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Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Office of the Secretary Of Defense **Date:** February 2016

Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>					PE 0603161D8Z I <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>							
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
Total Program Element	140.209	40.088	31.648	28.498	-	28.498	33.677	35.915	37.232	36.347	Continuing	Continuing
P162: <i>Nuclear and Conventional Physical Security</i>	116.854	27.897	28.304	27.535	-	27.535	31.105	33.707	34.148	35.131	Continuing	Continuing
P041: <i>CNT Rad/Nuc Passive Defense ADC&P</i>	1.927	0.000	0.000	0.000	-	0.000	1.187	0.556	2.149	0.000	Continuing	Continuing
P040: <i>National Technical Nuclear Forensics Systems</i>	21.428	12.191	3.344	0.963	-	0.963	1.385	1.652	0.935	1.216	Continuing	Continuing

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), 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.

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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603161D8Z I <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>
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B. Program Change Summary (\$ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	41.014	31.710	32.244	-	32.244
Current President's Budget	40.088	31.648	28.498	-	28.498
Total Adjustments	-0.926	-0.062	-3.746	-	-3.746
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.016	-			
• SBIR/STTR Transfer	-0.910	-			
• Internal Realignment of Funds	-	-	9.444	-	9.444
• FFRDC	-	-0.062	-	-	-
• Fiscal Guidance Adjustment	-	-	-0.108	-	-0.108
• Leadership Realignment	-	-	-12.000	-	-12.000
• Efficiency Adjustment	-	-	-0.763	-	-0.763
• Economic Assumptions Adjustment	-	-	-0.319	-	-0.319

Change Summary Explanation

Internally realigned procurement funds in the amount of \$9.444M to consolidate funds to transfer the program and resources (-\$12.000M) total, from OSD to the Air Force to support strategic implementation of the United States Prompt Diagnostics System.

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Office of the Secretary Of Defense										Date: February 2016		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats				Project (Number/Name) P162 / Nuclear and Conventional Physical Security			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
P162: Nuclear and Conventional Physical Security	116.854	27.897	28.304	27.535	-	27.535	31.105	33.707	34.148	35.131	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)

	FY 2015	FY 2016	FY 2017
Title: Detection and Assessment	12.097	9.787	15.225

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P162 / Nuclear and Conventional Physical Security

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<p>Description: 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>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> • Conduct Explosive Detection Equipment testing • Develop wide-area, long-range, foliage, seismic and radiological detection capability (both fixed & mobile) • Develop waterside detection & tracking capability (underwater & land-water interface) • Develop standoff detection, assessment and defeat capability <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> • Develop a Joint detection and assessment capability • Develop a multi-sensor detection and discrimination capability to reduce nuisance and false alarms • Compare dual energy X-Ray vehicle imaging systems • Develop a radar processing dynamic structure filter to reduce nuisance and false alarms • Finalize development of the Joint Radiological Detection System • SPAM Transition to Operational Initial Capability (STOIC) • Stand-Off Weapon Defeat IPT • Thermal Imaging Dual-use for Aerosol Monitoring Alarms and Security <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> • Develop a Joint detection and assessment capability • Develop a multi-sensor detection and discrimination capability to reduce nuisance and false alarms • Compare dual energy X-Ray vehicle imaging systems • Develop a radar processing dynamic structure filter to reduce nuisance and false alarms 			
<p>Title: Access Controls</p> <p>Description: 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>FY 2017 Plans:</p>	-	-	2.855

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> Continue to develop a continuous evaluation capability to be able to identify cleared individuals in near real-time who may no longer meet the criteria for retaining a clearance and have become a potential security risk 			
<p>Title: Installation and Transport Security</p> <p>Description: 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>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> Address technology gaps after Integrated Waterside Security concept demonstration Continue to develop a near-shore unified tactical response capability <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> Determine the Operational suitability of an Automated Harbor Barrier Gate capability Develop an enterprise Installation Decision Support Initiative application providing risk analysis and risk mitigation decision support in a secure, web-enabled architecture to be hosted on the DoD's SIPRNET <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> Determine the Operational suitability of an Automated Harbor Barrier Gate capability Develop an enterprise Installation Decision Support Initiative application providing risk analysis and risk mitigation decision support in a secure, web-enabled architecture to be hosted on the DoD's SIPRNET 	4.570	9.266	7.509
<p>Title: Storage and Safeguards</p> <p>Description: 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>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> Finalize design of a Semi-Hardened Prime Nuclear Air Force Secure Transport Container Design an internal delay capability for the Secure Transportable Maintenance System 	0.100	-	-
<p>Title: Prevention</p>	1.275	-	-

