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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2020 Office of the Secretary Of Defense **Date:** February 2019

<b>Appropriation/Budget Activity</b>					<b>R-1 Program Element (Number/Name)</b>							
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>					PE 0603161D8Z I <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>							
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
Total Program Element	237.297	32.165	28.076	42.695	-	42.695	44.047	43.235	43.219	43.130	Continuing	Continuing
162: <i>Nuclear and Conventional Physical Security</i>	197.555	30.587	27.301	35.134	-	35.134	35.050	32.706	33.557	33.893	Continuing	Continuing
041: <i>CNT Prevention ADC&amp;P</i>	1.927	0.000	0.550	5.836	-	5.836	7.272	7.804	7.937	8.010	Continuing	Continuing
040: <i>National Technical Nuclear Forensics Systems</i>	37.815	1.578	0.225	1.725	-	1.725	1.725	2.725	1.725	1.227	Continuing	Continuing

**Note**

The FY2019 funding request was reduced by \$7.720 million to account for the availability of prior year execution balances, with payback in FY20 & FY21.

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

This Program Element (PE) addresses the need to defend and deter against weapons of mass destruction (WMD) threats and to safeguard personnel; prevent unauthorized access to equipment, installations, material, and documents; and to safeguard the foregoing against espionage, sabotage, damage, and theft. This program oversees advanced engineering development throughout DoD for an integrated and systemic RDT&E approach for countering nuclear threats and nuclear and conventional physical security technology and systems. The funding has been centralized in this Defense-wide PE since the early 1990s and represents a substantial portion of all DoD physical security RDT&E funding. Priorities for this PE RDT&E efforts are driven by inputs from Quadrennial Defense Review guidance, Combatant Command and Service requirements, analysis reports such as "Protecting the Force: Lessons from Fort Hood," January 2010, the Integrated Unit, Base, and Installation Protection Cost Benefits Analysis, Multi-national Work Plans established through the Nuclear Security Summit process, and DoD Directive 5210.41, Security Policy for Protecting Nuclear Weapons-directed requirements and associated security deviation reports.

Under this integrated approach, funds are used to provide advanced component development and prototypes for the Department in seven capability areas: (1) Detection and Assessment; (2) Access Controls; (3) Installation and Transport Security; (4) Storage and Safeguards; (5) Prevention; (6) Decision Support Systems; and (7) Analytical Support. This program will evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment. The projects under the Program Element either (a) lead to Programs of Record which can transition to Program Element 0604161D8Z for systems development and demonstration (SDD); (b) become technology insertions into existing programs; or (c) advance to being a certified Commercial/Government off-the-shelf product. The PE initiatives are coordinated by the Physical Security Enterprise and Analysis Group. This group is responsible for avoiding duplication of effort and when applicable ensure systems integration and promote interoperability and sustainability.

This PE can fund travel to support the requirements of this program.

This appropriation will finance work, including manpower, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct research (systematic study directed toward fuller scientific knowledge or understanding of the subject studied),

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development (systematic use of the knowledge and understanding gained from research, for the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes) and test and evaluation efforts.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>
Previous President's Budget	32.937	28.140	44.296	-	44.296
Current President's Budget	32.165	28.076	42.695	-	42.695
Total Adjustments	-0.772	-0.064	-1.601	-	-1.601
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.709	-			
• FFRDC	-0.063	-0.064	-	-	-
• INV-D-032 CBDP Bio Chem Threats Preparedness Reduction	-	-	-1.601	-	-1.601

**Change Summary Explanation**

FY 2019 Funds rephase from FY19 to FY20 and FY21 to aid in increasing program execution rates closer to the DoD benchmarks.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2020 Office of the Secretary Of Defense										<b>Date:</b> February 2019		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats				<b>Project (Number/Name)</b> 162 / Nuclear and Conventional Physical Security			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
162: Nuclear and Conventional Physical Security	197.555	30.587	27.301	35.134	-	35.134	35.050	32.706	33.557	33.893	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

This Program Element (PE) addresses the need to defend and deter against weapons of mass destruction (WMD) threats and to safeguard personnel; prevent unauthorized access to equipment, installations, material, and documents; and to safeguard the foregoing against espionage, sabotage, damage, and theft. This program oversees advanced engineering development throughout DoD for an integrated and systemic RDT&E approach for countering nuclear threats and nuclear and conventional physical security equipment (PSE) technology and systems. The funding has been centralized in this Defense-wide PE since the early 1990s and represents a substantial portion of all DoD PSE RDT&E funding. Priorities for this PE RDT&E efforts are driven by inputs from Quadrennial Defense Review guidance, Combatant Command and Service requirements, analysis reports such as "Protecting the Force: Lessons from Fort Hood," January 2010, the Integrated Unit, Base, and Installation Protection Cost Benefits Analysis, Multi-national Work Plans established through the Nuclear Security Summit process, and DoD Directive 5210.41, Security Policy for Protecting Nuclear Weapons-directed requirements and associated security deviation reports.

Under this integrated approach, funds are used to provide PSE advanced component development and prototypes for the Department in seven capability areas: (1) Detection and Assessment; (2) Access Controls; (3) Installation and Transport Security; (4) Storage and Safeguards; (5) Prevention; (6) Decision Support Systems; and (7) Analytical Support. The projects under the Program Element either (a) lead to Programs of Record – which can transition to Program Element 0604161D8Z for systems development and demonstration (SDD); (b) become technology insertions into existing programs; or (c) advance to being a certified Commercial/Government off-the-shelf product. The PE initiatives are coordinated by the Security Policy Verification Committee and the Physical Security Equipment Action Group. These groups work together to avoid duplication of effort and when applicable ensure systems integration and promote interoperability and sustainability.

