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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2011 Office of Secretary Of Defense **DATE:** February 2010

<b>APPROPRIATION/BUDGET ACTIVITY</b>			<b>R-1 ITEM NOMENCLATURE</b>								
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>			PE 0603161D8Z: <i>Nuclear &amp; Conventional Phy Sec Equip</i>								
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	46.786	45.805	32.132	0.000	32.132	38.390	37.777	36.584	39.106	Continuing	Continuing
P162: <i>Nuclear &amp; Con Phys Sec Equip</i>	46.786	45.805	32.132	0.000	32.132	38.390	37.777	36.584	39.106	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The purpose of this program is the advanced engineering development of conventional and nuclear physical security equipment (PSE) systems for all DoD components. This program supports the protection of tactical, fixed, and nuclear weapons systems, DoD personnel and DoD facilities. The funds are used to provide PSE RDT&E for continuing and evolving individual Service and joint PSE requirements that provide capability in the areas of force protection and tactical security equipment; robotic security systems integration; waterside security systems; explosive detection equipment; locks, safes and vaults; commercial-off-the-shelf (COTS) testing; and nuclear weapons security. Many RDT&E efforts arising from this PE will transition to PE 0604161D8Z for system demonstration and validation. The PSE program is organized so that representatives from the Army, Navy, Air Force, and Defense Threat Reduction Agency (DTRA) monitor, direct and prioritize potential and existing PSE programs through the auspices of the Physical Security Equipment Action Group (PSEAG) and the Security Policy Verification Committee (SPVC). With few exceptions, each Service sponsors RDT&E efforts for technologies and programs that have multi-Service application. This program element supports: 1) the Army's PSE RDT&E efforts in the areas of Interior and Exterior Detection, Security Lighting, Security Barriers and Security Display Units; 2) the Air Force's PSE RDT&E efforts in the areas of Exterior Detection/Surveillance, Entry Control, Delay/Denial, Tactical Systems and Airborne Intrusion; 3) the Navy's PSE RDT&E efforts in the areas of Waterside Security, Explosive Detection, and improved technology for Locks, Safes and Vaults; and 4) DTRA's PSE RDT&E efforts that enhance the security of Navy and Air Force nuclear assets. This PE also funds Force Protection Commercial-Off-The-Shelf (FP COTS) evaluation and testing, which has received additional focus since the 1996 Khobar Towers terrorist bombing incident. The FP COTS testing applies to all available technologies that are considered effective for DoD physical security use.

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603161D8Z: <i>Nuclear &amp; Conventional Phy Sec Equip</i>
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**B. Program Change Summary (\$ in Millions)**

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	38.300	36.019	0.000	0.000	0.000
Current President's Budget	46.786	45.805	32.132	0.000	32.132
Total Adjustments	8.486	9.786	32.132	0.000	32.132
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		10.160			
• Congressional Directed Transfers		0.000			
• Reprogrammings	-2.206	0.000			
• SBIR/STTR Transfer	-0.810	0.000			
• Congressional Add	11.400	0.000	0.000	0.000	0.000
• Other Program Adjustments	0.102	-0.374	32.132	0.000	32.132

**Change Summary Explanation**

Reprogramming was used to accommodate the maturation of PSE developmental items from advanced engineering development (BA 4) to system development and demonstration (BA 5). PE 0604161D8Z identifies the offset.

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603161D8Z: <i>Nuclear &amp; Conventional Phy Sec Equip</i>	<b>PROJECT</b> P162: <i>Nuclear &amp; Con Phys Sec Equip</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
P162: <i>Nuclear &amp; Con Phys Sec Equip</i>	46.786	45.805	32.132	0.000	32.132	38.390	37.777	36.584	39.106	Continuing	Continuing
Quantity of RDT&E Articles											