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<p>Description: 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>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> Expand engagement opportunities with international partners in Nuclear Security 			
<p>Title: Decision Support Systems</p> <p>Description: 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>FY 2015 Accomplishments:</p> <ul style="list-style-type: none"> Continue to develop capability to ensure threat alert and response systems are interoperable with equipment used by the DoD and mutual aid partners in the local communities (focus on USEUCOM AOR) Continue to develop a shared and automated content across the security domains and functional areas, enabling more efficient and accurate personnel vetting, access controls, insider threat prevention and enhanced security operating environments Analyze the DoD Nuclear Weapons Complex Critical Infrastructure for capability gaps <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> Develop a shared and automated content across the security domains and functional areas, enabling more efficient and accurate personnel vetting, access controls, insider threat prevention and enhanced security operating environments Develop a risk analysis tool to help commanders' in the field make sound security decisions <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> Finalize the development of a shared and automated content across the security domains and functional areas, enabling more efficient and accurate personnel vetting, access controls, insider threat prevention and enhanced security operating environments Finalize the risk analysis tool to help commanders' in the field make sound security decisions 	5.254	4.836	1.946
<p>Title: Analytical Support</p> <p>Description: 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&E Program.</p>	4.601	4.415	-

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<p><i>FY 2015 Accomplishments:</i></p> <ul style="list-style-type: none"> • Provide DOD and industry the means to achieve PSE interoperability through the development of physical security standards and interface control devices • Develop a comprehensive Physical Security Enterprise Test & Evaluation Program • Conducts analyses and review of requirements, evaluates proposed RDT&E solutions and recommends priorities for the integrated investment portfolio • Analyze alternatives for integrated waterside security for an in transit environment • Enhance global nuclear security and support the US Government for the Nuclear Security Summit <p><i>FY 2016 Plans:</i></p> <ul style="list-style-type: none"> • Conduct a waterside security stakeholder Table Top Exercise to confirm set of alternatives and select the preferred alternative • Continue to support global nuclear security and support the US Government for the Nuclear Security Summit 			
Accomplishments/Planned Programs Subtotals	27.897	28.304	27.535

