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Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Office of the Secretary Of Defense **Date:** March 2023

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604161D8Z / <i>Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	96.540	5.480	6.482	6.229	-	6.229	14.288	13.700	16.383	16.726	Continuing	Continuing
163: <i>Nuclear and Conventional Physical Security</i>	80.490	5.480	6.482	6.229	-	6.229	5.922	5.153	6.165	6.293	Continuing	Continuing
042: <i>National Technical Nuclear Forensics / System Development & Demonstration (SDD)</i>	16.050	0.000	0.000	0.000	-	0.000	8.366	8.547	10.218	10.433	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Deter Aggression, Defend the Homeland, Provide Nuclear Deterrence, and Build Sustainable and Long-Term Advantage.

Nuclear and Conventional Physical Security/Nuclear Forensics, Resilience, and Survivability addresses the need to defend and deter against weapons of mass destruction 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 and rapid fielding throughout the DoD for an integrated and systemic approach to develop material solutions. Public Law, Presidential, and DoD guidance, and Combatant Command and Service requirements drive the priorities for these programs.

The Physical Security Enterprise and Analysis Group (PSEAG) is responsible for avoiding duplication of effort, ensuring systems integration, and promoting interoperability and sustainability. The material solutions either (a) lead to a Program of Record, (b) become technology insertions into existing programs; or (c) advance to being a certified Commercial/Government off-the-shelf product.

Per National Security Presidential Memorandum 35, the DoD provides the U.S. Government (USG) post-detonation National Technical Nuclear Forensics (NTNF) capability. Per DoD Directive S-2060.04, the Office of the Undersecretary of Defense for Acquisition & Sustainment (OUSD(A&S)) is the office responsible for developing and leading the DoD's NTNF capabilities. The DoD mission to collect and analyze post-detonation nuclear debris is critical ensuring the USG can identify the source of nuclear material and hold those responsible for an attack is critical to our national defense and security. Internal and independent assessments indicate new capabilities are needed to sustain an effective deterrent against an unattributed nuclear attack and meet the challenges of future threats. This PE is the only DoD RDT&E program focused on Advanced Component Development and Prototypes for post-detonation NTNF capabilities.

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

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This appropriation will finance work, including staffing, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct research, development, and test and evaluation efforts.

B. Program Change Summary (\$ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	5.650	6.482	6.521	-	6.521
Current President's Budget	5.480	6.482	6.229	-	6.229
Total Adjustments	-0.170	0.000	-0.292	-	-0.292
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-0.170	-	-0.292	-	-0.292

Change Summary Explanation

FY 2024 decrease is to realign funding to support DoD Headquarters program management, oversight, and other support functions.

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Office of the Secretary Of Defense **Date:** March 2023

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / <i>Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability</i>	Project (Number/Name) 163 / <i>Nuclear and Conventional Physical Security</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
163: <i>Nuclear and Conventional Physical Security</i>	80.490	5.480	6.482	6.229	-	6.229	5.922	5.153	6.165	6.293	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Physical Security Enterprise and Analysis Group (PSEAG) pursues the development of nuclear and conventional physical security materiel solutions in response to the stated needs and requirements of the Combat Commands and Military Services. This program leverages commonalities in physical security requirements in order to closely balance and integrate the needs of users. The PSEAG is responsible for avoiding duplication of effort, ensuring systems integration, and promoting interoperability and sustainability. The materiel solutions either (a) lead to a Program of Record, (b) become technology insertions into existing programs; or (c) advance to being a certified Commercial/Government off-the-shelf product.

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

This appropriation will finance work, including staffing, performed by a government agency or by private individuals or organizations under a contractual or grant arrangement with the government who conduct RDT&E efforts.

