Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Chemical and Biological Defense Program	Date: April 2022
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	-	38.475	58.261	68.030	-	68.030	55.189	61.378	56.905	56.308	Continuing	Continuing
MT7: *Mitigate (Op Sys Dev)*	-	0.000	0.000	5.098	-	5.098	3.879	6.747	4.360	3.419	Continuing	Continuing
PT7: *Protect (Op Sys Dev)*	-	0.000	0.000	20.076	-	20.076	15.426	12.029	9.942	8.693	Continuing	Continuing
UN7: *Understand (Op Sys Dev)*	-	0.000	0.000	42.856	-	42.856	35.884	42.602	42.603	44.196	Continuing	Continuing
CA7: *Contamination Avoidance (Op Sys Dev)*	-	14.557	15.051	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	29.608
CM7: *Homeland Defense (Op Sys Dev)*	-	1.276	1.522	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.798
C07: *Collective Protection (Op Sys Dev)*	-	7.950	8.442	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.392
DE7: *Decontamination (Op Sys Dev)*	-	0.633	1.072	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.705
IP7: *Individual Protection (Op Sys Dev)*	-	7.605	11.724	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.329
IS7: *Information Systems (Op Sys Dev)*	-	3.122	15.281	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	18.403
MB7: *Medical Biological Defense (Op Sys Dev)*	-	1.578	3.833	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.411
MC7: *Medical Chemical Defense (Op Sys Dev)*	-	1.754	1.336	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.090

A. Mission Description and Budget Item Justification

This program element (PE) resources Operational System Development across the Mitigate, Protect, and Understand portfolios. Chemical Biological Defense Program (CBDP) investments provide an integrated, layered capability to enable combating weapons of mass destruction (CWMD) missions ranging from combat operations to Department of Defense (DoD) support to domestic incident prevention and response. The Projects in this PE support the upgrade of systems that have been fielded or have received approval for full rate production in order to maintain Joint Force readiness.

Individual Projects include:

- Mitigate (MT7): Technology refresh of fielded Contamination Mitigation (ConMit) systems that will remove and/or detoxify contaminated material without damaging combat equipment, personnel, or the environment.

- Protect (PT7): Efforts to refresh technology of fielded individual and protective equipment that enables the Joint Force to operate in a contaminated chemical, biological, and radiological (CBR) environment with little or no degradation of performance. Technology refresh efforts for fielded collective protection systems that are smaller, lighter, less costly to produce and maintain, and more logistically supportable, enabling mission accomplishment in spaces safe from the effects of CBR contamination.

- Understand (UN7): Technology refresh, modernization and continuous engineering of software applications and information systems to shape and inform the battlespace against CBRN threats. Continued development and testing of CB sensor equipment to maintain system interoperability with emerging information technology and decrease size, weight and power requirements to reduce logistical burden of associated capabilities. Technology refresh of fielded medical diagnostic systems and associated capabilities (e.g., assays) that contribute to the layered medical defenses against biological warfare agent and upgrade of fielded medical nerve agent treatment system that contribute to the layered medical defenses against chemical warfare agent threats facing U.S. Forces in the field.

- Contamination Avoidance (CA7), Homeland Defense (CM7), Collective Protection (C07), Decontamination (DE7), Individual Protection (IP7), Information Systems (IS7), Medical Biological Defense (MB7) and Medical Chemical Defense (MC7) are no longer active FY23 Projects due to budget restructure.

The projects in this PE support operational systems development necessary to maintain operational effectiveness and are therefore correctly placed in Budget Activity 7.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	39.530	58.261	0.000	-	0.000
Current President's Budget	38.475	58.261	68.030	-	68.030
Total Adjustments	-1.055	0.000	68.030	-	68.030
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	0.101	-			
• SBIR/STTR Transfer	-1.156	-			
• Other Adjustments	0.000	-	68.030	-	68.030

Change Summary Explanation

Funding: FY 2021 (+$0.101 Million): Below threshold reprogramming adjustments to balance overall portfolio efforts.
FY 2021 (-$1.156 Million): Transfer of funding to support Small Business Innovative Research/Small Business Technology Transfer efforts.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Chemical and Biological Defense Program	Date: April 2022
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0607384BP *I CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*

FY 2023: Funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding. Funding includes specific increases for Departmental inflation rate adjustments (+$7.303 Million), to modernize or upgrade medical chemical defense countermeasures, individual protection modernization, and medical modernization (+$1.615 Million).