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 2017 Office of the Secretary Of Defense **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P162 / Nuclear and Conventional Physical Security
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
Defense Security Enterprise Architecture	Various	Multiple performers : Multiple locations	1.324	1.700		1.450		0.999		-		0.999	-	-	-
Mission Assurance, Threat Alert, Disaster Resiliency and Response	Various	Multiple performers : Multiple locations	1.480	-		-		-		-		-	-	-	-
Continuous Evaluation Concept Demonstration	MIPR	Army Research Laboratory : Adelphi, MD	0.430	-		-		-		-		-	-	-	-
Keystone EUCOM Project	Various	Multiple Performers : Multiple Locations	1.104	1.700		1.845		1.977		-		1.977	-	-	-
Joint Risk Decision Support Tool	MIPR	AF Civil Engineering Center : Tyndall AFB, FL	1.019	1.052		1.800		1.524		-		1.524	-	-	-
Integrated Ground Security, Surveillance and Response Capability	MIPR	Naval Surface Warfare Center Dahlgren Division : Dahlgren, VA	0.612	-		-		-		-		-	-	-	-
Ground-Based Operational Surveillance System	MIPR	NSWC Crane : Crane, IN	2.102	3.250		-		-		-		-	-	-	-
Physical Security Enterprise Program	Various	Multiple Performers : Multiple Locations	93.320	2.751		8.441		2.450		-		2.450	-	-	-
US Navy Spike Weapon System, Improve EO Seeker	MIPR	NAVAIRWARCENWPNDIV : China Lake, CA	0.450	-		-		-		-		-	-	-	-
Near-shore Unified Tactical Response	MIPR	SPAWAR Pacific : San Diego, CA	0.554	-		-		-		-		-	-	-	-
Integrated Waterside Security Concept Demonstration	MIPR	Multiple Performers : Multiple Locations	3.204	-		-		-		-		-	-	-	-
Foliage Penetrating Technology Evaluation	MIPR	Naval Surface Warfare Crane : Crane, Indiana	0.504	-		-		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Office of the Secretary Of Defense **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P162 / Nuclear and Conventional Physical Security
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
Radar Assisted Area Protection	MIPR	US Army ARDEC : Picatinny Arsenal, NJ	1.105	2.874		2.500		-		-		-	-	-	-
Marine Mammal - Vigilant Localization	MIPR	SPAWAR Pacific : San Diego, CA	0.708	-		-		-		-		-	-	-	-
Marine Mammal - Enhanced Interdiction	MIPR	SPAWAR Pacific : San Diego, CA	0.450	-		-		-		-		-	-	-	-
End of Land-water Interface Sensor Project	MIPR	Applied Research Lab: University of Texas : Austin, TX	1.004	1.500		-		-		-		-	-	-	-
Missile Field Defense C3SA	MIPR	SPAWAR Atlantic : Charleston, SC	1.089	-		-		-		-		-	-	-	-
Semi-Hardened PNAF Secure Transportation Container	IA	Sandia National Labs : Albuquerque, NM	0.751	0.000		-		-		-		-	-	-	-
Secure Transportation Maintenance System Internal Delay	IA	Sandia National Labs : Albuquerque, NM	0.741	0.100		-		-		-		-	-	-	-
Radiological Detection System	Sub Allot	Joint Product Manager - Rad/Nuc Defense : Aberdeen, MD	2.965	4.615		-		-		-		-	-	-	-
Automated Harbor Barrier Gate - Operational Suitability	TBD	TBD : TBD	-	1.000		1.250		-		-		-	-	-	-
Detection & Assessment Follow-on	TBD	TBD : TBD	-	1.500		2.500		2.000		-		2.000	-	-	-
Maritime Expeditionary & Transit Security	TBD	TBD : TBD	-	0.760		1.255		1.455		-		1.455	-	-	-
US Navy Spike Weapon System, Common Launch Tube	MIPR	NAVAIRWARCENWPNDIV : China Lake, CA	-	1.000		1.555		0.984		-		0.984	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Office of the Secretary Of Defense **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P162 / Nuclear and Conventional Physical Security
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Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
Thermal Imaging Dual-use for Aerosol Monitoring Alarms and Security	TBD	TBD : TBD	-	0.700		1.678		1.788		-		1.788	-	-	-
Multi-sensor Detection and Discrimination	MIPR	TBD : TBD	-	0.590		0.650		0.873		-		0.873	-	-	-
Tactical Security System	TBD	TBD : TBD	-	-		-		2.850		-		2.850	-	-	-
Mobile Integrated Expeditionary Vehicle Inspection Station	TBD	TBD : TBD	-	-		-		2.100		-		2.100	-	-	-
Linear Sensor System for Multi-Threat Detection	TBD	TBD : TBD	-	-		-		1.750		-		1.750	-	-	-
PL1N/PL1 Portable Intrusion Detection System	TBD	TBD : TBD	-	-		-		1.100		-		1.100	-	-	-
JIGSAW Enhanced Capability Suite Technology Development	MIPR	SPAWAR Atl : Charleston, SC	-	-		-		0.800		-		0.800	-	-	-
Secure Communications with Persistent Identification/Blue Force Tracking	TBD	TBD : TBD	-	-		-		1.450		-		1.450	-	-	-
Wide Area Detection Systems	TBD	TBD : TBD	-	-		-		0.800		-		0.800	-	-	-
Radar Detection of UAVs	TBD	TBD : TBD	-	-		-		0.700		-		0.700	-	-	-
Subtotal			114.916	25.092		24.924		25.600		-		25.600	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Office of the Secretary Of Defense **Date:** February 2016