This PE can fund travel to support the requirements of this program.

This appropriation will finance work, including manpower, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct research (systematic study directed toward fuller scientific knowledge or understanding of the subject studied), development (systematic use of the knowledge and understanding gained from research, for the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes) and test and evaluation efforts.

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

	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<b>Title:</b> Detection and Assessment	17.628	15.775	20.303

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<p><b>Description:</b> The ability to detect an adversary and assess their intentions is a basic physical security tenant. This capability area will design equipment to identify and warn of unauthorized access to a specified area or installation as well as equipment related to the notification and identification of explosive threats or hazards.</p> <p><b>FY 2019 Plans:</b></p> <ul style="list-style-type: none"> <li>• Continue to develop a Joint detection and assessment capability</li> <li>• Continue to develop a multi-sensor detection and discrimination capability to reduce nuisance and false alarms</li> <li>• Continue to develop a radar processing dynamic structure filter to reduce nuisance and false alarms</li> <li>• Develop a Portable Intrusion Detection System</li> </ul> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>• Continue Trace Explosive Detection System Improvements</li> <li>• Continue evaluation of Colorimetric kits on bulk explosives and materials to evaluate the potential trace detection capabilities</li> <li>• Continue Linear Sensor System Development for Maritime Threats</li> <li>• Continue efforts on Joint Active Shooter Protection and Response</li> <li>• Conduct an independent cyber assessment of the Sonardyne Sentinel Sonar sub-system for the Mk 6 Mod 3 Marine Mammal System to determine system vulnerabilities in order to fortify the physical security of USPACOM's distributed basing strategy.</li> </ul> <p><b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Projects and project costs vary from year to year</p>			
<p><b>Title:</b> Access Controls</p> <p><b>Description:</b> Controlling access to safeguard personnel and their families and to prevent unauthorized access to critical infrastructure and materials is paramount. This capability area will focus on programs and processes related to the validity and verification of individuals entering or already within a facility.</p> <p><b>FY 2019 Plans:</b></p> <ul style="list-style-type: none"> <li>• Complete development of an access control capability to compare DoD registered cardholders against the Terrorist Screening Database</li> </ul> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>• Continue system improvement on the Identity Matching Engine for Security &amp; Analysis to enhance the matching engine to compare cardholders against the Terrorist Screening Database.</li> </ul> <p><b>FY 2019 to FY 2020 Increase/Decrease Statement:</b></p>	5.488	4.912	6.321

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
Projects and project costs vary from year to year				
<p><b>Title:</b> Installation and Transport Security</p> <p><b>Description:</b> Robust installation and transport security are vital to preventing a weapon of mass destruction attack or the unauthorized access to key assets such as nuclear weapons and special nuclear material. This capability area will focus on programs and equipment intended to improve the physical security profile of fixed sites and facilities, as well as critical items while in-transit.</p> <p><b>FY 2019 Plans:</b></p> <ul style="list-style-type: none"> <li>• Develop an advanced thermal imaging sight for the M2HB/M2A1 crew-served weapon systems. This system will enable improved target acquisition capabilities and will include multiple target indicators, an integrated ballistics processor, and video recording and export functionality.</li> <li>• Integrate Man-portable Tactical Autonomous System Unmanned Surface Vehicle controls into the Near-shore Unified Tactical Response capability</li> </ul> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>• Continue to develop the Gunnar Waterside Security system, using operational augmented reality Heads Up Display will allow for effective visual communication between the waterside security officer and the security personnel manning defensive gun positions.</li> <li>• Continue design improvements and demonstrate a field-able stabilized crew-served heavy machine gun for naval applications.</li> </ul> <p><b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Projects and project costs vary from year to year</p>		0.392	0.351	0.451
<p><b>Title:</b> Storage and Safeguards</p> <p><b>Description:</b> Properly securing critical assets to prevent access by unauthorized persons and implementing control measures that ensure access is limited to authorized persons is the foundation of physical security. This capability area will focus on equipment (e.g., locks, doors, etc.) designed to delay or stop unauthorized entry/access to a specified/localized area.</p> <p><b>FY 2019 Plans:</b> No efforts currently planned.</p> <p><b>FY 2020 Plans:</b> No efforts currently planned.</p>		0.000	0.000	0.000
<b>Title:</b> Prevention		2.532	2.266	2.916