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

	FY 2022	FY 2023	FY 2024
Title: Physical Security System Development & Demonstration	5.480	6.482	6.229
Description: Develop physical security components and systems to support valid requirements while eliminating duplication of effort, pursuing the use of government and commercial off-the-shelf products, ensuring systems integration, and promoting interoperability and sustainability.			
FY 2023 Plans:			
- Detect an adversary and assess their intentions by identifying and warning of unauthorized access to a specified area or installation, as well as equipment related to the notification and identification of explosive threats or hazards.			
- Control access to safeguard personnel and their families and to prevent unauthorized access to critical infrastructure and materials to validate and verify individuals entering or already within, a facility.			
- Invest in robust installation and transport security to prevent a weapon of mass destruction attack or the unauthorized access to key assets such as nuclear weapons and special nuclear material.			
- Improve the physical security profile of fixed sites and facilities, as well as critical items while in-transit.			

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<ul style="list-style-type: none"> - Deter an adversary from accessing weapons of mass destruction or gaining unauthorized access to critical assets are at the heart of prevention. - Implement control measures that ensure access is limited to authorized persons is the foundation of physical security to delay or stop unauthorized entry/access to a specified/localized area. - Incorporate decision support systems to help management, operations, and planners make decisions, which may be rapidly changing and not easily specified in advance with a focus on command and control equipment, creation and enhancement of common operating pictures, and the establishment of common architectures / interface standards. <p>FY 2024 Plans:</p> <ul style="list-style-type: none"> - Detect an adversary and assess their intentions by identifying and warning of unauthorized access to a specified area or installation, as well as equipment related to the notification and identification of explosive threats or hazards. - Control access to safeguard personnel and their families and to prevent unauthorized access to critical infrastructure and materials to validate and verify individuals entering or already within, a facility. - Invest in robust installation and transport security to prevent a weapon of mass destruction attack or the unauthorized access to key assets such as nuclear weapons and special nuclear material. - Improve the physical security profile of fixed sites and facilities, as well as critical items while in-transit. - Deter an adversary from accessing weapons of mass destruction or gaining unauthorized access to critical assets are at the heart of prevention. - Implement control measures that ensure access is limited to authorized persons is the foundation of physical security to delay or stop unauthorized entry/access to a specified/localized area. - Incorporate decision support systems to help management, operations, and planners make decisions, which may be rapidly changing and not easily specified in advance with a focus on command and control equipment, creation and enhancement of common operating pictures, and the establishment of common architectures / interface standards. <p>FY 2023 to FY 2024 Increase/Decrease Statement: The FY 2023 to FY 2024 decrease is the result of planned internal program adjustments based on Combatant Command and Military Services needs.</p>			
Accomplishments/Planned Programs Subtotals	5.480	6.482	6.229

C. Other Program Funding Summary (\$ in Millions) N/A
Remarks NA

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Exhibit R-2A, RDT&E Project Justification: PB 2024 Office of the Secretary Of Defense		Date: March 2023
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / <i>Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability</i>	Project (Number/Name) 163 / <i>Nuclear and Conventional Physical Security</i>

D. Acquisition Strategy
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Office of the Secretary Of Defense **Date:** March 2023

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability	Project (Number/Name) 163 / Nuclear and Conventional Physical Security
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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 - Product Development	Various	Various : Various	62.246	-		-		-		-		-	-	-	-
Joint Expeditious Subsurface-threat Sonar Capability	MIPR	Various : Various	-	0.849		4.473		-		-		-	Continuing	Continuing	-
Sonar Navigated Autonomous Grabber	MIPR	Various : Various	-	0.831		1.000		-		-		-	Continuing	Continuing	-
Small Arms Point Defense	MIPR	Various : Various	-	0.750		-		-		-		-	Continuing	Continuing	-
Waterside Defensive System	MIPR	Various : Various	-	1.494		-		-		-		-	Continuing	Continuing	-
Defender - Mobile Situational Awareness Tool	C/Various	Various : Various	-	-		-		1.141		-		1.141	Continuing	Continuing	-
Artificial Intelligence in Support of Installation Operations and Force Protection	C/Various	Various : Various	-	-		-		1.205		-		1.205	Continuing	Continuing	-
Platform for Integrated C3 and Responsive Defense	C/Various	Various : Various	-	-		-		2.249		-		2.249	Continuing	Continuing	-
Subtotal			62.246	3.924		5.473		4.595		-		4.595	Continuing	Continuing	N/A