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Support (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
World Institute for Nuclear Security	MIPR	Defense Threat Reduction Agency : Ft Belvoir, VA	0.300	0.350		0.350		0.350		-		0.350	-	-	-
International Atomic Energy Agency Support	IA	Department of State : Washington, DC	0.200	0.300		0.300		-		-		-	-	-	-
PSEAG Website and ePSEAG Program Management Tool	MIPR	AF Civil Engineering Center : Tyndall AFB, FL	0.265	-		-		-		-		-	-	-	-
Defense Installation Access Control Support	MIPR	AF Civil Engineering Center : Tyndall AFB, FL	0.345	-		-		-		-		-	-	-	-
Physical Security Subject Matter Experts	MIPR	Naval Sea Systems Command : Washington Navy Yard, DC	0.120	0.200		0.250		0.250		-		0.250	-	-	-
Subtotal			1.230	0.850		0.900		0.600		-		0.600	-	-	-

Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
Detection & Assessment IPT	MIPR	AF Security Forces Center : Lackland AFB, TX	0.200	0.250		0.350		0.350		-		0.350	-	-	-
PSEAG Top 5 Technical Review	MIPR	Naval Surface Warfare Center Dahlgren Division : Dahlgren, VA	0.508	-		-		-		-		-	-	-	-
DoD Nuclear Weapons Complex Critical Infrastructure Analysis	MIPR	Naval Sea Systems Command : Washington Navy Yard, DC	-	0.255		0.455		-		-		-	-	-	-

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P162 / Nuclear and Conventional Physical Security

LEGEND	
	Planned Actions
	In-Progress Actions
	Completed Actions

Radiological Detection System (RDS) Milestones

Milestones	Baseline Date	Current Date	Completed Date	FY 15				FY 16				FY 17											
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4								
				O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M
Phase 2 Close-out	Jun 2014	Nov 2014																					
Contractor development + Ctr testing	Jun 2014	Jan 2015 (start)																					
Critical Design Reviews	Jan 2015	Aug 2015																					
Test Article Deliveries	Feb 2015	Nov 2015																					
Phase 3 Close-out	Mar 2015	Dec 2015																					
Developmental Testing and OA conducted	Mar 2015	Jan 2016 (start)																					
Test Report	Mar 2016	Feb 2017																					
Phase 4 Close-out	Mar 2016	Feb 2017																					
LRIP Option Award and build	May 2016	Apr 2017 (start)																					

PSEP Milestones:




- Completion of major phases, task items, or deliverables
- Decision/kill points, performance reviews, etc.
- Demonstrations/Events (Please provide start/end dates as depicted)
- *Please use this format. Minor changes acceptable (i.e. annotations)

Metrics

- Schedule metrics will be based off of the "Current" Date
- Changes of current dates need to be noted in issues/changes

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P162 / Nuclear and Conventional Physical Security

LEGEND	
	Planned Actions
	In-Progress Actions
	Completed Actions

**IGSSR-C
Milestones**

Milestones	Baseline Date	Current Date	Completed Date	FY 13				FY 14				FY 15																									
				Q1		Q2		Q3		Q4		Q1		Q2		Q3		Q4																			
				O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J
Integrated Base Defense Software Synch Meetings	Quarterly																																				
Fusion Software Comparison Study	03/29/2013	03/29/3013	03/29/3013					Analysis and Report complete.																													
Fusion Software Baseline Validation and Test.	08/30/2013	08/30/2013	09/30/2013								Test and Report complete.																										
CDD Joint and Army Staffing	06/15/2013	06/15/2013	06/15/2013								CDD Approved (09/30/2013).																										
Revised Technology Development Strategy	10/31/2013	Unfunded									Unfunded																										
Revised MDD Package for staffing and approval	11/22/2013	Unfunded									Unfunded																										
Projected MDD and Milestone B	01/31/2014	Unfunded									MDD Unfunded																	MS B									

PSEP Milestones:

- Completion of major phases, task items, or deliverables
- Decision/kill points, performance reviews, etc.
- Demonstrations/Events (Please provide start/end dates as depicted)
- *Please use this format. Minor changes acceptable (i.e. annotations)

Metrics

- Schedule metrics will be based off of the "Current" Date
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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P162 / Nuclear and Conventional Physical Security

