seals Symposium.
- Identify and approve lead seal alternatives.
- Conduct evaluation and specify security seals for computer systems and combination locks.
- Identify and evaluate door systems used to protect AA&E.
- Incorporate design recommendations/enhancements into ILD User Data Package.

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Exhibit R-2a, RDT&E Project Justification	Date: June 2001																				
<p>(U) <u>FY 2002 Plans</u></p> <ul style="list-style-type: none"> • Update and publish guide specifications for security equipment (as needed). • Identify requirements for label seals and develop and publish specification. • Test and evaluate commercially available forced entry attack tools. • Develop and publish cost effective methods to upgrade attack resistance of AA&E magazine door systems. • Develop user training for security seals. <p>B. Other Program Funding Summary</p> <p>C. Acquisition Strategy</p> <p>D. Schedule Profile:</p> <p>Fiscal Year actual and planned events:</p> <table> <thead> <tr> <th></th> <th>FY2000</th> <th>FY2001</th> <th>FY2002</th> </tr> </thead> <tbody> <tr> <td>Acquisition Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Engineering Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>T&E Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Contract Milestones</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			FY2000	FY2001	FY2002	Acquisition Milestones				Engineering Milestones				T&E Milestones				Contract Milestones			
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Acquisition Milestones																					
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T&E Milestones																					
Contract Milestones																					

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Exhibit R-2a, RDT&E Project Justification									Date: June 2001	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER				
RDT&E, DEFENSE WIDE, BUDGET ACTIVITY 4			PE 0603228D8Z			MOBILE DETECTION ASSESSMENT RESPONSE SYSTEM - EXTERIOR (MDARS-E)				
Cost (\$ in Millions)	FY 2000	FY 2001	FY 2002						Cost to Complete	Total Cost
MDARS-E	5.400	3.000	0.000						N/A	
RDT&E Articles Qty										
<p>A. <u>Mission Description and Budget Item Justification.</u> The Mobile Detection Assessment Response System - Exterior (MDARS-E) will provide unmanned, roving security patrols among buildings and around the perimeter of large, fixed installations to include warehouses, large storage facilities and ammunition facilities. In support of security operations the system will manage inventories and track movement or disturbance of critical assets.</p> <p style="margin-left: 40px;">(U) <u>FY 2000 Accomplishments</u></p> <ul style="list-style-type: none"> • Conducted Technical Feasibility Testing (TFT) of the complete system in a field environment. • Conducted System Functional Review. • Initiated documentation supporting MS I/II In Process Review (IPR). <p style="margin-left: 40px;">(U) <u>FY 2001 Plans</u></p> <ul style="list-style-type: none"> • Prepare Engineering & Manufacturing Development contract package and Request for Proposal • Conduct MS I/II In Process Review (IPR). <p style="margin-left: 40px;">(U) <u>FY 2002 Plans</u></p> <ul style="list-style-type: none"> • Program successfully transitioned to Engineering & Manufacturing Development and 6.4 funding. <p>B. Other Program Funding Summary</p> <p>C. Acquisition Strategy: Identify available government contracts or commence action to competitively award delivery order contracts.</p>										

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Exhibit R-2a, RDT&E Project Justification				Date:
				June 2001
D. Schedule Profile:				
Fiscal Year actual and planned events:				
	FY2000	FY2001	FY2002	
Acquisition Milestones		MS I/II		
Engineering Milestones				
T&E Milestones	TFT			
Contract Milestones				

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Exhibit R-3 Cost Analysis (page 1)							Date:	June 2001					
DEFENSE-WIDE BUDGET ACTIVITY			Program Element PE 0603228D8Z				MDARS-E						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2000 Cost	2001 Cost	2001 Award Date	2002 Cost	2002 Award Date			Cost To Complete	Total Cost	Target Value of Contract	
Primary Hardware Development			2.800	0.800									
Ancilliary Hardware Development				0.300									
Systems Engineering			0.800	0.350									
Liscenses													
tooling													
GFE				0.150									
Award Fees													
Subtotal Product Development			3.600	1.600									
Remarks:													
Development Support			0.605	0.150									
Software Development			0.545										
Training Development				0.150									
Integrated Logistics Support			0.090										
Configuration Management			0.023	0.050									
Technical Data			0.337	0.050									
GFE													
Subtotal Support			1.600	0.400									
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)							Date:	June 2001					
DEFENSE-WIDE BUDGET ACTIVITY 0			Program Element PE 0603228D8Z				MDARS-E						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2000 Cost	2001 Cost	2001 Award Date	2002 Cost	2002 Award Date			Cost To Complete	Total Cost	Target Value of Contract	
User Appraisal			0.100	0.200									
Subtotal T&E			0.100	0.200									
Remarks:													
Contractor Engineering Support				0.456									
Government Engineering Support				0.278									
Program Management Support			0.006										
Program Management Personnel			0.072										
Travel			0.022	0.066									
Labor (Research Personnel)													
Miscellaneous													
Subtotal Management			0.100	0.800									
Remarks:													
Total Cost			5.400	3.000									
Remarks:													

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