

Exhibit R-2, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE/BA 4				R-1 ITEM NOMENCLATURE PHYSICAL SECURITY EQUIPMENT			PE 0603228D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	1.157	17.482	0.000	0.000	0.000	0.000	0.000	0.000
ENVIRONMENTAL MGMT	0.000	0.948	0.000	0.000	0.000	0.000	0.000	0.000
SEMD	1.157	2.700	0.000	0.000	0.000	0.000	0.000	0.000
FIRRE	0.000	7.800	0.000	0.000	0.000	0.000	0.000	0.000
PPSUMS	0.000	6.034	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

This program is a budget activity level 4 based on the concept/technology development activities ongoing within the program. The purpose of this program is to develop physical security equipment (PSE) systems for near term Physical Security and Force Protection capabilities. Changing operational missions and evolving threats to warfighting assets and personnel dictate that the advanced development of physical security equipment remains a continuing process. As the political, social and economic landscape of the world undergoes change, so do operational security requirements pursuant to the protection of the forces and assets deployed around the world to meet emergent DoD challenges. To support these security requirements, the PSE program adapts, evaluates and tests equipment to meet the needs of the security force. In addition to the cost/benefit analysis that each R&D effort undergoes, each project is further evaluated relative to size, weight, deployability, operational environment, and logistical life cycle. Activities include systems engineering, system architecture design, interoperability, logistics planning, and test and evaluation of Unmanned Systems. Mission applications for these Unmanned Systems include networking of sensors, enhancing mobile applications of security devices, and protecting/securing captured ordnance stockpiles in the Middle East. The programs being funded by this PE are key to providing robotics capabilities to currently deployed forces and will enhance our troops' mission success and survivability.

Dem & Evaluation of Environmental Management System for Defense Facilities (ENVIRONMENTAL MGMT) (0.948)

This program will support the evaluation, demonstration and creation of an environmental management system for defense facilities.

(U) FY 2003 Accomplishments

Effective October 1, 2003, funding for this program transfers to the Air Force. Please refer to PE 0603287F for FY 2003 accomplishments.

B. Program Change Summary:

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Previous President's Budget	1.183	0.000	0.000	0.000
Current BES	1.157	17.482	0.000	0.000
Total Adjustments				
Congressional program reductions				
Congressional rescissions				
Congressional increases	1.500	17.900		
Reprogrammings				
SBIR/STTR Transfer	-.317	-.418		

C. Other Program Funding Summary:

Not Applicable

D. Acquisition Strategy:

Not Applicable

E. Performance Metrics:

The program performance metrics are established/approved through the Joint Services Physical Security Equipment Action Group. The cost, schedule and technical progress of each project is reviewed at quarterly PSEAG meetings. Performance variances, are addressed and corrective action is implemented as necessary.

Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY RESEARCH, DEVELOPMENT, TEST, & EVALUATION, DEFENSE- WIDE, BUDGET ACTIVITY 4				R-1 ITEM NOMENCLATURE PHYSICAL SECURITY EQUIPMENT			PE 0603228D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
SEMD	1.157	2.700	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

The purpose of the Security Enhancement through Mobile Devices (SEMD) project is to enhance the ability of the Naval Criminal Investigative Service (NCIS) and security personnel at U.S. Navy facilities to perform their primary mission of protecting U.S. Navy personnel, installations and other assets. This will be done through the utilization of mobile devices to automate the process of authentication of identification cards and documents presented by individuals seeking entry into U.S. Navy facilities. SEMD will also automate checking federal, state and local Law Enforcement databases for “Be On the Look Out” (BOLO) information and generate Suspicious Incident Reports. SEMD will provide for the secure access, reporting and dissemination of information.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/ Effort/Subtotal Cost	1.157	2.700	0.000	0.000
RDT&E Articles Quantity * (as applicable)				

FY2004 Accomplishments:

- Surveyed commercially available mobile devices suitable for NCIS agents and security guards (Personal Data Assistants – PDAs) magnetic strip readers, barcode readers (1-D and 2-D), wireless communications devices.
- Tested and evaluated selected commercial mobile devices to determine suitability.
- Surveyed wireless data service coverage at two U.S. Navy installations in the Pacific Northwest Region.
- Conducted requirements analysis for mobile NCIS agents.
- Conducted Requirements analysis for base security guards.
- Conducted Requirements analysis for access to NCIS, FBI and Washington State databases (in progress, Task continues in FY 2004).
- Developed, integrated and tested a prototype Gate Guard version of SEMD.
- Integrated SEMD with the NCIS, WACIC and CLEOC law enforcement databases.