LEGEND

- Planned Actions
- In-Progress Actions
- Completed Actions

**Enhanced Interdiction
Milestones**

Milestones	Baseline Date	Current Date	Completed Date	FY 13				FY 14				FY 15															
				Q3		Q4		Q1		Q2		Q3		Q4													
				A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
Kickoff Meeting Completed	5/15/2013	5/15/2013	5/15/2013																								
Integrated Master Plan Submitted	5/31/2013	5/31/2013	5/31/2013																								
Planning and prep Complete	5/15/2013	5/15/2013	5/15/2013																								
Design Complete	12/31/2013	12/31/2013	12/31/2013																								
Build Complete	2/21/2014	4/15/2014	4/15/2014																								
Tech Demo	5/14/2014	5/22/2014													Bangor on 7 May, KB on 22 May												
Ops Demo	1/5/2015	1/5/2015																									
Transition	3/30/2015	3/30/2015																									
Final Report Submitted	5/25/2015	5/25/2015																									

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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P162 / Nuclear and Conventional Physical Security

LEGEND	
	Planned Actions
	In-Progress Actions
	Completed Actions

PNAF Transport Container Milestones




Milestones	Baseline Date	Current Date	Completed Date	FY 13				FY 14				FY 15											
				Q1		Q2		Q3		Q4		Q1		Q2		Q3		Q4					
				O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M
Developed Project Plan	07 Feb 13	07 Feb 13	27 Mar 13																				
Developed Container Analysis	25 Feb 13	25 Feb 13	20 Sep 13																				
Developed Initial Container Design	23 Sep 13	23 Sep 13	07 Jan 14																				
Phase I final Milestone Review	06 Feb 14	06 Feb 14	06 Feb 14																				
Initiate Phase II funding Received	06 June 06	06 June 06	06 June 06																				
Produce Prototype	31 Oct 14																						

- PSEP Milestones:**
- Completion of major phases, task items, or deliverables
 - Decision/kill points, performance reviews, etc.
 - Demonstrations/Events (Please provide start/end dates as depicted)
 - *Please use this format. Minor changes acceptable (i.e. annotations)

- Metrics**
- Schedule metrics will be based off of the "Current" Date
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Exhibit R-4, RDT&E Schedule Profile: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P162 / Nuclear and Conventional Physical Security

LEGEND	
	Planned Actions
	In-Progress Actions
	Completed Actions

Missile Field Defense Force Command, Control, Communications and Situational Awareness

Milestones	Baseline Date	Current Date	Completed Date	FY 01				FY 02				FY 03											
				Q1		Q2		Q3		Q4		Q1		Q2		Q3		Q4					
				O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M
Phase 1 (Planning Phase)																							
Preliminary Design																							
Critical Design																							
Prototype Production																							
Prototype Testing																							
Design Revision																							
System Fabrication																							
Test & Evaluation																							
System Turnover																							

PSEP Milestones:

- Completion of major phases, task items, or deliverables
- Decision/kill points, performance reviews, etc.
- Demonstrations/Events (Please provide start/end dates as depicted)
- *Please use this format. Minor changes acceptable (i.e. annotations)

Metrics

- Schedule metrics will be based off of the "Current" Date
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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	Project (Number/Name) P162 / <i>Nuclear and Conventional Physical Security</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Integrated Ground Security, Surveillance and Response Capability</i>				
Integrated Ground Security, Surveillance and Response Capability	1	2014	2	2015
<i>Secure Transportable Maintenance System Safe Internal Delay Capability</i>				
Secure Transportable Maintenance System Safe Internal Delay Capability	1	2014	4	2015
<i>PNAF Transport Container</i>				
PNAF Transport Container	1	2014	1	2015
<i>Defense Installation Access Control</i>				
Defense Installation Access Control	1	2014	4	2014
<i>Continuous Evaluation Concept Demonstration</i>				
Continuous Evaluation Concept Demonstration	1	2014	4	2014
<i>Defense Security Enterprise Architecture</i>				
Defense Security Enterprise Architecture	1	2014	2	2016
<i>Mission Assurance, Threat Alert, Disaster Resiliency and Response</i>				
Mission Assurance, Threat Alert, Disaster Resiliency and Response	1	2014	4	2014
<i>Navy Spike Weapon System EO Seeker Upgrade</i>				
Navy Spike Weapon System EO Seeker Upgrade	1	2014	4	2014
<i>Standoff Weapons Defeat IPT</i>				
Standoff Weapons Defeat IPT	1	2014	4	2016
<i>Radar Assisted Area Protection</i>				
Radar Assisted Area Protection	1	2014	4	2017
<i>Foliage Penetration Technology Evaluation</i>				

