Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Office of the Secretary Of Defense	Date: May 2021
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*

COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	81.685	7.810	7.169	5.682	-	5.682	-	-	-	-	-	-
163: *Nuclear and Conventional Physical Security*	65.635	7.810	7.069	5.682	-	5.682	-	-	-	-	-	-
042: *National Technical Nuclear Forensics / System Development & Demonstration (SDD)*	16.050	0.000	0.100	0.000	-	0.000	-	-	-	-	-	-

Note

Funding transferred from Countering Nuclear Threats (CNT) to National Technical Nuclear Forensics (NTNF), P041. In fiscal year 2018, Departments and Agencies began to shift research and development from NTNF to other mission areas. This resulted in degradation of the Department of Defense's (DoD) (and by default, the U.S. Government's (USG)) already limited ability to effectively and reliably execute the nuclear forensics mission. As the lead for providing the USG's post-detonation nuclear forensics capability, DoD is emphasizing the importance of this mission in deterring adversaries and ensuring success of the USG's post-detonation NTNF mission.

A. Mission Description and Budget Item Justification

Nuclear and Conventional Physical Security/National Technical Nuclear Forensics 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 for National Technical Nuclear Forensics and the development of nuclear and conventional physical security material solutions. Public Law, Presidential and DoD-level guidance, and Combatant Command and Service requirements drive the priorities for these programs.

Funding associated with nuclear and conventional physical security materiel solutions for the Department are broken down into 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 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. The Physical Security Enterprise and Analysis Group (PSEAG) is responsible for avoiding duplication of effort, ensuring systems integration, and promoting interoperability and sustainability.

Per Presidential Policy Directive 42, Annex C, the DoD provides the USG post-detonation NTNF capability. Per DoDD 2060.04, the Office of the Undersecretary of Defense for Acquisition & Sustainment (OUSD(A&S)) is the office responsible for developing and leading DoD's NTNF capabilities. Ensuring the USG can identify the source of nuclear material and hold those responsible for an attack accountable is critical to our national defense and security. Internal and independent assessments indicate new capabilities are needed to sustain an effective deterrent against nuclear attack and meet the challenges of future threats. This PE is the only DoD RDT&E program focused on System Development & Demonstration of post-detonation NTNF capabilities and without proper funding, DoD's ability to meet this critical deterrence need will be significantly degraded.

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Office of the Secretary Of Defense	Date: May 2021
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604161D8Z *I Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*

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 research, development, and test and evaluation efforts.

B. Program Change Summary ($ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	11.276	7.173	6.164	-	6.164
Current President's Budget	7.810	7.169	5.682	-	5.682
Total Adjustments	-3.466	-0.004	-0.482	-	-0.482
• Congressional General Reductions	-	-0.004			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-3.466	-	-0.482	-	-0.482

Change Summary Explanation

The FY 2022 funding request was reduced by $0.302 million to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense			Date: May 2021
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	Project (Number/Name) 163 / *Nuclear and Conventional Physical Security*	

COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
163: *Nuclear and Conventional Physical Security*	65.635	7.810	7.069	5.682	-	5.682	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Physical Security Enterprise & Analysis Program (PSEAP) conducts Technology and Engineering and Manufacturing Development throughout the Department of Defense for an integrated and systemic approach for nuclear and conventional physical security technology and systems. Priorities are driven by Combatant Command and Service requirements. This program is also addressing the Unmanned Systems threat by developing technology solutions that address the entire Kill Chain (Detect, Track, Identify, and Defeat) that are interoperable.