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) MT7 / *Mitigate (Op Sys Dev)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MT7: *Mitigate (Op Sys Dev)*	-	0.000	0.000	5.098	-	5.098	3.879	6.747	4.360	3.419	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Mitigate Operational System Development Project provides the Joint Force continued readiness of fielded personnel and materiel contamination mitigation and chemical agent therapeutic capabilities and provides size, weight and power improvements to reduce logistical burden on the Warfighter.

Efforts included in this Project are:

(1) Improved Nerve Agent Treatment System Centrally Acting (INATS CA), and
(2) Modernization Protection Decontamination (MODPROT DE)

INATS CA will develop the centrally-acting anticholinergic, scopolamine, to increase survivability and decrease morbidity following exposure to toxic nerve agents. When added to currently fielded nerve agent treatments, scopolamine will improve overall medical outcomes and will be available in both a vial for use at definitive care, and in an autoinjector for use in the field. INATS CA includes modernization of Soman Nerve Agent Pretreatment Pyridostigmine (SNAPP; pyridostigmine bromide [PB] tablets). In FY23, INATS CA continues studies on the Food and Drug Administration (FDA)-approved SNAPP, a medical pretreatment against nerve agent poisoning to upgrade its joint service utility and ensure its continued safety and efficacy. Also in FY23, the INATS CA program will submit to the FDA for approval, documents supporting sustained release PB tablets in blister packs. These tablets will provide a single tablet per day dose alternative to the current SNAPP dosing regimen for the pretreatment against soman nerve agent poisoning.

MODPROT DE addresses obsolescence and technical data concerns, beginning with the M26 Joint Services Transportable Decontamination System-Small Scale (JSTDS-SS) through validation and verification of Technical Manual (TM) changes as well as technical data for spare and repair parts; the M12A1 Power Driven Decontamination Apparatus (PDDA) by updating technical references and performing the necessary validation and verification before publishing an updated TM. In FY23, MODPROT DE will continue to update technical data for spares and repair parts for M26 JSTDS-SS Technical Data Package (TDP) and continue to update technical references and validation/verification efforts for M12A1 PDDA TM.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) INATS - CA	-	-	0.346
Description: SNAPP Shelf Life Modernization: Studies required by the FDA and/or users to modernize or upgrade medical chemical defense countermeasures.			
FY 2023 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MT7 / *Mitigate (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Continue SNAPP stability studies. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding remains in MC7. Due to OTA agreement, number of samples required decreased.			
Title: 2) INATS - CA ***Description:*** Pyridostigmine Bromide (PB) Extended Release Tablet Development ***FY 2023 Plans:*** Continue Extended Release Tablet Development. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Program/project funding transferred from another funding line. FY22 Funding ($1.336M) remains in MC7.	-	-	3.664
Title: 3) MODPROT DE ***Description:*** Upgrades, improvements, and modernizations to fielded decontamination systems ***FY 2023 Plans:*** Continue to update technical data for spares and repair parts for M26 Joint Service Transportable Decontamination System - Small Scale (JSTDS-SS) Technical Data Package (TDP). Continue to update technical references and validation/verification efforts for M12A1 Power Driven Decontamination Apparatus (PDDA) Technical Manual (TM). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($1.072M) remains in DE7.	-	-	1.088
Accomplishments/Planned Programs Subtotals	-	-	5.098

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• MC5: *Medical Chemical Defense (SDD)*	52.505	50.362	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	102.867
• MT5: *Mitigate (SDD)*	0.000	0.000	74.225	-	74.225	61.861	68.280	39.819	22.062	Continuing	Continuing
• DE7: *Decontamination (Op Sys Dev)*	0.633	1.072	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.705