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<p><b>Description:</b> The security procedures taken to discourage an adversary from accessing weapons of mass destruction or gaining unauthorized access to critical assets are at the heart of prevention. This capability area will focus on broad spectrum, generic efforts which have the ability to influence multiple areas.</p> <p><b>FY 2019 Plans:</b></p> <ul style="list-style-type: none"> <li>• Conduct a cyber security assessment of electronic security systems and develop a repeatable process to verify/validate other electronic security systems in the future</li> </ul> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>• Develop a mobile platform for network data capture and analysis that gives the ability to perform network security monitoring on various customer networks.</li> </ul> <p><b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Projects and project costs vary from year to year</p>			
<p><b>Title:</b> Decision Support Systems</p> <p><b>Description:</b> Decision support systems serve the management, operations, and planning levels of the DoD physical security enterprise to help to make decisions, which may be rapidly changing and not easily specified in advance. This capability area will focus on command and control equipment and projects related to the creation and enhancement of common operating pictures, and the establishment of common architectures / interface standards.</p> <p><b>FY 2019 Plans:</b></p> <ul style="list-style-type: none"> <li>• Provide a persistent identification capability using a secure communication system for responding forces that will represent a “leap ahead” from currently deployed systems</li> <li>• Develop a full Cross Domain Solution that allows unclassified sensors to inter-operate with classified force protection command and control systems</li> <li>• Develop a counter unmanned underwater, surface and ground vehicle Investment Guides</li> </ul> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>• Continue development of a full Cross Domain Solution that allows unclassified sensors to inter-operate with classified force protection command and control systems</li> </ul> <p><b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Projects and project costs vary from year to year</p>	3.084	2.760	3.551
<p><b>Title:</b> Analytical Support</p>	1.463	1.237	1.592

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<p><b>Description:</b> This capability area will focus on studies related to physical security topics and operational and management efforts related to day-to-day activities of the DoD Physical Security Equipment/Countering Nuclear Threats RDT&amp;E Program.</p> <p><b>FY 2019 Plans:</b></p> <ul style="list-style-type: none"> <li>Evaluate, select and integrate three Video Analytics capabilities that reduces operator workloads and allows inexpensive camera's to become detection sensors</li> </ul> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>Establish a nuclear deterrence model, with analysis results will support the Nuclear Weapons Council strategic planning to include modernization strategies and stockpile composition assessments and investment tradeoff.</li> </ul> <p><b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Projects and project costs vary from year to year</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	30.587	27.301	35.134

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

N/A

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

The program performance metrics are established/approved through the DoD Physical Security Enterprise and Analysis Group (PSEAG). The cost, schedule and technical progress is reviewed at quarterly PSEAG 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 2020 Office of the Secretary Of Defense** **Date:** February 2019

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<b>Product Development (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years - Closed Out Efforts	Various	Various : Various	128.244	-		-		-		-		-	Continuing	Continuing	-
Defense Security Enterprise Architecture	Various	Multiple performers : Multiple locations	5.444	-		-		-		-		-	-	-	-
Keystone EUCOM Project	Various	Multiple Performers : Multiple Locations	5.876	-		-		-		-		-	-	-	-
Joint Risk Decision Support Tool	MIPR	AF Civil Engineering Center : Tyndall AFB, FL	5.395	-		-		-		-		-	-	-	-
Foliage Penetrating Technology Evaluation	MIPR	Naval Surface Warfare Crane : Crane, Indiana	0.504	-		-		-		-		-	-	-	-
Detection & Assessment Follow-on	Various	Multiple Vendors : Multiple Locations	5.554	-		-		-		-		-	-	-	-
Maritime Expeditionary & Transit Security	MIPR	ARO : Research Triangle Park, NC	3.470	-		-		-		-		-	-	-	-
US Navy Spike Weapon System, Common Launch Tube	MIPR	NAVAIRWARCENWPNDIV : China Lake, CA	3.539	-		-		-		-		-	-	-	-
Thermal Imaging Dual-use for Aerosol Monitoring Alarms and Security	MIPR	ECBC : Aberdeen Proving Ground	4.166	-		-		-		-		-	-	-	-
Multi-sensor Detection and Discrimination	MIPR	Naval Research Laboratory : Washington, DC	2.113	-		-		-		-		-	-	-	-
Tactical Security System	MIPR	Multiple Performers : Multiple Locations	2.350	-		1.995		1.150		-		1.150	-	-	-
Mobile Integrated Expeditionary Vehicle Inspection Station	MIPR	US Army ARDEC : Picatinny Arsenal, NJ	2.100	1.150		-		-		-		-	-	-	-
Linear Sensor System for Multi-Threat Detection	MIPR	Engineer Research and Development	1.250	1.200		1.320		-		-		-	-	-	-

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<b>Product Development (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Center : Vicksburgs, MS													
Portable Intrusion Detection System	MIPR	AFLCMC : Hanscom AFB, MA	1.100	1.862		1.500		1.500		-		1.500	-	-	-
JIGSAW Enhanced Capability Suite Technology Development	MIPR	SPAWAR Atl : Charleston, SC	0.800	-		-		-		-		-	-	-	-
GreyNet - Secure Communications with Persistent Identification/ Blue Force Tracking	MIPR	SPAWAR Atlantic : Charleston, SC	1.450	1.762		-		-		-		-	-	-	-
Wide Area Detection Systems	MIPR	AFLCMC : Hanscom AFB, MA	0.800	-		-		-		-		-	-	-	-
Radar Detection of UAVs	MIPR	SPAWAR Atlantic : Charleston, SC	0.700	-		-		-		-		-	-	-	-
HVU Self Escort M&S	MIPR	Navy - Strategic System Programs : Washington Navy Yard, DC	0.275	-		-		-		-		-	-	-	-
Force Protection Pre-shot Sniper Detection Capability	TBD	Multiple Performers : Multiple Locations	-	1.464		-		-		-		-	-	-	-
Harbor and Restricted Waterway Counter-UUV/ AUV System	MIPR	NUWC NWPT : Newport, RI	-	0.445		-		-		-		-	-	-	-
WISP 2.0	TBD	TBD : TBD	-	1.616		1.000		-		-		-	-	-	-
Defense Installation Access Control	TBD	TBD : TBD	0.345	1.853		2.000		5.200		-		5.200	Continuing	Continuing	-
Gatekeeper on the Move - Biometrics	TBD	TBD : TBD	-	0.900		-		-		-		-	-	-	-
Counter Personal Water Craft - Naval Experiment	MIPR	NSWC Dahlgren : Dahlgren, VA	0.561	-		-		-		-		-	-	-	-