Funding associated with nuclear and conventional physical security materiel solutions for the Department are broken down into 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 material solutions either (a) lead to a Programs of Record; (b) become technology insertions into existing programs; or (c) advance to being a certified Commercial/Government off-the-shelf product. The Physical Security Enterprise and Analysis Group (PSEAG) is responsible for avoiding duplication of effort, ensuring systems integration, and promoting interoperability and sustainability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: Detection and Assessment	3.585	4.069	2.502
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. Accomplishment: The PSEAP and the National Nuclear Security Administration are jointly developing a Portable Intrusion Detection System (PIDS) that addresses similar needs to protect nuclear weapons and special nuclear material. PIDS will provide a stable sensor platform that maintains the integrity of an existing secure perimeter in the event of sensor maintenance or system downtime. These include, but are not limited to, scheduled maintenance and upgrade activities for extended periods of time, or during emergency situations requiring the establishment of a National Defense Area; and mission requirements that dictate deployment of nuclear certified assets to locations that do not meet nuclear security requirements. ***FY 2021 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
• Determine the ability of up to four commercially available handheld backscatter x-ray systems to detection improvised explosive devices, bulk explosives, and weapons. • Expand the test and evaluation of explosive detection equipment to detect trace and bulk explosives through new technology advancements to include vapor detection. • Conduct rapid, onsite evaluations of various commercially available passive/active MMW-based personnel screening systems. ***FY 2022 Plans:*** • Evaluate at least three commercial off-the-shelf systems, with an option of an additional three systems, that claim to detect trace energetic materials and are often employed for Entry Control Point screening. • Develop a differential Short Wave Infrared-based technology for the standoff detection of concealed explosives that is also capable of identifying the concealed explosive threat • Integrate a GOTS or COTS sonar capability in response to emergent waterside security requirements within the INDOPACOM / NORTHCOM areas of responsibility. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The decrease in FY 2022 is the result of planned program changes in OUSD(A&S). The FY 2022 funding request was reduced to account for the availability of prior year execution balances.			
Title: Access Controls	0.270	0.000	0.000
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. Accomplishment: Defense Installation Access Control project enhances the Identity Matching Engine for Security & Analysis used at hundreds of DoD entry control points to compare Personal Identity Verification/Common Access Card holders against the National Crime Information Center and the Interstate Identification Index. Previous work developed a capability that compares DoD registered cardholders against the FBI's Wanted Persons File and against the Terrorist Screening Database. This capability prevents un-cleared people or potential terrorists from entering DoD installations. The updated system identified an individual with warrants for murder and aggravated assault with a deadly weapon trying to get installation access. ***FY 2021 Plans:*** • The Combatant Commands and the Services did not identify any material needs for this Budget Activity/Capability Area. ***FY 2022 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
• The Combatant Commands and the Services did not identify any material needs for this Budget Activity/Capability Area. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** There was no change in funding from FY 2021 to FY 2022.			
Title: Installation and Transport Security ***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. Accomplishment: Joint Active Shooter Protection and Response project will integrate sensors to automatically detect indoor gunshots; provides potential victims, responders and authorized personnel with information to enhance situational awareness; and enable automatic or manual control of the building - inhibiting the shooter - shortening the duration of an active shooter incident. U.S. Military Academy agreed to be used as a test bed for this effort and the results have wide ranging potential to be incorporated into soft or high value facilities. ***FY 2021 Plans:*** • The Combatant Commands and the Services did not identify any material needs for this Budget Activity/Capability Area. ***FY 2022 Plans:*** • Develop a Waterside Defensive System to counter threats in naval ports, above, on, and below the surface. The system will be fully integrated and monitored and controlled from the Installation Defense Operations Center. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The increase of in FY 2022 is the result of planned program changes in OUSD(A&S).	0.000	0.000	1.461
Title: Prevention ***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. Accomplishment: Develop a Stabilized Crew-Served Heavy Machine Gun Mount by reviewing requirements, performing suitability testing, implementing design improvements, and demonstrating a field-able stabilized crew-served heavy machine gun mount for naval applications.	0.000	0.000	1.719

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
FY 2021 Plans: • The Combatant Commands and the Services did not identify any material needs for this Budget Activity/Capability Area. ***FY 2022 Plans:*** • Complete the review requirements, procure, perform suitability testing, implement design improvements, and demonstrate a fieldable stabilized crew-served heavy machine gun mount for naval applications. • Fully develop the prototype Sonar Navigated Autonomous Grabber Unmanned Underwater Vehicle (UUV) for autonomous swimmer/diver and UUV interdiction. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The increase in FY 2022 is the result of planned program changes in OUSD(A&S).			
Title: Storage and Safeguards ***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. Accomplishment: Combatant Commands and Service requirements did not dictate the need for System Development and Demonstration. ***FY 2021 Plans:*** • The Combatant Commands and the Services did not identify any material needs for this Budget Activity/Capability Area. ***FY 2022 Plans:*** • The Combatant Commands and the Services did not identify any material needs for this Budget Activity/Capability Area. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** There was no change in funding from FY 2021 to FY 2022.	0.000	0.000	0.000
Title: Decision Support Systems ***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, projects related to the creation and enhancement of common operating pictures, and the establishment of common architectures / interface standards.	2.955	3.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Accomplishment: Platform for Integrated Command, Control, and Communications and Responsive Defense (PICARD) project is developing the next generation security system using an open fusion annunciator, a secure cloud infrastructure and integration with a mobile Common Operating Picture, to create a cost-effective sensor platform. This capability will eventually replace antiquated security systems that are based on high cost sensor technology with low-cost sensors used in fields like the automotive industry. ***FY 2021 Plans:*** • Complete the initial development of the PICARD project by testing and evaluating in an operationally relevant environment. ***FY 2022 Plans:*** • The Combatant Commands and the Services did not identify any material needs for this Budget Activity/Capability Area. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The decrease in FY 2022 is the result of the completion of the initial development of the PICARD project.			
Title: Analytical Support ***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 Enterprise RDT&E Program. Accomplishment: The Maritime Expeditionary & Transit Security project demonstrated and evaluated how advanced non-lethal weapons technology employed for extended range will enhance and improve response capabilities for the transit protection mission. This project also determined how a flexible and scalable precision fire weapons system capability enhances/augments the current use of crew served weapons to counter fast approaching surface threats during High Value Unit transits. ***FY 2021 Plans:*** • The Combatant Commands and the Services did not identify any material needs for this Budget Activity/Capability Area. ***FY 2022 Plans:*** • The Combatant Commands and the Services did not identify any material needs for this Budget Activity/Capability Area. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** There was no change in funding from FY 2021 to FY 2022.	1.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	7.810	7.069	5.682