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MT7 / *Mitigate (Op Sys Dev)*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• MC7: *Medical Chemical Defense (Op Sys Dev)*	1.754	1.336	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.090
• JD0050: *DECONTAMINATION FAMILY OF SYSTEMS (DFoS)*	11.474	4.166	5.795	-	5.795	8.562	8.673	8.820	18.518	Continuing	Continuing
• PHM040: *IMPROVED NERVE AGENT TREATMENT CENTRALLY ACTING (INATS CA)*	0.000	0.000	0.000	-	0.000	0.000	0.000	31.888	33.051	Continuing	Continuing

Remarks

D. Acquisition Strategy

IMPROVED NERVE AGENT TREATMENT CENTRALLY ACTING (INATS CA)

For scopolamine autoinjector development INATS CA uses contracts and Other Transactional Agreements (OTAs) in which the performer shall be responsible for conducting development and testing activities consistent with current FDA regulations. The contractor shall sponsor the combination product to the FDA and hold all approvals and/or licenses. Upon FDA approval, a follow-on procurement agreement will be used to procure initial operational capability (IOC) / full operational capability (FOC).

The Soman Nerve Agent Pre-Treatment Pyridostigmine (SNAPP) effort under INATS CA is a modernization effort for pyridostigmine bromide (PB) tablet requirements from the joint service users for the FDA approved SNAPP product. The effort uses OTAs for conducting development and testing activities consistent with current FDA regulations.

MODERNIZATION DECONTAMINATION (MODPROT DE)

MODPROT DE leverages mature technology from contractor developed components to address and replace obsolete components of various fielded decontamination systems. Modernization efforts will also use items developed by the Government that have transitioned from lower to higher technology readiness levels that can be inserted into fielded systems. A combination of competitive and sole source contracts to various industry vendors and project orders to various Government activities will be used to adapt previously developed components to modernize systems. Robust component and system level testing will validate both Government and contractor furnished improvements. The improvements will be added into the specific system's updated Technical Data Packages (TDPs) to be used in Engineering Change Proposals (ECPs) and provided to the item managers.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MT7 / *Mitigate (Op Sys Dev)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INATS CA - PB Extended Release	Various	TBD : N/A	0.000	0.000		0.000		2.935	Dec 2022	0.000		2.935	Continuing	Continuing	0.000
INATS CA - Shelf Life Modernization (SNAPP)	C/CPFF	CMC Pharma : Cleveland, OH	0.000	0.000		0.000		0.150	Dec 2022	0.000		0.150	Continuing	Continuing	0.000
MODPROT DE - HW C - M26 Tech Data Package; Modernization Update / M12A1 TM Update	MIPR	Various : Various	0.000	0.000		0.000		0.810	Dec 2022	0.000		0.810	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		3.895		0.000		3.895	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT DE - ES C - IPT, Engineering, Technical, Logistics Support	MIPR	Various : Various	0.000	0.000		0.000		0.205	Dec 2022	0.000		0.205	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		0.205		0.000		0.205	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INATS CA - JPM/JPEO Management Services	Various	Various : Various	0.000	0.000		0.000		0.925	Dec 2022	0.000		0.925	Continuing	Continuing	0.000
MODPROT DE - PM/MS C - Program Management Support	Various	Various : Various	0.000	0.000		0.000		0.073	Dec 2022	0.000		0.073	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		0.998		0.000		0.998	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) MT7 / *Mitigate (Op Sys Dev)*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		5.098		0.000		5.098	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MT7 / *Mitigate (Op Sys Dev)*