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<b>Product Development (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Physical Security Enterprise Program	Various	Multiple Performers : Multiple Locations	9.081	0.569		0.542		3.024		-		3.024	Continuing	Continuing	-
Defense Security CBRN Information Sharing	Various	ARDEC : Picatinny Arsenal, NJ	0.845	0.078		-		-		-		-	-	-	-
Force Protection Cross Domain	MIPR	Multiple Performers : Multiple Locations	-	1.408		1.400		-		-		-	-	-	-
Force Protection Workload Reduction via Video Analytics	MIPR	Multiple Performers : Multiple Locations	-	1.047		1.496		1.700		-		1.700	Continuing	Continuing	-
Joint Active Shooter Protection and Response	MIPR	ARDEC : Picatinny Arsenal, NJ	-	0.723		1.583		-		-		-	-	-	-
Enhancing Biosecurity Surveillance using RFI Technology	MIPR	US Army Medical Research Institute of Infectious Diseases : Fort Detrick, MD	-	0.287		0.559		0.473		-		0.473	-	-	-
Enhanced Access Control for Husbanding Agencies using Biometrics	MIPR	Naval Surface Warfare Center, Dahlgren Division : Dahlgren, VA	-	0.952		0.375		0.849		-		0.849	-	-	-
M2HB/M2A1	MIPR	Naval Surface Warfare Center, Crane Division : Crane, IN	-	0.400		0.750		-		-		-	-	-	-
GunnAR for Waterside Security	MIPR	SPAWARSYSCEN Pacific : San Diego, CA	-	0.700		0.300		0.300		-		0.300	-	-	-
Tactical Radio Interface Console	MIPR	SPAWARSYSCEN Pacific : San Diego, CA	-	0.225		-		-		-		-	-	-	-
Guardian Angel	MIPR	SPAWARSYSCEN : Charleston, SC	-	0.009		-		-		-		-	-	-	-

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<b>Product Development (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Info Ops/Computer Network Defense and Exploitation Toolset	MIPR	DTRA : Ft. Belvoir, VA	-	-		-		1.700		-		1.700	Continuing	Continuing	-
Virtual Reality Synthetic Boat and Warning Shot Simulator	MIPR	Multiple Performers : Multiple Locations	-	0.416		0.423		-		-		-	-	-	-
Surface Enhanced Raman Spectroscopy for Post-Blast	MIPR	NSWC IHEODTD : Indian Head, MD	-	-		-		0.802		-		0.802	Continuing	Continuing	-
Entry Control Point Optimization	MIPR	Multi Performers : Multiple Locations	-	-		-		0.250		-		0.250	Continuing	Continuing	-
Automated Alarm Assessment	MIPR	Multiple Performers : Multiple Locations	-	-		1.000		1.000		-		1.000	Continuing	Continuing	-
Secure Tactical Communications Module	MIPR	Multiple Performers : Multiple Locations	-	-		0.826		0.659		-		0.659	Continuing	Continuing	-
Flexible Fire Control System	MIPR	Multiple Performers : Multiple Locations	-	-		0.934		1.800		-		1.800	Continuing	Continuing	-
Automated Unmanned Ground Vehicle for Patrol & Security	MIPR	Multiple Performers : Multiple Locations	-	-		-		0.600		-		0.600	Continuing	Continuing	-
Alert Attack Resistant Container	MIPR	Naval Facilities Engineering and Expeditionary Warfare Center : Port Hueneme, CA	-	0.119		1.000		1.500		-		1.500	Continuing	Continuing	-
Stabilized Crew-Served Heavy Machine Gun Mount	MIPR	NSWC : Crane, IN	-	-		-		0.614		-		0.614	Continuing	Continuing	-
<b>Subtotal</b>			185.962	19.185		19.003		23.121		-		23.121	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Office of the Secretary Of Defense** **Date:** February 2019

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	<b>Project (Number/Name)</b> 162 / Nuclear and Conventional Physical Security
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<b>Support (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prior Years Completed Efforts	Various	Various Performers : Various Locations	0.800	-		-		-		-		-	-	-	-
World Institute for Nuclear Security	MIPR	Defense Threat Reduction Agency : Ft Belvoir, VA	1.350	-		-		-		-		-	-	-	-
Nuclear Security Subject Matter Experts	MIPR	Applied Research Laboratories, The University of Texas : Austin, Texas	0.820	0.325		0.225		0.225		-		0.225	Continuing	Continuing	-
Autonomous Defense Accelerator	MIPR	Army Research Lab : Adelphi, MD	-	0.200		-		-		-		-	-	-	-
PSEAG Support	MIPR	Army Research Lab : Adelphi, MD	-	0.536		0.600		0.645		-		0.645	Continuing	Continuing	-
Contingency Response Tool	SS/FFP	Cubic Global Defense : San Diego, CA	-	0.886		-		-		-		-	-	-	-
PSEAG Website and PSEAG SharePoint	MIPR	Army Research Lab : Adelphi, MD	0.266	0.264		0.395		0.308		-		0.308	Continuing	Continuing	-
Nuclear Matters Analytical Cell for Nuclear Deterrence	IA	DOE/Sandia National Laboratory : Albuquerque, NM	-	1.500		1.500		2.500		-		2.500	Continuing	Continuing	-
Nuclear Matters SIRC/ NDERG Support	Option/ T&M	SAIC : McLean, VA	-	0.700		1.500		1.500		-		1.500	Continuing	Continuing	-
Nuclear Matters Support	C/FFP	E3 Federal Solutions : Washington, DC	-	0.053		0.086		0.100		-		0.100	Continuing	Continuing	-
Nuclear Matters Technical Support	IA	Department of Health and Human Services : Bethesda, MD	-	0.107		1.826		1.826		-		1.826	Continuing	Continuing	-
<b>Subtotal</b>			3.236	4.571		6.132		7.104		-		7.104	Continuing	Continuing	N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Office of the Secretary Of Defense** **Date:** February 2019