Remarks
NA

Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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 - Test & Evaluation	Various	Multiple : Multiple	18.244	-		-		-		-		-	Continuing	Continuing	-

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Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability	Project (Number/Name) 163 / Nuclear and Conventional Physical Security
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Test and Evaluation (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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			
Trace Comparative	MIPR	EOD Tech Division : Indian Head, MD	-	0.795		-		-		-		-	Continuing	Continuing	-
Standoff Suicide Bomber Detection Development	MIPR	EOD Tech Division : Indian Head, MD	-	0.761		-		-		-		-	Continuing	Continuing	-
Millimeter Wave Thermal Test & Evaluation	MIPR	EOD Tech Division : Indian Head, MD	-	-		1.009		1.307		-		1.307	Continuing	Continuing	-
Gas Chromatography Mass Spectrometry Systems Test & Evaluation	MIPR	EOD Tech Division : Indian Head, MD	-	-		-		0.327		-		0.327	Continuing	Continuing	-
Subtotal			18.244	1.556		1.009		1.634		-		1.634	Continuing	Continuing	N/A

Remarks
NA

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	80.490	5.480	6.482	6.229	-	6.229	Continuing	Continuing	N/A

Remarks
NA

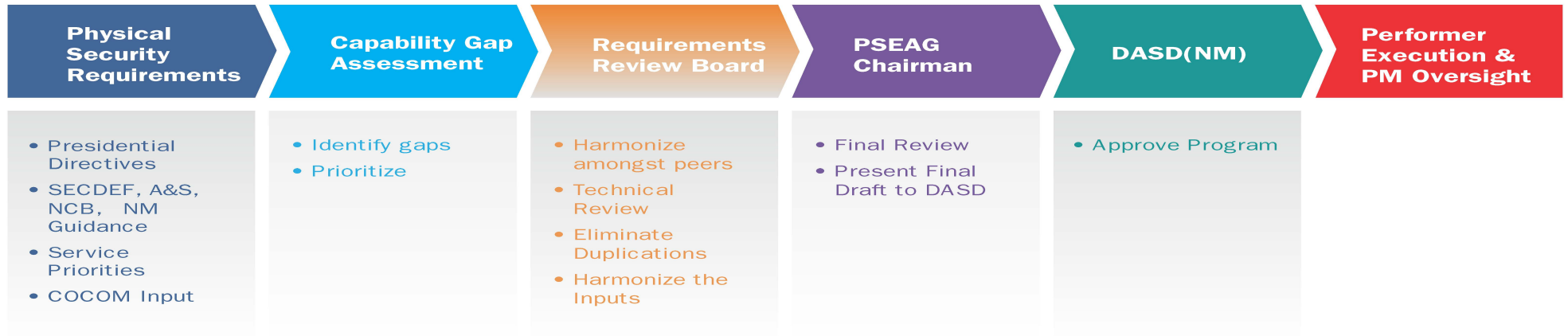
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Exhibit R-4, RDT&E Schedule Profile: PB 2024 Office of the Secretary Of Defense		Date: March 2023
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability	Project (Number/Name) 163 / Nuclear and Conventional Physical Security



PSEAG REQUIREMENTS PROCESS





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

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Office of the Secretary Of Defense		Date: March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Nuclear and Conventional Physical Security R&D</i>				
Various physical security R&D efforts to address Combatant Command and Service Needs	1	2023	4	2028

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Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / <i>Nuclear and Conventional Physical Security, Nuclear Forensics, Resilience, Survivability</i>	Project (Number/Name) 042 / <i>National Technical Nuclear Forensics / System Development & Demonstration (SDD)</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
<i>042: National Technical Nuclear Forensics / System Development & Demonstration (SDD)</i>	16.050	0.000	0.000	0.000	-	0.000	8.366	8.547	10.218	10.433	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note
 Funding transferred from Countering Nuclear Threats (CNT) to National Technical Nuclear Forensics (NTNF), P042. In FY 2018, Departments and Agencies began to shift research and development from NTNF to other mission areas. This resulted in degradation of the DoD (and by default, the U.S. Government's (USG)) ability to execute the nuclear forensics mission and deter adversaries. As the lead for providing the USG post-detonation nuclear forensics capability, the DoD is emphasizing the importance of this mission to ensure success and to be compliant with National Security Presidential Memorandum (NSPM)-35 requirements.