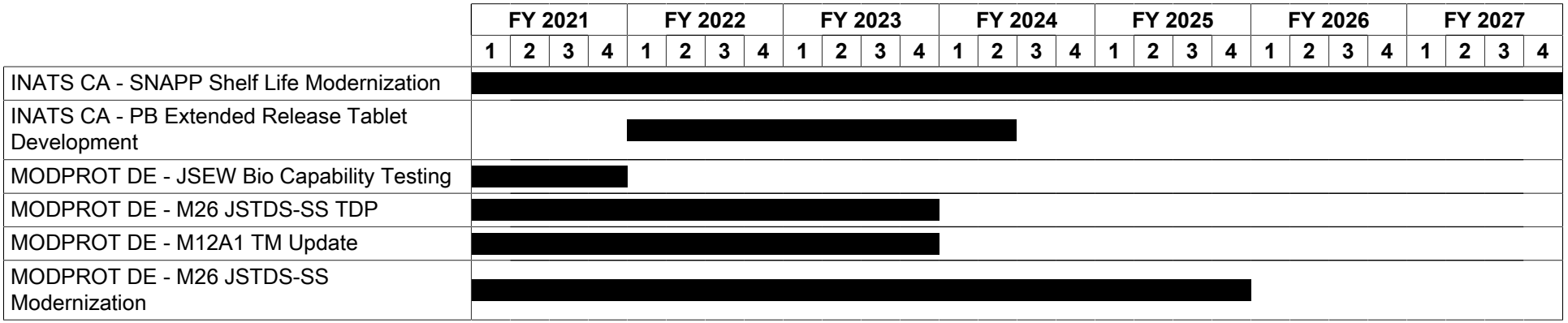

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MT7 / *Mitigate (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
INATS CA - SNAPP Shelf Life Modernization	1	2021	4	2027
INATS CA - PB Extended Release Tablet Development	1	2022	2	2024
MODPROT DE - JSEW Bio Capability Testing	1	2021	4	2021
MODPROT DE - M26 JSTDS-SS TDP	1	2021	4	2023
MODPROT DE - M12A1 TM Update	1	2021	4	2023
MODPROT DE - M26 JSTDS-SS Modernization	1	2021	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program											Date: April 2022	
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*				Project (Number/Name) PT7 / *Protect (Op Sys Dev)*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
PT7: *Protect (Op Sys Dev)*	-	0.000	0.000	20.076	-	20.076	15.426	12.029	9.942	8.693	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Protect Operational System Development Project provides the Joint Force the continued readiness of fielded collective and individual protective capabilities and provides size, weight and power improvements to reduce logistical burden on the Warfighter and Services.

Efforts included in this Project are:

(1) Modernization Protection Collective Protection (MODPROT CP), and
(2) Modernization Protection Individual Protection (MODPROT IP)

MODPROT CP incorporates a value engineering approach to address the need to reduce logistics cost and minimizes supply chain shortages by addressing obsolescence issues to the Department of Defense (DoD) /Joint Services fielded chemical, biological, and radiological (CBR) protection portfolio for mobile, transportable, fixed facility and shipboard collective protection (CP) systems without the high cost of requiring a new program. The obsolescence of critical equipment, if not modernized, will continue to face significantly increased cost and long lead times making the equipment unaffordable and unprocurable to meet major weapon system program's requirements and schedules. MODPROT CP modernizes decades old collective protection equipment reducing costs, shortening lead times, and updating key components to extend service life and ensure affordable and procurable to warfighters. In FY23, MODPROT CP will continue redesign of M49 gas filters, continue M48A1 Filter Redesign, continue CP Modernization for Ships and Buildings and complete system lab testing and system design packages for platform installation, and continue conducting collective protection system filter surveillance testing to improve system sustainment.