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	<b>Project (Number/Name)</b> 162 / Nuclear and Conventional Physical Security
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<b>Support (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
NA

<b>Test and Evaluation (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Citadel Protect	Various	Various : Various	0.140	-		-		-		-		-	-	-	-
Development, Test and Evaluation of System Operations Audit and Recording	MIPR	SPAWAR : Charleston, SC	-	0.591		-		-		-		-	-	-	-
Comparative Evaluation of Man-Portable Mass Spectrometry Explosive Detection Systems T&E	MIPR	NAVEODTECH : Indian Head, MD	0.918	-		-		-		-		-	-	-	-
Comparative Colorimetric T&E	MIPR	NAVEODTECH : Indian Head, MD	0.978	0.172		-		-		-		-	-	-	-
Aerial Physical Security Assessment	MIPR	SPAWARSYSCEN Atlantic : Charleston, SC	-	0.595		0.433		-		-		-	Continuing	Continuing	-
Joint Assessment of Nefarious Swimmer System	MIPR	Multiple Performers : Multiple Locations	-	0.975		1.267		-		-		-	Continuing	Continuing	-
Greyscan T&E	MIPR	NSWC IHEODTD : Indian Head, MD	-	-		0.371		-		-		-	-	-	-
Portable and Handheld X-ray T&E	MIPR	NSWC IHEODTD : Indian Head, MD	-	-		-		0.633		-		0.633	Continuing	Continuing	-
C-UAS in the Homeland	MIPR	Multiple Performers : Various Locations	-	4.247		-		3.500		-		3.500	Continuing	Continuing	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Office of the Secretary Of Defense** **Date:** February 2019

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	<b>Project (Number/Name)</b> 162 / Nuclear and Conventional Physical Security
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<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2018</b>		<b>FY 2019</b>		<b>FY 2020 Base</b>		<b>FY 2020 OCO</b>		<b>FY 2020 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Test & Evaluation	MIPR	Army Research Laboratory : Adelphi, MD	-	-		-		0.561		-		0.561	Continuing	Continuing	-
<b>Subtotal</b>			2.036	6.580		2.071		4.694		-		4.694	Continuing	Continuing	N/A

**Remarks**  
NA

<b>Management Services (\$ in Millions)</b>				<b>FY 2018</b>		<b>FY 2019</b>		<b>FY 2020 Base</b>		<b>FY 2020 OCO</b>		<b>FY 2020 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Prior Years - Completed Efforts	Various	*** PERFORMING ACTIVITY *** : *** LOCATION ***	2.636	-		-		-		-		-	Continuing	Continuing	-
Detection & Assessment IPT	MIPR	AF Security Forces Center : Lackland AFB, TX	1.150	0.251		0.095		0.215		-		0.215	-	-	-
Explosive Detection Equipment Guide	MIPR	NAVEODTECH : Indian Head, MD	2.535	-		-		-		-		-	-	-	-
<b>Subtotal</b>			6.321	0.251		0.095		0.215		-		0.215	Continuing	Continuing	N/A

**Remarks**  
NA

<b>Project Cost Totals</b>	<b>Prior Years</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
	197.555	30.587	27.301	35.134	-	35.134	Continuing	Continuing	N/A

**Remarks**  
NA

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2020 Office of the Secretary Of Defense		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	<b>Project (Number/Name)</b> 162 / <i>Nuclear and Conventional Physical Security</i>



## PSEAG REQUIREMENTS PROCESS





Assistant Secretary of Defense for Nuclear, Chemical and Biological Defense Programs

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2020 Office of the Secretary Of Defense		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	<b>Project (Number/Name)</b> 162 / <i>Nuclear and Conventional Physical Security</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Detection &amp; Assessment</i></b>				
Detection & Assessment	1	2012	4	2024
<b><i>Decision Support</i></b>				
Decision Support	1	2012	4	2024
<b><i>Storage &amp; Safeguards</i></b>				
Storage & Safeguards	1	2012	4	2024
<b><i>Installation &amp; Transport Security</i></b>				
Installation & Transport Security	1	2012	4	2024
<b><i>Prevention</i></b>				
Prevention	1	2012	4	2024
<b><i>Access Control</i></b>				
Access Control	1	2012	4	2024
<b><i>Analytical Support</i></b>				
Analytical Support	1	2012	4	2024

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**Exhibit R-2A, RDT&E Project Justification:** PB 2020 Office of the Secretary Of Defense **Date:** February 2019

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	<b>Project (Number/Name)</b> 041 / CNT Prevention ADC&P
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COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
041: CNT Prevention ADC&P	1.927	0.000	0.550	5.836	-	5.836	7.272	7.804	7.937	8.010	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Establish a Defense-wide Nuclear Threat Reduction (NTR) Materiel Development Program focused on transitioning maturing technology development into operational capabilities that addresses gaps identified by Services, Combatant Commands, and Joint Staff. The CNT acquisition strategy directly applies to Joint requirements for CNT materiel development and addresses the materiel and sustainment gaps for general purpose Joint Forces including the US Army 20th CBRNECommand / Navy Visit, Board, Search, and Seizure / Technical Support Groups (NIMBLE ELDER and the US Special Operations Command).