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

NA

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Physical Security - Product Development Prior Years	Various	Various : Various	52.256	-		-		-		-		-	-	-	-
Indoor Gunshot Detection System	MIPR	SPAWAR Atlantic : Charleston, SC	0.926	-		-		-		-		-	-	-	-
Trace Explosive Detection System Improvement	MIPR	EOD Tech Division : Indian Head, MD	1.352	-		-		-		-		-	-	-	-
Stabilized Crew-Served Heavy Machine Gun Mount	MIPR	NSWC Crane : Crane, IN	0.329	-		-		-		-		-	-	-	-
JIGSAW - TASS Integration	MIPR	Multiply Performers : Multiple Locations	1.383	-		-		-		-		-	-	-	-
Platform for Integrated C3 and Responsive Defense	MIPR	Air Force Technical Applications : Patrick AFB, Florida	-	3.000		3.000		-		-		-	-	-	-
Joint Expeditious Subsurface-threat Sonar Capability	MIPR	Multiple Performers : Multiple locations	-	-		-		0.849		-		0.849	Continuing	Continuing	-
Sonar Navigated Autonomous Grabber	MIPR	Multiple Performers : Multiple Locations	-	-		-		0.831		-		0.831	Continuing	Continuing	-
Small Arms Point Defense	MIPR	Multiple Performers : Multiple Locations	-	-		-		0.750		-		0.750	Continuing	Continuing	-
Waterside Defensive System	MIPR	Multiple Performers : Multiple Locations	-	-		-		1.526		-		1.526	Continuing	Continuing	-
		Subtotal	56.246	3.000		3.000		3.956		-		3.956	Continuing	Continuing	N/A

Remarks

NA

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Office of the Secretary Of Defense			Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Physical Security - Test & Evaluation Prior Years	Various	Multiple : Multiple	3.600	-		-		-		-		-	-	-	-
PSEAG T&E	MIPR	SPAWAR Atlantic : Charleston, SC	0.896	-		-		-		-		-	-	-	-
Comparative Colorimetric	MIPR	EOD Tech Division : Indian Head, MD	2.087	-		-		-		-		-	-	-	-
Stand-Off Weapon Defeat IPT	MIPR	NSWC Dahlgren Division : Dahlgren Division	1.434	-		-		-		-		-	-	-	-
C-UAS in the Homeland	MIPR	Multiple Performers : Multiple Locations	1.372	-		-		-		-		-	-	-	-
PSEAG Test & Evaluation	MIPR	NIWC Atlantic : Charleston, SC	-	1.225		4.069		-		-		-	-	-	-
Enhancing Biosecurity Surveillance	MIPR	USAMRIID : Fort Detrick, MD	-	0.270		-		-		-		-	-	-	-
Conventional X-ray for EOD Applications T&E	MIPR	EOD Tech Division : Indian Head, MD	-	0.569		-		-		-		-	-	-	-
Handheld Backscatter X-ray T&E	MIPR	EOD Tech Division : Indian Head, MD	-	0.798		-		-		-		-	-	-	-
Bulk Standoff T&E	MIPR	EOD Tech Division : Indian Head, MD	-	0.663		-		-		-		-	-	-	-
Surface Enhanced Raman Spectroscopy T&E	MIPR	EOD Tech Division : Indian Head, MD	-	0.856		-		-		-		-	-	-	-
Millimeter-Wave Onsite Evaluation	MIPR	EOD Tech Division : Indian Head, MD	-	0.429		-		-		-		-	-	-	-
Trace Comparative	MIPR	EOD Tech Division : Indian Head, MD	-	-		-		0.895		-		0.895	Continuing	Continuing	-
Standoff Suicide Bomber Detection Development	MIPR	EOD Tech Division : Indian Head, MD	-	-		-		0.831		-		0.831	Continuing	Continuing	-
		Subtotal	9.389	4.810		4.069		1.726		-		1.726	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Office of the Secretary Of Defense			Date: May 2021
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	Project (Number/Name) 163 / *Nuclear and Conventional Physical Security*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks NA															