MODPROT IP addresses obsolescence issues with Individual Protective (IP) equipment and the need to modernize fielded IP with capabilities to meet or exceed the Services requirements. MODPROT IP will also conduct modernization efforts and reverse engineering of maintenance and repair procedures for the Joint Services Mask Leakage Tester (JSMLT). MODPROT IP will also provide mask and filter system upgrades and modernization of fielded protection systems to enhance respiratory and ocular protection resulting in an increased lethality of fighter aircraft by mitigating risk due to operationally unsuitable aircrew CBRN masks. Modernization efforts will include technical manual updates and a Logistics Demonstration for an updated, lightweight version of the Joint Protective Aircrew Ensemble (JPACE). Testing and analysis with aircraft will fully validate and refine new Tactics, Techniques and Procedures (TTPs) that allow aircrews to operate without restrictive CBRN protective equipment by determining time and techniques required to reduce cockpit hazards to acceptable levels by flushing with clean air. The impact of funding these programs will address modernization and obsolescence across the DoD IP portfolio to increase readiness, sustainability, reliability, and affordability of these systems. MODPROT IP incorporates a value engineering approach to address the need to reduce logistics cost and solve obsolescence issues to the DoD /Joint services fielded CBR protection portfolio for individual protective equipment and test equipment systems. In FY23, MODPROT IP will continue modernization of the Joint Mask Leakage Tester (JSMLT), continue Fixed Wing Aircraft/Aircrew PPE optimization effort for multiple airframes, finalize Second Generation Filter Engineering Change Proposal (ECP), and initiate Third Generation Filter Prototype Developmental Testing (DT).

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** PT7 / *Protect (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) MODPROT CP ***Description:*** Upgrades, improvements, and modernizations to fielded collective protection (CP) systems ***FY 2023 Plans:*** Continue redesign of M49 gas filters. Continue M48A1 Filter Redesign. Continue Collective Protection Modernization for Ships and Buildings and complete system lab testing and system design packages for platform installation. Continue conducting collective protection system filter surveillance testing to improve system sustainment. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($8.442M) remains in CO7.	-	-	10.088
Title: 2) MODPROT IP ***Description:*** Upgrades, improvements, and modernizations to fielded individual protection (IP) systems ***FY 2023 Plans:*** Continue modernization of the Joint Mask Leakage Tester (JSMLT). Continue Fixed Wing Aircraft/Aircrew PPE optimization effort for multiple airframes. Finalize Second Generation Filter Engineering Change Proposal (ECP). Initiate Third Generation Filter Prototype Developmental Testing (DT). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($8.327M) remains in IP7.	-	-	9.988
Accomplishments/Planned Programs Subtotals	-	-	20.076

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• CO7: *Collective Protection (Op Sys Dev)*	7.950	8.442	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.392
• IP7: *Individual Protection (Op Sys Dev)*	7.605	11.724	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.329
• PHM036: *MODERNIZATION PROTECTION COLLECTIVE PROTECTION (MODPROT CP)*	0.000	1.385	1.385	-	1.385	0.300	0.000	0.000	0.000	0.000	3.070

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** PT7 / *Protect (Op Sys Dev)*

D. Acquisition Strategy

MODERNIZATION PROTECTION COLLECTIVE PROTECTION (MODPROT CP)

MODPROT CP leverages mature technology from contractor developed components to address and replace obsolete components of various fielded collective protection systems. Modernization efforts will also use items developed by the Government that have transitioned from lower to higher technology readiness levels that can be inserted into fielded systems. A combination of competitive and sole source contracts to various industry vendors and project orders to various Government activities will be used to adapt previously developed components to modernize systems. Robust component and system level testing to meet applicable military standards will validate both Government and contractor furnished improvements. The improvements will be added into the specific systems' updated Technical Data Packages (TDPs) to be used in Engineering Change Proposals (ECPs) and provided to the item managers.

MODERNIZATION PROTECTION INDIVIDUAL PROTECTION (MODPROT IP)