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

	FY 2018	FY 2019	FY 2020
<b>Title:</b> Countering Nuclear Threats	0.000	0.550	5.836
<b>Description:</b> Establish a Defense-wide Countering Nuclear Threats (CNT) Materiel Development Program based on capability gaps identified by Services, Combatant Commands, and Joint Staff. The CNT acquisition strategy directly applies to Joint requirements for CNT materiel development and addresses the materiel and sustainment gaps for general purpose Joint Forces including the US Army 20th Support Command / Navy Visit, Board, Search, and Seizure / Technical Support Groups (NIMBLE ELDER and the US Special Operations Command).			
<b>FY 2019 Plans:</b> • Development of active prevention capabilities for nuclear threat reduction through developing improved DoD capabilities for early warning and detection of nuclear proliferation and building partner capacity to detect, interdict and disrupt proliferation networks.			
<b>FY 2020 Plans:</b> • Development of active prevention capabilities for nuclear threat reduction through developing improved DoD capabilities for early warning and detection of nuclear proliferation and building partner capacity to detect, interdict and disrupt proliferation networks.			
<b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Projects and project costs vary from year to year			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	0.550	5.836

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

N/A

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2020 Office of the Secretary Of Defense		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	<b>Project (Number/Name)</b> 041 / <i>CNT Prevention ADC&amp;P</i>

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

**Remarks**

**D. Acquisition Strategy**  
N/A

**E. Performance Metrics**  
The program performance metrics are established/approved through the Program Manager. The cost, schedule and technical progress is reviewed on a quarterly basis. 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 2020 Office of the Secretary Of Defense **Date:** February 2019

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	<b>Project (Number/Name)</b> 041 / CNT Prevention ADC&P
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<b>Product Development (\$ in Millions)</b>				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Radioisotope Identification Device	MIPR	JPEO CBD : Aberdeen, MD.	-	-		0.550		-		-		-	-	-	-
Radiological Detection System	Sub Allot	JPEO CBD : Aberdeen, MD.	1.927	-		-		-		-		-	-	-	-
Active Prevention System	TBD	TBD : TBD	-	-		-		5.836		-		5.836	Continuing	Continuing	-
<b>Subtotal</b>			1.927	-		0.550		5.836		-		5.836	Continuing	Continuing	N/A

**Remarks**  
NA

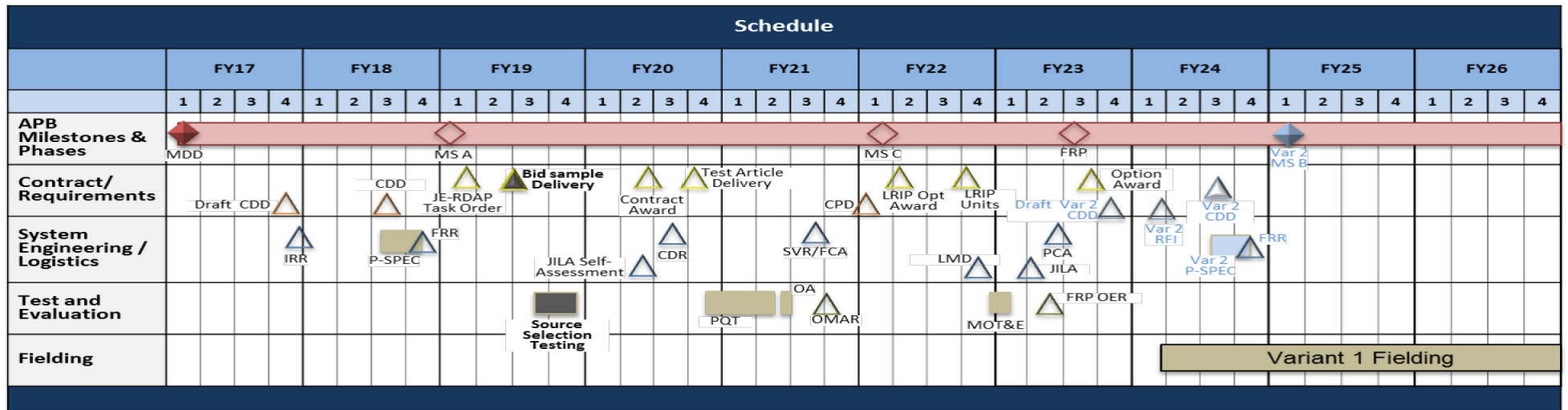
	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	1.927	-	0.550	5.836	-	5.836	Continuing	Continuing	N/A

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2020 Office of the Secretary Of Defense</b>		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	<b>Project (Number/Name)</b> 041 / CNT Prevention ADC&P