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Office of the Secretary Of Defense **Date:** February 2016

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	Project (Number/Name) P162 / <i>Nuclear and Conventional Physical Security</i>
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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Foliage Penetration Technology Evaluation	1	2014	2	2017
<i>Marine Mammal Enhanced Interdiction</i>				
Marine Mammal Enhanced Interdiction	1	2014	3	2015
<i>Marine Mammal Vigilance Localization</i>				
Marine Mammal Vigilance Localization	1	2014	4	2014
<i>Integrated Waterside Security – Concept Demonstration</i>				
Integrated Waterside Security – Concept Demonstration	1	2014	4	2014
<i>Ground-Based Operational Surveillance System (Expeditionary)</i>				
Ground-Based Operational Surveillance System (Expeditionary)	1	2014	4	2015
<i>Missile Field Defense Force C3 Situational Awareness</i>				
Missile Field Defense Force C3 Situational Awareness	1	2014	2	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Office of the Secretary Of Defense										Date: February 2016		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats				Project (Number/Name) P041 / CNT Rad/Nuc Passive Defense ADC&P			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
P041: CNT Rad/Nuc Passive Defense ADC&P	1.927	0.000	0.000	0.000	-	0.000	1.187	0.556	2.149	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project establishes a Defense-wide Countering Nuclear Threats (CNT) Materiel development Program. The CNT acquisition strategy directly applies to a Joint requirement for CNT materiel development and addresses the materiel and sustainment gaps for general purpose Joint Forces, including the US Army 20th Support Command and Navy Visit, Board, Search, and Seizure, as well as the Technical Support Groups; NIMBLE ELDER and the US Special Operations Command where required.

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

N/A

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 Countering Nuclear Threats 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-4, RDT&E Schedule Profile: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P041 / CNT Rad/Nuc Passive Defense ADC&P

LEGEND	
	Planned Actions
	In-Progress Actions
	Completed Actions

Radiological Detection System (RDS) Milestones

Milestones	Baseline Date	Current Date	Completed Date	FY 15				FY 16				FY 17											
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4								
				O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M
Phase 2 Close-out	Jun 2014	Nov 2014																					
Contractor development + Ctr testing	Jun 2014	Jan 2015 (start)																					
Critical Design Reviews	Jan 2015	Aug 2015																					
Test Article Deliveries	Feb 2015	Nov 2015																					
Phase 3 Close-out	Mar 2015	Dec 2015																					
Developmental Testing and OA conducted	Mar 2015	Jan 2016 (start)																					
Test Report	Mar 2016	Feb 2017																					
Phase 4 Close-out	Mar 2016	Feb 2017																					
LRIP Option Award and build	May 2016	Apr 2017 (start)																					

PSEP Milestones:

- Completion of major phases, task items, or deliverables
- Decision/kill points, performance reviews, etc.
- Demonstrations/Events (Please provide start/end dates as depicted)
- *Please use this format. Minor changes acceptable (i.e. annotations)

Metrics

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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	Project (Number/Name) P041 / <i>CNT Rad/Nuc Passive Defense ADC&P</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Radiological Detection System</i>				
Radiological Detection System	1	2014	2	2019
<i>Joint Personal Dosimeter</i>				
Joint Personal Dosimeter	4	2014	1	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Office of the Secretary Of Defense										Date: February 2016		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats				Project (Number/Name) P040 / National Technical Nuclear Forensics Systems			
COST (\$ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
P040: National Technical Nuclear Forensics Systems	21.428	12.191	3.344	0.963	-	0.963	1.385	1.652	0.935	1.216	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.