MODPROT IP leverages mature technology from contractor developed components to address and replace obsolete components of various fielded individual protection systems. Modernization efforts will also use items developed by the Government that have transitioned from lower to higher technology readiness levels that can be inserted into fielded systems. A combination of competitive and sole source contracts to various industry vendors and project orders to various Government activities will be used to adapt previously developed components to modernize systems. Robust component and system level testing will validate both Government and contractor furnished improvements. The improvements will be added into the specific system's updated TDP to be used in ECPs and provided to the item managers.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** PT7 / *Protect (Op Sys Dev)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT CP - HW C - Collective Protection Modernization for Ships	Various	Various : Various	0.000	0.000		0.000		6.604	Dec 2022	0.000		6.604	Continuing	Continuing	0.000
MODPROT CP - HW C - Filter Redesign, Filter Life Extension Residual Life Indicator (RLI)	MIPR	Various : Various	0.000	0.000		0.000		0.721	Dec 2022	0.000		0.721	Continuing	Continuing	0.000
MODPROT IP - HW C - Filter Prototypes & JSMLT Modernization	Various	Various : Various	0.000	0.000		0.000		3.732	Dec 2022	0.000		3.732	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		11.057		0.000		11.057	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT CP - ES C - IPT, Technical, Engineering and Logistics Support	MIPR	Various : Various	0.000	0.000		0.000		0.549	Dec 2022	0.000		0.549	Continuing	Continuing	0.000
MODPROT IP - ES C - IPT, Engineering, Technical, Logistics Support	MIPR	Various : Various	0.000	0.000		0.000		0.545	Dec 2022	0.000		0.545	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		1.094		0.000		1.094	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT CP - DTE C - CP Modernization Testing	Various	Various : Various	0.000	0.000		0.000		1.465	Dec 2022	0.000		1.465	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** PT7 / *Protect (Op Sys Dev)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT IP - DTE C - Fixed Wing Aircraft/Aircrew PPE Optimization Effort	MIPR	Various : Various	0.000	0.000		0.000		3.200	Dec 2022	0.000		3.200	Continuing	Continuing	0.000
MODPROT IP - DTE C - Filter Prototype Testing	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.770	Dec 2022	0.000		1.770	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		6.435		0.000		6.435	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT CP - PM/MS C - Program Management Support	MIPR	Various : Various	0.000	0.000		0.000		0.749	Dec 2022	0.000		0.749	Continuing	Continuing	0.000
MODPROT IP - PM/MS C - Program Management Support	MIPR	Various : Various	0.000	0.000		0.000		0.741	Dec 2022	0.000		0.741	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		1.490		0.000		1.490	Continuing	Continuing	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		20.076		0.000		20.076	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** PT7 / *Protect (Op Sys Dev)*