FY 2005 Plans:

- Develop, integrate and test a prototype Gate Guard version of SEMD.
- Develop, integrate and test a prototype mobile NCIS agent version of SEMD.
- Integrate SEMD with NCIS, WACIC and CLEOC law enforcement databases.
- Integrate SEMD with LinX, SFSIMS and COPS military law enforcement databases.
- Integrate with JPEN.
- Include tools to read and decode bar codes and magnetic stripes of remaining military identification card types, plus state identification cards (including driver's licenses).
- Include tools to read and decode non-US identification cards (Canadian, Mexican).
- Include interfaces and tools to support in the field searches of DMDC and other watch lists.
- Develop off-line software tools for fusion of SEMD reports to provide alerts to NCIS agents and Gate Guards.
- Secure a wireless waiver from NAVNETWARCOM.
- Integrate SEMD with the Base Computer Aided Dispatch system at the Pacific Northwest Region Headquarters.
- Initiate Pilot test programs at Navy and Marine Corps bases in the Pacific Northwest and Southwest Regions, and coordinate with CNI and NORTHCOM.
- Develop a waterside security variant of SEMD.
- Develop an Arabic language transliteration capability.

C. Other Program Funding Summary

Not Applicable

D. Acquisition Strategy:

Transition to Program of record in FY 2006.

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Exhibit R-3 Cost Analysis (page 1)								Date:		February-2005		
RDT&E DEFENSE-WIDE BUDGET ACTIVITY 4			Program Element PE 0603228D8Z				SEMD					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development				0.157		0.400						
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development				0.157		0.252						
Remarks:												
Development Support												
Software Development				0.450		0.100						
Training Development												
Integrated Logistics Support												
Configuration Management				0.200		0.148						
Technical Data				0.200		0.150						
GFE												
Subtotal Support				1.007		0.850						
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)							Date:	February-2005					
RDT&E DEFENSE-WIDE BUDGET ACTIVITY 0			Program Element PE 0604709D8Z				SEMD						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
DT				0.050		0.750							
IOT&E													
Subtotal T&E				0.050		0.750							
Remarks:													
Contractor Engineering Support													
Government Engineering Support				0.050		0.400		0.080					
Program Management Support				0.050		0.400		0.060					
Program Management Personnel													
Travel													
Labor (Research Personnel)													
Miscellaneous													
Subtotal Management			0.000	0.100		0.500		0.140					
Remarks:													
Total Cost			0.000	1.157		2.700		0.140					
Remarks:													

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Exhibit R-4, Schedule Profile																									Date: February 2005											
Appropriation/Budget Activity RDT&E, DEFENSE WIDE/B.A. 4												Program Element Number and Name PE 0603228D8Z Physical Security Equipment												Project Number and Name SEMD												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Prototypes, Gate Guard and NCIS Agent												▲																								
Integrate with NCIS, WACIC and CLEOC databases												▲																								
Integrate with Base CAD System, Pacific NW Region HQ												▲																								
Develop SEMD Fusion Tools																▲																				
Integrate with NCIS LinX Program																▲																				
Develop Waterside SEMD																▲																				
Develop Arabic Transliteration																▲																				
Field Test																▲																				

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Exhibit R-4a, Schedule Detail				Date: February 2005					
Appropriation/Budget Activity RDT&E, Defense Wide/ Budget Activity 4		Program Element Number and Name PE 0603228D8Z			Project Number and Name SEMD				
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Prototypes, Gate Guard and NCIS Agent			4Q						
Integrate with NCIS, WACIC and CLEOC databases			4Q						
Integrate with Base CAD System, Pacific NW Region HQ			4Q						
Develop SEMD Fusion Tools				3Q					
Integrate with NCIS LinX Program				3Q					
Develop Waterside SEMD				3Q					
Develop Arabic Transliteration				3Q					
Field Test				4Q					

R-4a Schedule Profile

Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY RDT&E, DEFENSE WIDE BA 5				R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM			PE 0603228D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
FIRRE	0.000	7.800	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