Nuclear terrorism is one of the most significant and pressing threats identified by national leadership. A credible nuclear forensics program is essential to preventing nuclear terrorism by deterring nations from sponsoring nuclear terrorism. During the Deputy Management Advisory Group process shortfalls and resources to close these gaps were identified and supported by the Deputy Secretary of Defense. The purpose of this program is to develop systems such as ground based prompt diagnostic systems and airborne sample collection 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)

	FY 2015	FY 2016	FY 2017
Title: National Technical Nuclear Forensics Systems	12.191	3.344	0.963
Description: 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.			
FY 2015 Accomplishments:			
<ul style="list-style-type: none"> Completed installation of prototype prompt diagnostics systems at eleven sites in Metropolitan Area B and two sites in Metropolitan Area C. Completed manufacturing and testing of all prototype prompt diagnostics systems for Metropolitan Area C. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	Project (Number/Name) P040 / <i>National Technical Nuclear Forensics Systems</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2015	FY 2016	FY 2017
<ul style="list-style-type: none"> Completed contract for manufacturing one complete Harvester Particulate Airborne Collection System (PACS). Developed DOTmLPPF-P Change Request (DCR) for Harvester PACS to support platform assignment. Initiated feasibility study of Harvester PACS on additional platform. <p>FY 2016 Plans:</p> <ul style="list-style-type: none"> Complete installation of prototype prompt diagnostics systems in Metropolitan Areas B & C. Develop and test prototype prompt diagnostics systems for testbed use. Continue testing and operational support and integration of prototype ground-based prompt diagnostic systems and install in one additional city. Procure platform-specific mounting systems to enable operation of Harvester PACS on DCR-designated platform. Continue research for modular air sample collection systems to support National Technical Nuclear Forensics and augment treaty verification capabilities. <p>FY 2017 Plans:</p> <ul style="list-style-type: none"> Transition operational support and integration of ground-based prompt diagnostic systems to the Air Force for strategic implementation in key metropolitan areas. Continue Harvester PACS operational support of 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. 			
Accomplishments/Planned Programs Subtotals	12.191	3.344	0.963

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 Countering Nuclear Threats 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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Office of the Secretary Of Defense											Date: February 2016				
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats					Project (Number/Name) P040 / National Technical Nuclear Forensics Systems						