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	65.635	7.810		7.069		5.682		-		5.682	Continuing	Continuing	N/A

Remarks
NA

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

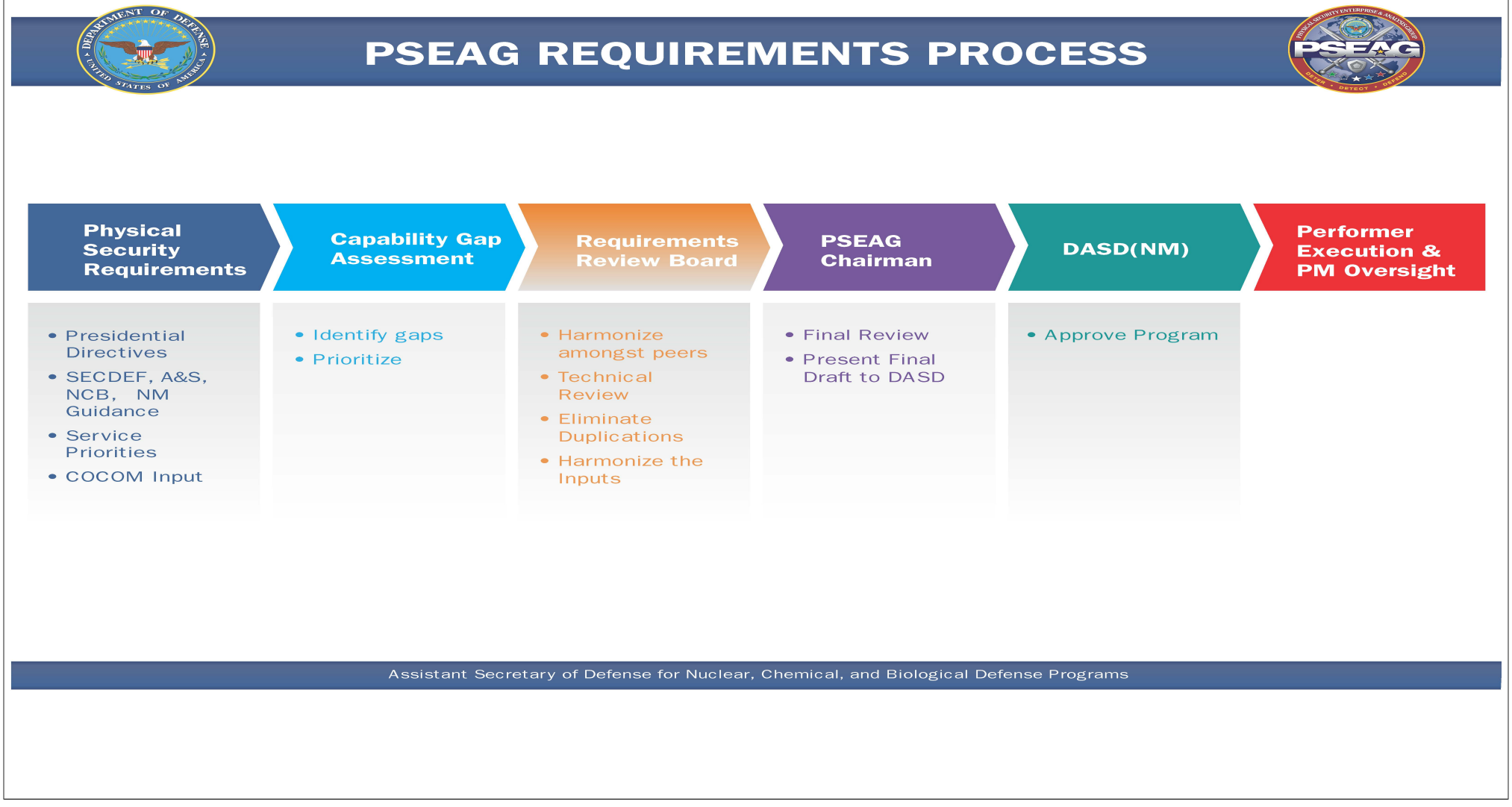

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 163 / *Nuclear and Conventional Physical Security*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Access Control				
Access Control	1	2013	4	2026
Analytical Support				
Analytical Support	1	2013	4	2026
Decision Support				
Decision Support	1	2013	4	2026
Detection & Assessment				
Detection & Assessment	1	2013	4	2026
Installation & Transport Security				
Installation & Transport Security	1	2013	4	2026
Prevention				
Prevention	1	2013	4	2026
Storage & Safeguards				
Storage & Safeguards	1	2013	4	2026