**A. Mission Description and Budget Item Justification**

The purpose of this program is the advanced engineering development of conventional and nuclear physical security equipment (PSE) systems for all DoD components. This program supports the protection of tactical, fixed, and nuclear weapons systems, DoD personnel and DoD facilities. The funds are used to provide PSE RDT&E for continuing and evolving individual Service and joint PSE requirements that provide capability in the areas of force protection and tactical security equipment; robotic security systems integration; waterside security systems; explosive detection equipment; locks, safes and vaults; commercial-off-the-shelf (COTS) testing; and nuclear weapons security. Many RDT&E efforts arising from this PE will transition to PE 604161D8Z for system demonstration and validation. The PSE program is organized so that representatives from the Army, Navy, Air Force, and Defense Threat Reduction Agency (DTRA) monitor, direct and prioritize potential and existing PSE programs through the auspices of the Physical Security Equipment Action Group (PSEAG) and the Security Policy Verification Committee (SPVC). With few exceptions, each Service sponsors RDT&E efforts for technologies and programs that have multi-Service application. This program element supports: 1) the Army's PSE RDT&E efforts in the areas of Interior and Exterior Detection, Security Lighting, Security Barriers and Security Display Units; 2) the Air Force's PSE RDT&E efforts in the areas of Exterior Detection/Surveillance, Entry Control, Delay/Denial, Tactical Systems and Airborne Intrusion; 3) the Navy's PSE RDT&E efforts in the areas of Waterside Security, Explosive Detection, and improved technology for Locks, Safes and Vaults; and 4) DTRA's PSE RDT&E efforts that enhance the security of Navy and Air Force nuclear assets. This PE also funds Force Protection Commercial-Off-The-Shelf (FP COTS) evaluation and testing, which has received additional focus since the 1996 Khobar Towers terrorist bombing incident. The FP COTS testing applies to all available technologies that are considered effective for DoD physical security use.

**B. Accomplishments/Planned Program (\$ in Millions)**

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Force Protection / Tactical Security Equipment (FP/TSE) <i>FY 2009 Accomplishments:</i> - JFPASS completed initial site surveys at three locations, and completed OD-1 Setup at Eglin Site C3	15.545	18.462	14.422	0.000	14.422

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603161D8Z: <i>Nuclear &amp; Conventional Phy Sec Equip</i>		<b>PROJECT</b> P162: <i>Nuclear &amp; Con Phys Sec Equip</i>				
<b>B. Accomplishments/Planned Program (\$ in Millions)</b>								
				<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
<ul style="list-style-type: none"> <li>- Continue to develop drafts of Holistic Joint Force Protection Architecture views</li> <li>- Develop plan for FY 10 software to test equipment compliance with SEIWG-ICD-0101A</li> <li>- DIAC demonstration via DIACAP compliance</li> <li>- Publicize SEIWG work and documents within physical security industry</li> <li>- Maintain TV-1 and prepare 2010 release</li> <li>- Install, Configure, and perform testing of AIE Equipment at Test Site C3 for Increment II</li> <li>- Complete and Publish the AIE Test Report</li> <li>- Conduct LKMD early user appraisals (EUA).</li> <li>- Begin working on Materiel Solution Analysis phase for LKMD Increment 2</li> <li>- Continue to manage, develop, evaluate, and test Detection/Assessment/Delay/Denial products.</li> <li>- Continue to manage sensor and assessment product developments and tests.</li> <li>- Continue to research technological advances within industry; at DARPA; DoD, DoE, and University Labs; etc., that have PSE utility.</li> <li>- Continue to prepare operational systems improvement plans; develop technology roadmaps, and update system architecture.</li> <li>- Execute a congressional add for the Under Vehicle Inspection System</li> <li>- Continue work on a congressional add for Pacific Data and Technology Center</li> </ul> <p><i>FY 2011 Base Plans:</i></p> <ul style="list-style-type: none"> <li>- JFPASS will transition to the BA5 PE for SDD</li> <li>- IDC2COP will build upon existing IDC2COP capabilities enhancing its ability to store, distribute, display, and manage response to dynamic threat intercept information from future and legacy external tactical sources, systems, and their enunciators across wireless/transmission networks through the application of ICD standards.</li> <li>- DIAC conduct a test evaluation at Service Operational Sites</li> <li>- DIAC will transition to BA5 for SDD</li> <li>- TVSS Milestone B Documentation Preparation and Approval, Increment 1 Contract Documentation, and Award and Preliminary Design Review (PDR).</li> </ul>								

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<b>B. Accomplishments/Planned Program (\$ in Millions)</b>								
				<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
<ul style="list-style-type: none"> <li>- Continue to prepare operational systems improvement plans; develop technology roadmaps, and update system architecture.</li> <li>- Continue to test, develop, and integrate equipment to improve security robotic integration capability.</li> </ul>								
<p>Waterside Security System (WSS)</p> <p><i>FY 2009 Accomplishments:</i></p> <ul style="list-style-type: none"> <li>- Continued to develop integrated anti-swimmer defense and detection capability.</li> <li>- Continued to improve algorithms that provide target analysis of waterborne threat.</li> <li>- Continued the development of a passive sonar with enhanced diver detection classification and localization (DCL) and engagement capability.</li> <li>- Shore Line Monitoring System (SLiMS) - Further developed a high frequency perimeter security radar system for application as a sophisticated detection, classification, and alert virtual fence and demonstrate concept (Red Stone Arsenal).</li> <li>- Target Echo Analysis - Acquire and analyze anechoic pool data for radiated noise from divers and create an algorithm to locate that noise from within the active sonar data 'between the pings.</li> <li>- Sonar Augmentation: develop passive based diver classification algorithm</li> <li>- Continuous Wave Diver Response</li> <li>- All Weather Surveillance System</li> <li>- Continued to manage, develop, evaluate, and test Detection/Assessment/Delay/Denial products.</li> <li>- Continued to manage sensor and assessment product developments and tests.</li> <li>- Continued to research technological advances within industry; at DARPA; DoD, DoE, and University Labs; etc., that have PSE utility.</li> <li>- Continued to prepare operational systems improvement plans; develop technology roadmaps, and update system architecture.</li> <li>- Continued to test, develop, and integrate equipment to improve security and access to facilities.</li> </ul>				2.939	1.550	1.435	0.000	1.435