## Radioisotope Identification Device



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2020 Office of the Secretary Of Defense		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	<b>Project (Number/Name)</b> 041 / <i>CNT Prevention ADC&amp;P</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Radioisotope Identification Device</i></b>				
Radioisotope Identification Device	1	2018	4	2019
<b><i>Active Prevention System</i></b>				
Active Prevention System	1	2020	4	2024

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2020 Office of the Secretary Of Defense										<b>Date:</b> February 2019		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats				<b>Project (Number/Name)</b> 040 / National Technical Nuclear Forensics Systems			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020 Base</b>	<b>FY 2020 OCO</b>	<b>FY 2020 Total</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
040: National Technical Nuclear Forensics Systems	37.815	1.578	0.225	1.725	-	1.725	1.725	2.725	1.725	1.227	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Nuclear forensics is the thorough collection, analysis and evaluation of radiological and nuclear material in a pre-detonation state and post-detonation radiological or nuclear materials, devices and debris, as well as the immediate effects created by a nuclear detonation. The ability to identify the source of nuclear material from radioactive debris is critical to our national defense and security. Swift and accurate forensic and attribution (identification) capabilities are vital to developing an appropriate national response to a nuclear event and preventing future attacks in a timely manner.

A credible nuclear forensics program is essential to preventing nuclear terrorism by deterring nations from sponsoring nuclear terrorism. The purpose of this program is to develop systems to provide timely and accurate information to national leadership in the area of nuclear forensics.

Per DoDD 2060.04 OSD AT&L NCB provides guidance and direction for the implementation of the Department of Defense National Technical Nuclear Forensics program. NCB represents DoD interests in all areas of nuclear forensics but emphasizes post-detonation applications due to Presidential guidance assigning the department the lead role in develop, providing, and maintaining post-detonation nuclear forensics capability.

This PE can fund travel to support the requirements of this program.

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

	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<b>Title:</b> National Technical Nuclear Forensics Systems	1.578	0.225	1.725
<b>Description:</b> Advanced development of ground based prompt diagnostic and airborne collection systems. This technology will provide new information that increases accuracy and provides an improved timeline in support of senior leadership decision making.			
<b>FY 2019 Plans:</b>			
• Transition Harvester PACS capability to the Air Force. This system provides a modular particulate air sampling capability that augments the Department of Defense mobile nuclear air sampling capability to support collection requirements for treaty verification and National Technical Nuclear Forensics.			
• Conduct the Nuclear Testing, Diagnostics, Forensics and Stockpile Stewardship Course. This course seeks to enhance the education of the Military & Federal workforce in areas critical to the Stockpile Stewardship Program, and also to include			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2020 Office of the Secretary Of Defense		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	<b>Project (Number/Name)</b> 040 / <i>National Technical Nuclear Forensics Systems</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>
<p>applications to synergistic capabilities such as technical nuclear forensics in order to facilitate technical and professional development and increase understanding of the history of nuclear weapons development, testing and design, and the interdependence between technical nuclear forensics and the nuclear weapons program as an integral component.</p> <p><b>FY 2020 Plans:</b></p> <ul style="list-style-type: none"> <li>• Conduct the Nuclear Testing, Diagnostics, Forensics and Stockpile Stewardship Course. This course seeks to enhance the education of the Military &amp; Federal workforce in areas critical to the Stockpile Stewardship Program, and also to include applications to synergistic capabilities such as technical nuclear forensics in order to facilitate technical and professional development and increase understanding of the history of nuclear weapons development, testing and design, and the interdependence between technical nuclear forensics and the nuclear weapons program as an integral component.</li> <li>• Advanced research and development to support DoD nuclear forensics capabilities.</li> </ul> <p><b>FY 2019 to FY 2020 Increase/Decrease Statement:</b> Harvester PACS capability is being transitioned to the Air Force starting in FY19. FY20 increase in funding for advanced research and development to support DoD nuclear forensics capabilities.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	1.578	0.225	1.725

<p><b>C. Other Program Funding Summary (\$ in Millions)</b> N/A</p> <p><b>Remarks</b></p>
<p><b>D. Acquisition Strategy</b> N/A</p>
<p><b>E. Performance Metrics</b> The program performance metrics are established/approved through the Program Manager. The cost, schedule and technical progress is reviewed on a quarterly basis. Performance variances are addressed and corrective action(s) is(are) implemented as necessary. This is new program focusing on advanced development to meet critical needs.</p>

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Office of the Secretary Of Defense** **Date:** February 2019

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	<b>Project (Number/Name)</b> 040 / National Technical Nuclear Forensics Systems
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<b>Product Development (\$ in Millions)</b>				<b>FY 2018</b>		<b>FY 2019</b>		<b>FY 2020 Base</b>		<b>FY 2020 OCO</b>		<b>FY 2020 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Harvester Particulate Airborne Collection System	Various	Various : Various	14.078	1.327		-		-		-		-	Continuing	Continuing	-
Modular Whole-air Collection System	Various	Various : Various	1.622	-		-		-		-		-	Continuing	Continuing	-
DISCREET OCULUS / United States Prompt Diagnostics System	Various	Various : Various	19.017	-		-		-		-		-	Continuing	Continuing	-
SOCOM Rendor Safe	Various	Various : Various	1.951	-		-		-		-		-	Continuing	Continuing	-
Global Initiative Information Portal	IA	Department of State : Washington, DC	0.656	-		-		-		-		-	Continuing	Continuing	-
Nuclear Forensics Development	MIPR	Multiply Performers : Multiply Locations	-	-		-		1.530		-		1.530	Continuing	Continuing	-
<b>Subtotal</b>			37.324	1.327		-		1.530		-		1.530	Continuing	Continuing	N/A