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense			Date: May 2021
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	Project (Number/Name) 042 / *National Technical Nuclear Forensics / System Development & Demonstration (SDD)*	

COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
042: *National Technical Nuclear Forensics / System Development & Demonstration (SDD)*	16.050	0.000	0.100	0.000	-	0.000	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Funding transferred from CNT to NTNF, P041. In fiscal year FY 2018, Departments and Agencies began to shift research and development from NTNF to other mission areas. This resulted in degradation of the DoD's (and by default, the USG's) already limited ability to effectively and reliably execute the nuclear forensics mission. As the lead for providing the U.S. Government's post-detonation nuclear forensics capability, DoD is emphasizing the importance of this mission in deterring adversaries and ensuring success of the USG's post-detonation NTNF mission.

Prior Year, FY 2020, and FY 2021 funding is associated with the CNT program.

A. Mission Description and Budget Item Justification

Per Presidential Policy Directive 42, Annex C, the DoD provides the USG's post-detonation NTNF capability. Per DoDD 2060.04, the 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 development of NTNF capabilities.

Ensuring 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, timely national response to a nuclear event and to prevent future attacks. An effective attribution capability ensures potential adversaries 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 USG 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. 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 DoD's NTNF mission is crucial to not only preventing attrition of current capabilities and knowledge base, but in ensuring 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.

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

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 042 / *National Technical Nuclear Forensics / System Development & Demonstration (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: NTNF Capability Development ***Description:*** The development of capability 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 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. ***FY 2021 Plans:*** There are no System Development & Demonstration requirements until FY 2025. ***FY 2022 Plans:*** There are no System Development & Demonstration requirements until FY 2025. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** N/A	0.000	0.000	0.000
Title: Countering Nuclear Threats ***Description:*** Funding transferred from CNT mission to NTNF, P041. This decision affects Program Elements 0603161D8Z and 0604161D8Z by eliminating the CNT program. NTNF, P041, was added to this Program Element to address System Development & Demonstration requirements. NOTE: Prior Year, FY 2020, and FY 2021 funding is associated with the CNT program. ***FY 2021 Plans:*** Complete the advanced development of the Radiological Detection System and transition to the Procurement ***FY 2022 Plans:*** Funding transferred to NTNF PE 0603161D8Z. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Decrease in funding is associated with the elimination of the CNT program.	0.000	0.100	0.000
Accomplishments/Planned Programs Subtotals	0.000	0.100	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 042 / *National Technical Nuclear Forensics / System Development & Demonstration (SDD)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Office of the Secretary Of Defense			Date: May 2021
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	Project (Number/Name) 042 / *National Technical Nuclear Forensics / System Development & Demonstration (SDD)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NTNF	TBD	TBD : TBD	-	-		-		-		-		-	Continuing	Continuing	-
CNT	Sub Allot	JPEO CBD : Aberdeen, MD	16.050	-		0.100		-		-		-	-	-	-
		Subtotal	16.050	-		0.100		-		-		-	Continuing	Continuing	N/A

Remarks

NTNF SDD requirements begin in FY 2025

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.050	-		0.100		-		-		-	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 042 / *National Technical Nuclear Forensics / System Development & Demonstration (SDD)*

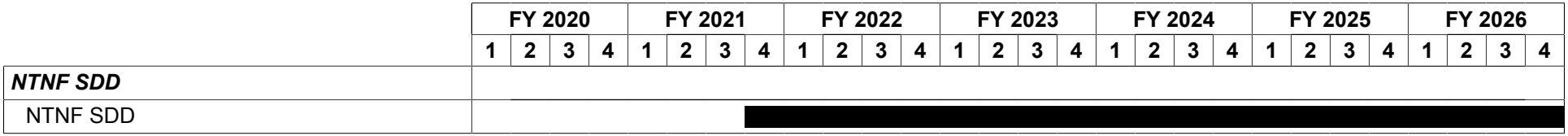

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604161D8Z / *Nuclear and Conventional Physical Security/National Technical Nuclear Forensics*	**Project (Number/Name)** 042 / *National Technical Nuclear Forensics / System Development & Demonstration (SDD)*

Schedule Details

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