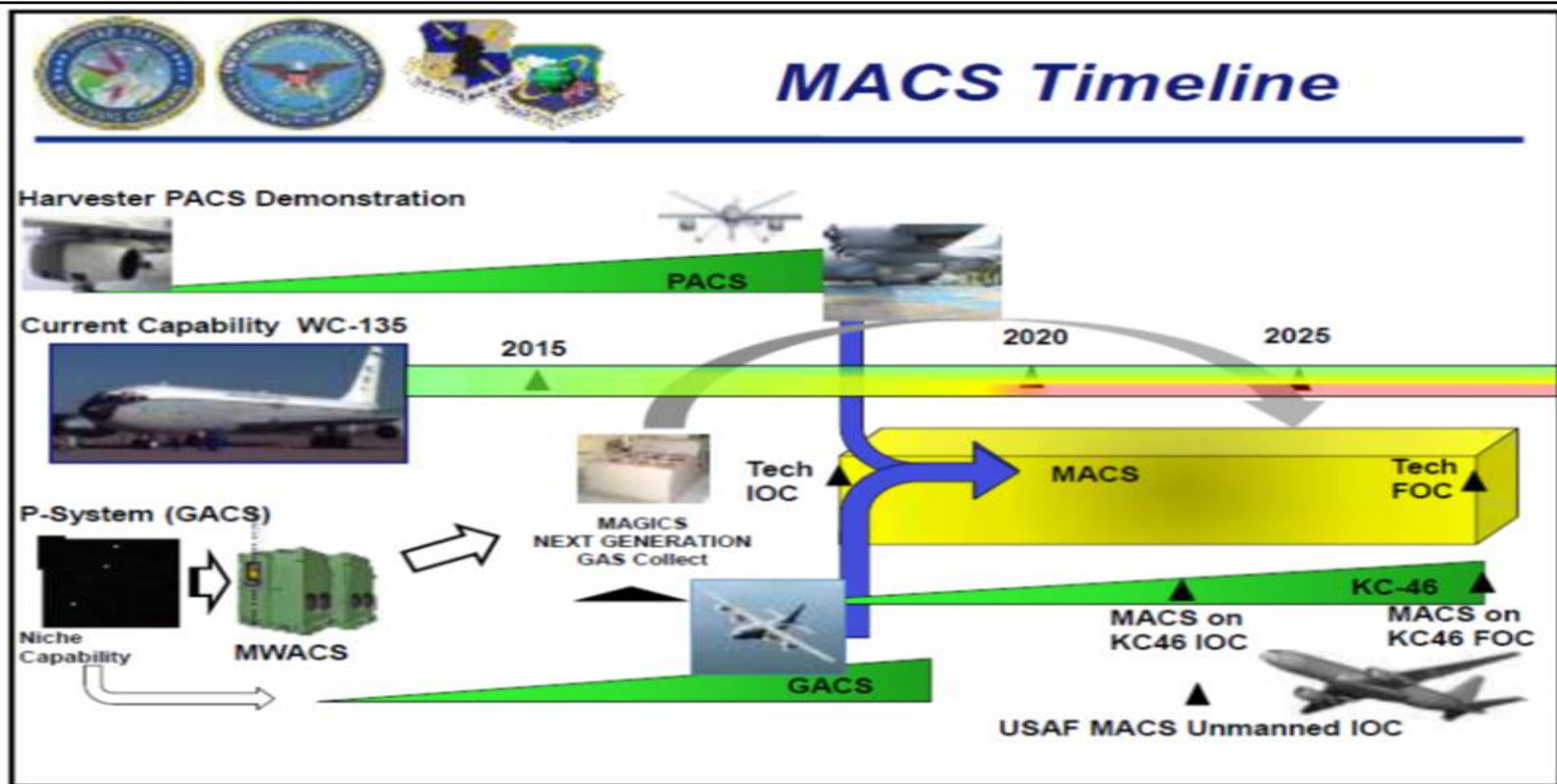
Product Development (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DISCREET OCULUS / United States Prompt Diagnostics System	Sub Allot	Defense Threat Reduction Agency : Ft. Belvoir, VA	12.500	6.517		-		0.000		-		0.000	-	-	-
Modular Whole Air Collection System	Sub Allot	Air Force Technical Applications Center : Patrick AFB, FL	0.750	0.000		-		-		-		-	-	-	-
Particular Airborne Collection System	Sub Allot	Air Force Technical Applications Center : Patrick AFB, FL	5.271	5.463		3.344		0.743		-		0.743	-	-	-
Global Initiative Information Portal	IA	Department of State : Washington, DC	0.656	-		-		-		-		-	-	-	-
SOCOM Render Safe	Various	Multiple performers : Multiple locations	1.951	-		-		-		-		-	-	-	-
Subtotal			21.128	11.980		3.344		0.743		-		0.743	-	-	-

Management Services (\$ in Millions)				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 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			
Nuclear Testing, Diagnostics, Forensics and Stockpile Stewardship Course	IA	Lawrence Livermore National Laboratory : Livermore, CA	0.300	0.098		-		0.200		-		0.200	-	-	-
IDA - CNT Goals & Approaches	Allot	IDA : Alexandria, VA	-	0.093		-		-		-		-	-	-	-
Travel	MIPR	AFTAC : Washington, DC	-	0.020		-		0.020		-		0.020	-	-	-
Subtotal			0.300	0.211		-		0.220		-		0.220	-	-	-

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / Nuclear and Conventional Physical Security/Countering Nuclear Threats	Project (Number/Name) P040 / National Technical Nuclear Forensics Systems

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



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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Office of the Secretary Of Defense		Date: February 2016
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603161D8Z / <i>Nuclear and Conventional Physical Security/Countering Nuclear Threats</i>	Project (Number/Name) P040 / <i>National Technical Nuclear Forensics Systems</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>DISCREET OCULUS</i>				
DISCREET OCULUS	1	2014	3	2016
<i>Harvester Particulate Airborne Collection System</i>				
Harvester Particulate Airborne Collection System	1	2014	1	2017
<i>Modular Whole Air Collection System</i>				
Modular Whole Air Collection System	1	2014	1	2016