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**B. Accomplishments/Planned Program (\$ in Millions)**

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals	46.786	45.805	32.132	0.000	32.132

**C. Other Program Funding Summary (\$ in Millions)**

N/A

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

The program performance metrics are established/approved through the DoD Physical Security Equipment Action Group (PSEAG) and the Security Policy Verification Committee (SPVC). The cost, schedule and technical progress is reviewed at quarterly PSEAG and SPVC meetings. Performance variances are addressed and corrective action(s) is(are) implemented as necessary.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Office of Secretary Of Defense** **DATE:** February 2010

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603161D8Z: <i>Nuclear &amp; Conventional Phy Sec Equip</i>	<b>PROJECT</b> P162: <i>Nuclear &amp; Con Phys Sec Equip</i>
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**Product Development (\$ in Millions)**

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
US Army Force Protection/Tactical Security Equipment (FP/TSE)	MIPR	PM-FPS (USA) Ft. Belvoir, Virginia	4.625	6.800	Mar 2010	5.797	Mar 2011	0.000		5.797	Continuing	Continuing	Continuing
US Air Force Force Protection/Tactical Security Equipment (FP/TSE)	MIPR	642nd ELSS (USAF) Hanscom AFB, Massachusetts	4.625	7.000	Feb 2010	5.510	Feb 2011	0.000		5.510	Continuing	Continuing	Continuing
SPAWAR Force Protection/Tactical Security (FP/TSE)	MIPR	SPAWAR System Center San Diego, CA	0.750	3.110	Feb 2010	0.500	Feb 2011	0.000		0.500	Continuing	Continuing	Continuing
US Army Robotic Security Systems Integration (RSSI)	MIPR	PM-FPS (USA) Ft. Belvoir, Virginia	1.000	0.750	Dec 2009	0.700	Dec 2010	0.000		0.700	Continuing	Continuing	Continuing
US Air Force Robotic Security Systems Integration (RSSI)	MIPR	AFRL Tyndall AFB, FL	1.030	4.000	Feb 2010	1.000	Feb 2011	0.000		1.000	Continuing	Continuing	Continuing
Waterside Security	MIPR	NUWC Newport, Rhode Island	3.290	1.050	Jan 2010	1.025	Dec 2010	0.000		1.025	Continuing	Continuing	Continuing
Explosive Detection Equipment (EDE)	MIPR	NAVEODTECHDIV Indian Head, Maryland	2.500	1.500	Nov 2009	1.400	Nov 2010	0.000		1.400	Continuing	Continuing	Continuing
Locks, safes, and Vaults	MIPR	NFESC Port Hueneme, California	1.750	1.890	Jan 2010	1.745	Jan 2011	0.000		1.745	Continuing	Continuing	Continuing
	MIPR		9.700	12.014	Dec 2009	9.500	Dec 2010	0.000		9.500	Continuing	Continuing	Continuing

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**Product Development (\$ in Millions)**

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DTRA Nuclear Weapon Physical Security Programs		Defense Threat Reduction Agency (DTRA) Ft. Belvoir, Virginia											
<b>Subtotal</b>			29.270	38.114		27.177		0.000		27.177			

**Remarks**

**Test and Evaluation (\$ in Millions)**

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
COTS Testing	MIPR	642d ELSS Hanscom AFB, MA	1.250	1.200	Mar 2010	0.500	Mar 2011	0.000		0.500	Continuing	Continuing	Continuing
Explosive Detection Equipment (EDE)	MIPR	NAVEODTECHDIV Indian Head, MD	1.000	1.250	Mar 2010	1.000	Feb 2011	0.000		1.000	Continuing	Continuing	Continuing
Robotic COTS Testing	MIPR	PM-FPS Ft. Belvoir, VA	1.000	1.000	Feb 2010	0.500	Feb 2011	0.000		0.500	Continuing	Continuing	Continuing
<b>Subtotal</b>			3.250	3.450		2.000		0.000		2.000			

**Remarks**

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**Management Services (\$ in Millions)**