The Family of Integrated Rapid Response Equipment (FIRRE) provides our forward deployed Soldiers, Airmen, Marines and Sailors with an enhanced Near and Long Term unmanned force protection system of systems capability that reduces manpower requirements, enhance force protection and keeps our forces out of harms way. Near Term FIRRE consists of the best available force protection unmanned systems technology: semi-autonomous Unmanned Ground Vehicles (UGV); Unmanned Sensors—the Battlefield Anti-Intrusion System (BAIS), Ground Surveillance Radars (GSR) and the Multiple Resource Host Architecture (MRHA) for command and control purposes. FIRRE allows commanders to return Soldiers to their normal wartime missions. The Near Term will feed the Long Term which includes Unmanned Ground Vehicles (UGV), Unmanned Aerial Vehicles (UAV), Unattended Ground Sensors (UGS) and other value added technology for a wide variety of force protection missions. Lessons learned from Near Term FIRRE will assist the Combat Developer to refine capabilities documentation required for the Joint Capabilities Integration Development System (JCIDS) process.

Schedule: If step one efforts of prototypes is successful, the continuation of the scheduled events is reflected in the outyears.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	0.000	7.800	0.000	0.000
RDT&E Articles Quantity * (as applicable)				
RDT&E Articles Quantity * (as applicable)				

FY2005-2006 Plans:

- Design, develop and integrate the Unmanned Ground Vehicle (UGV) technology for analysis of materiel approaches for application of robotic systems.
- Initiate Command, Control, and Communications (C3) architecture development, integration, test and evaluation; patrol unit (“robotics”) technology transfer; field support; Integrated Product Team (IPT) support; and Technical Manuals.
- Provide training and supportability; Integrated Logistic Support (ILS) documentation; frequency management allocation; system development demonstration support; and modeling and simulation.

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- Conduct environment, limited operational and safety testing, and certification and release safety release.

C. Other Program Funding Summary:

Not Applicable

D. Acquisition Strategy:

Being staffed through the IPT process

E. Major Performers:

Not Applicable

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Exhibit R-3 Cost Analysis (page 1)							Date:	February 2005				
DEFENSE-WIDE BUDGET ACTIVITY 4			Program Element PE 0604709D8Z				FIRRE					
Cost Categories (Tailor to WBS, or System Requirements)	Contract Method & Type	Performin Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	
Primary Hardware Develop						4.300						
Ancilliary Hardware Devel												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
total Product Development						4.300						
Remarks:												
Development Support						0.750						
Software Development						1.000						
Training Development						0.200						
Integrated Logistics Suppo						0.400						
Configuration Managemen												
Technical Data												
GFE												
Subtotal Support				0.000		2.350		0.000				
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)							Date:	February-2005				
RDT&E DEFENSE-WIDE BUDGET ACTIVITY			Program Element PE 0604709D8Z				FIRRE					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2001 Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2007 Award Date	Cost To Complete	Total Cost	
	0					0.450						
DT												
IOT&E												
Subtotal T&E						0.450						
Remarks:												
Contractor Engineering Support						0.500						
Government Engineering Support						1.000						
Program Management Support						1.000						
Program Management Personnel						1.000						
Travel												
Labor (Research Personnel)												
Miscellaneous						1.500						
Subtotal Management												
Remarks:												
Total Cost						7.800						

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Exhibit R-4a, Schedule Detail				Date: February 2005				
Appropriation/Budget Activity RDT&E, Defense Wide/ Budget Activity 4		Program Element Number and Name PE 0603228D8Z		Project Number and Name FIRRE				
Schedule Profile	FY 2002	FY 2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
Milestone								
Award contracts				2Q			1Q MS B	
System Delivery								
EUA Training				2Q-4Q				
EUA								
Initiate					1Q			
Complete								
IOT&E						4Q		
Milestone C IPR								

R-4a Schedule Profile

Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY RESEARCH, DEVELOPMENT, TEST, & EVALUATION, DEFENSE-WIDE, BUDGET ACTIVITY 4				R-1 ITEM NOMENCLATURE PHYSICAL SECURITY EQUIPMENT			PE 0603228D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
PPSUMS	0.000	6.034	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