**Remarks**  
NA

<b>Management Services (\$ in Millions)</b>				<b>FY 2018</b>		<b>FY 2019</b>		<b>FY 2020 Base</b>		<b>FY 2020 OCO</b>		<b>FY 2020 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Nuclear Testing, Diagnostics, Forensics and Stockpile Stewardship Course	IA	DOE : Livermore, CA	0.398	0.251		0.225		0.195		-		0.195	Continuing	Continuing	-
IDA - CNT Goals & Approaches	Sub Allot	IDA : Alexandria, VA	0.093	-		-		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			0.491	0.251		0.225		0.195		-		0.195	Continuing	Continuing	N/A

**Remarks**  
NA

**UNCLASSIFIED**

**Exhibit R-3, RDT&E Project Cost Analysis:** PB 2020 Office of the Secretary Of Defense **Date:** February 2019

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	<b>Project (Number/Name)</b> 040 / <i>National Technical Nuclear Forensics Systems</i>
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	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	37.815	1.578	0.225	1.725	-	1.725	Continuing	Continuing	N/A

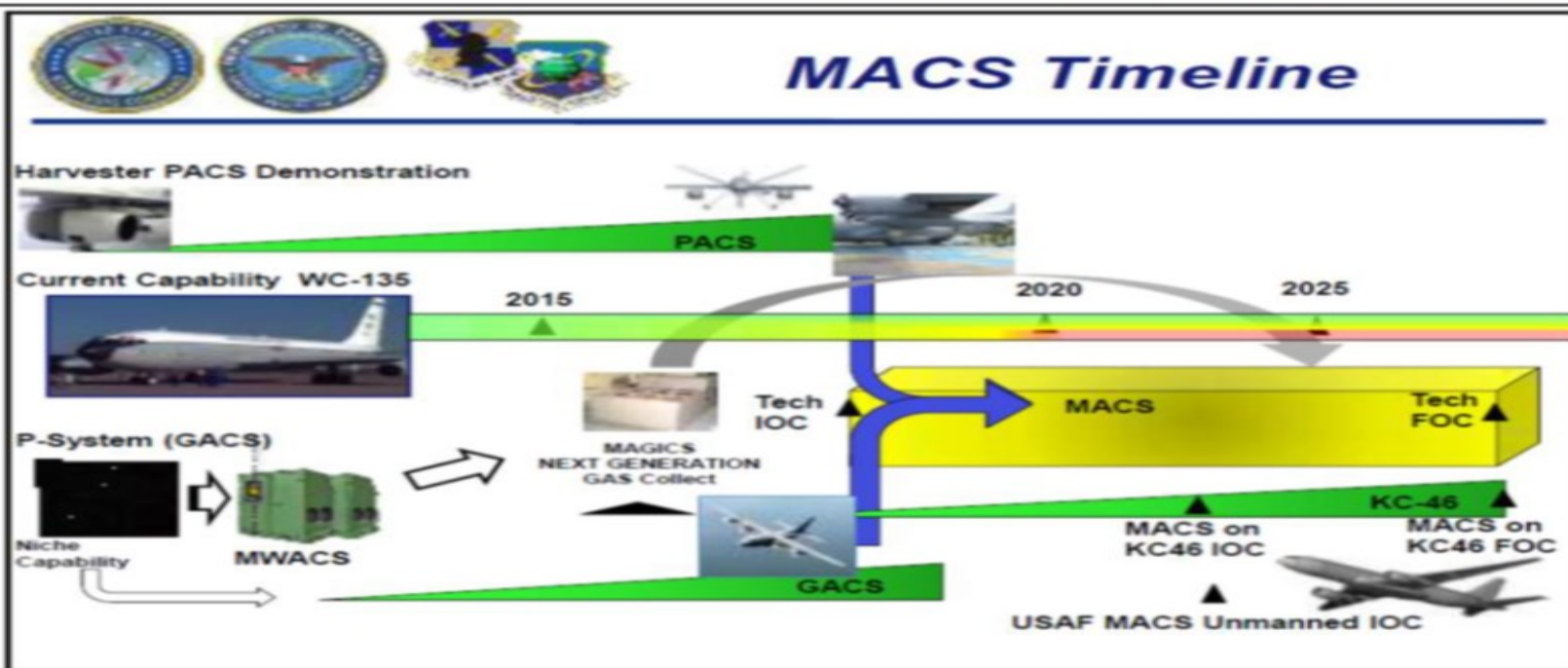
**Remarks**  
NA

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2020 Office of the Secretary Of Defense		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	<b>Project (Number/Name)</b> 040 / National Technical Nuclear Forensics Systems

## Harvester Particulate Airborne Collection System & Modular Whole-air Collection System

### Particulate Airborne Collection System and Modular Whole-air Collection System Timeline



**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2020 Office of the Secretary Of Defense		<b>Date:</b> February 2019
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	<b>Project (Number/Name)</b> 040 / <i>National Technical Nuclear Forensics Systems</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Modular Airborne Collection Systems</i></b>				
Modular Airborne Collection Systems	1	2014	4	2018
<b><i>Nuclear Testing, Diagnostics, Forensics and Stockpile Stewardship Course</i></b>				
Nuclear Testing, Diagnostics, Forensics and Stockpile Stewardship Course	1	2018	4	2024