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
US Army Force Protection/Tactical Security Equipment (FP/TSE)	MIPR	PM-FPS Ft. Belvoir, VA	1.000	0.800	Jan 2010	0.700	Jan 2011	0.000		0.700	Continuing	Continuing	Continuing
Force Protection/Tactical Security Equipment	MIPR	642d ELSS Hanscom, AFB	1.150	0.800	Jan 2010	0.600	Jan 2011	0.000		0.600	Continuing	Continuing	Continuing
SPAWAR Force Protection/Tactical Security Equipment (FP/TSE)	MIPR	SPAWAR System Center San Diego, CA	0.250	0.350	Feb 2010	0.200	Feb 2011	0.000		0.200	Continuing	Continuing	Continuing
Robotic Security Systems Integration (RSSI)	MIPR	PM-FPS Ft. Belvoir, VA	0.322	0.836	Dec 2009	0.300	Dec 2010	0.000		0.300	Continuing	Continuing	Continuing
Waterside Security	MIPR	NAVSEA Port Hueneme, CA	0.600	0.500	Jan 2010	0.300	Jan 2011	0.000		0.300	Continuing	Continuing	Continuing
Locks, Seals, and Vaults	MIPR	NFESC Port Hueneme, CA	0.455	0.355	Mar 2010	0.355	Mar 2011	0.000		0.355	Continuing	Continuing	Continuing
Nuclear Weapons Physical Security	MIPR	SPAWAR Charleston, SC	0.400	0.600	Jan 2010	0.500	Jan 2011	0.000		0.500	Continuing	Continuing	Continuing
<b>Subtotal</b>			4.177	4.241		2.955		0.000		2.955			

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**Exhibit R-4, RDT&E Schedule Profile: PB 2011 Office of Secretary Of Defense** **DATE:** February 2010

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ID	Task Name	09				10				11			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Execute FPED VII			▲									
2	Demonstrate NROWS Capability to detect and track multiple targets												
3	Demonstrate NROWS detecting and tracking multiple targets under various scenerios												
4	Complete LKMD Product Qualification Testing												
5	Integrate remote weapon systems with robotic platforms. (IROWS)												
6	Leverage WSS efforts in support of SSBNs.												
7	Limited Production of Optimized door within the Magazine Access Denial Program.												
8	Weapons Tracking Seal system integration and test/evaluation												
9	Design Handheld THz Spectrometer.												
10	THz technologies system engineering and software development												
11	Fully integrate biometrics with the ILD.												
12	Model all nuclear weapons facilities using the AVERT Risk Management Tool.												
13	Continue testing and evaluation of COTS products												
14	Automated Installation Entry (AIE) Testbed												
15	Expanded Situational Awareness Capabilities												
16	JFPASS site setups, execution, and risk assessment												
17	IDC2COP Network Enhancement and Interoperability Assessment												
18	DIAC Proof of Concept and Evaluation of Systems Capabilities												
19	TVSS CDD, Tri-Fusion Demo, and Milestone B Documentation												

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2011 Office of Secretary Of Defense **DATE:** February 2010

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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
THZ technologies system engineering and software development	1	2010	4	2011
Weapons Tracking Seal system integration and test/evaluation	1	2010	4	2011
Design Handheld THz Spectrometer	1	2009	3	2009
Fully integrate biometrics with the ILD	1	2009	4	2009
Continue testing and evaluation of COTS products	1	2009	4	2011
Automated Installation Entry (AIE) Testbed	1	2010	4	2011
Expanded Situational Awareness Capabilities	1	2010	4	2011
IDC2COP Network Enhancement and Interoperability Assessment	2	2010	3	2011
DIAC Proof of Concept and Evaluation of Systems Capabilities	2	2010	4	2010
Limited Production of Optimized door within the Magazine Access Denial program	1	2009	3	2010
Leverage WSS efforts in support of SSBNs	1	2009	4	2011
Execute FPED VII	3	2009	3	2009
Complete LKMD Product Qualification Testing	1	2009	2	2010
LKMD Full Rate Production Decision (Milestone C)	1	2010	3	2010
JFPASS site setups, execution, and risk assessment	2	2010	3	2011
Model all nuclear weapon facilities using the AVERT Risk Management Tool	1	2009	2	2010
Integrate remote weapon systems with robotic platforms IROWS	1	2009	3	2011
Demonstrate NROWS Capability to detect and track multiple targets	1	2009	1	2009

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Event	Start		End	
	Quarter	Year	Quarter	Year
Demonstrate NROWS detecting and tracking multiple targets under various scenerios	1	2009	2	2009
TVSS CDD, Tri-Fusion Demo, and Milestone B Documentation	2	2010	2	2011

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