Prior Year funding includes the funding associated with the CNT program.

A. Mission Description and Budget Item Justification
 Per NSPM 35, the DoD provides the USG post-detonation NTNF capability. Per DoDD S-2060.04, OUSD(A&S) is the DoD office responsible for DoD's NTNF capabilities. This program is the only DoD RDT&E program focused on System Development & Demonstration for NTNF capabilities.

Collecting and analyzing post-detonation debris is critical to ensure the USG can identify the source of nuclear material and hold those involved or supporting an attack accountable is critical to our national defense and security. Swift and accurate forensic and attribution (identification) capabilities are vital to supporting the President and Secretary of Defense in developing an appropriate, and timely, national response to a nuclear event and to prevent future attacks. An effective NTNF capability ensures potential adversaries, or those who support them, know that they will be held accountable if they use proxies or other non-traditional delivery of nuclear weapons against the U.S., U.S. interests, or allies. Both internal and independent studies indicate that continued improvement to the USG's NTNF capabilities is needed to sustain a credible deterrent against an attempted or actual nuclear attack.

Additionally, this program sustains perishable U.S. technical expertise at the operational DoD laboratories required to respond to a post-detonation NTNF event. The DoD's laboratory capability in this area is limited by capacity and technical expertise. In FY 2018, Departments and Agencies began to shift research and development from NTNF to other mission areas, which resulted in degradation of the DoD's (and by default, the USG's) ability to execute the nuclear forensics mission and deter adversaries through the attrition of technical experts vital to the response. Sustained support of the DoD's NTNF mission is crucial to prevent attrition of current capabilities and knowledge base, ensure that this critical and unique deterrence capability is not lost, putting the security of the nation and the ability to deter specific kinds of nuclear attack at risk, and meeting a higher standard of timeliness and confidence as directed.

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

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2022	FY 2023	FY 2024
<p>Title: NTNF Capability Development</p> <p>Description: The development of capability to collect and analyze nuclear debris is critical to our national defense and security. Swift and accurate forensic analysis and contribution to USG attribution (identification) processes are vital to supporting the President and Secretary of Defense in developing an appropriate national response to a nuclear event and to prevent future attacks in a timely manner.</p> <p>NTNF investments support development and retention of technical nuclear forensics expertise, improve CONUS and OCONUS collection, improve the fixed laboratory process, improving legacy NTNF capabilities, and supporting operationalization of new capabilities.</p>	0.000	-	-
Accomplishments/Planned Programs Subtotals	0.000	-	-

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

N/A

Remarks

D. Acquisition Strategy

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Office of the Secretary Of Defense **Date:** March 2023

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Product Development (\$ in Millions)				FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 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	Award Date	Cost To Complete	Total Cost	Target Value of Contract
NTNF	TBD	TBD : TBD	-	-		-		-		-		-		Continuing	Continuing	-
CNT	Sub Allot	JPEO CBD : Aberdeen, MD	16.050	-		-		-		-		-		-	-	-
Subtotal			16.050	-		-		-		-		-		Continuing	Continuing	N/A

Remarks
NTNF SDD requirements begin in FY 2025

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.050	-	-	-	-	-	Continuing	Continuing	N/A

Remarks

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Exhibit R-4A, RDT&E Schedule Details: PB 2024 Office of the Secretary Of Defense		Date: March 2023
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
NTNF SDD				
NTNF SDD	4	2021	4	2026