The Air Force Research Laboratory's Airbase Technologies Division, Force Protection Branch, Robotics Research Group located at Tyndall AFB, FL, is the Air Force's lead laboratory for developing technical solutions to meet mission requirements in the Agile Combat Support & Unmanned Ground Systems areas. AFRL/MLQF Robotics has been engaged in an ongoing research effort to develop technologies for automated force protection and perimeter security missions. Radiance Technologies has developed the Persistent Perimeter Security with Unmanned Mobile Systems (P2SUMS) program, in support of this requirement. Further development is needed to make the system ready for field experiments in support of force protection and perimeter security missions. The work included under this effort will include software and algorithm development and for an integrated target acquisition and tracking system for the Remote Detection, Challenge and Response (REDCAR) engagement platform.

The AFRL/MLQF Robotics Group is developing technologies to support the requirements for EOD disposal and clearance technologies. AFRL/MLQF Robotics has had an ongoing research effort to develop and integrate physical security technologies with robotic platform to automate and enhance security force functions. Further development is required in the areas of sensor system integration, platform command and control functions, target acquisition, and tracking for both lethal and non-lethal weapons systems, and sustained, quiet power system for platform physical security sensor systems.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/ Effort/Subtotal Cost	0.000	6.034	0.000	0.000
RDT&E Articles Quantity * (as applicable)				

FY2005 Plans:

- Develop a Joint Architecture for Unmanned Systems (JAUS) and Electronic Systems Center (ESC/FD) Interface Control Document using XML, compatible common operational environment control system.
- Develop a UGV/UAV integrated counter targeting (target acquisition and tracking) system.
- Develop and integrate IED detection system for route and perimeter clearing applications.
- Develop weapons system for selected perimeter patrol UAV.
- Conduct Capstone demonstration for integrated Perimeter Security System Technologies .

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- Integrate intruder detection system with self-networking mini sensor platforms, identify Friend or Foe and intruder type classification capability.
- Develop hybrid electric UGV propulsion for robotic platform and payloads supporting silent watch and long endurance missions.

C. Other Program Funding Summary

Not Applicable

D. Acquisition Strategy:

Not Applicable

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Exhibit R-3 Cost Analysis (page 1)							Date:	February 2005					
DEFENSE-WIDE BUDGET ACTIVITY 4			Program Element PE 0603228D8Z				PPSUMS						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	2003 Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Primary Hardware Development						1.500							
Ancilliary Hardware Development													
Systems Engineering						1.550							
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development						3.050							
Remarks:													
Development Support						0.450							
Software Development						0.534							
Training Development													
Integrated Logistics Support													
Configuration Management													
Technical Data													
GFE													
Subtotal Support						0.984							
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)							Date:	February 2005					
DEFENSE-WIDE BUDGET ACTIVITY 4			Program Element PE 0603228D8Z				PPSUMS						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	2003 Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
DT													
IOT&E													
Subtotal T&E													
Remarks:													
Contractor Engineering Support						1.000							
Government Engineering Support													
Program Management Support						1.000							
Program Management Personnel													
Travel													
Labor (Research Personnel)													
Subtotal Management													
Remarks:													
Total Cost						6.034							
Remarks:													

Exhibit R-4, Schedule Profile																								Date: February 2005												
Appropriation/Budget Activity DEFENSE WIDE RDT&E/B.A. #4												Program Element Number and Name PE 20062003228D8Z Physical Security Equipment												Project Number and Name PPSUMS												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
J AUS/IBDS S COE Control System															▲																					
J AUS/IBDS S Target Acq System															▲																					
J AUS IED Detection System															▲																					
J AUS Weapon System for UAVs															▲																					
Integrated Demo of P2SUMS Prog																			▲																	

R-4 Schedule Profile

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Exhibit R-4a, Schedule Detail				Date: February 2005					
Appropriation/Budget Activity RDT&E, Defense Wide/ Budget Activity 4	Program Element Number and Name PE 0603228D8Z			Project Number and Name PPSUMS					
Schedule Profile	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	
J AUS/IBDSS COE Control System			3Q						
J AUS/IBDSS Target Acq System			4Q						
J AUS IED Detection System			4Q						
J AUS Weapon System for UAVs				1Q					
Integrated Demo of P2SUMS Prog				3Q					

R-4a Schedule Profile