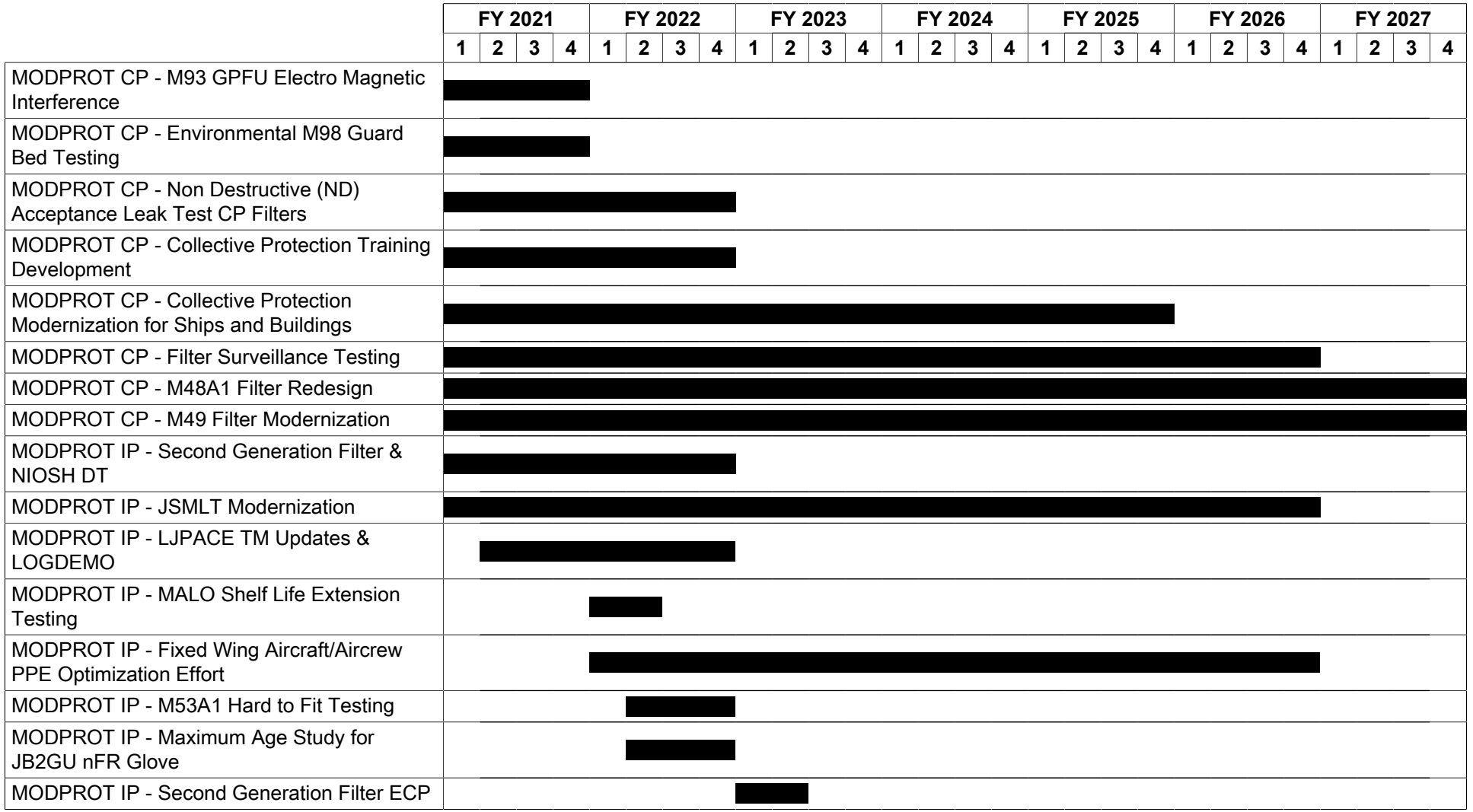

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** PT7 / *Protect (Op Sys Dev)*

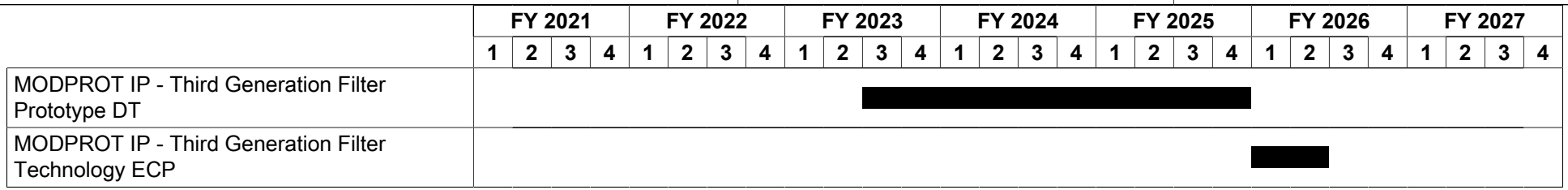

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** PT7 / *Protect (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MODPROT CP - M93 GPFU Electro Magnetic Interference	1	2021	4	2021
MODPROT CP - Environmental M98 Guard Bed Testing	1	2021	4	2021
MODPROT CP - Non Destructive (ND) Acceptance Leak Test CP Filters	1	2021	4	2022
MODPROT CP - Collective Protection Training Development	1	2021	4	2022
MODPROT CP - Collective Protection Modernization for Ships and Buildings	1	2021	4	2025
MODPROT CP - Filter Surveillance Testing	1	2021	4	2026
MODPROT CP - M48A1 Filter Redesign	1	2021	4	2027
MODPROT CP - M49 Filter Modernization	1	2021	4	2027
MODPROT IP - Second Generation Filter & NIOSH DT	1	2021	4	2022
MODPROT IP - JSMLT Modernization	1	2021	4	2026
MODPROT IP - LJPACE TM Updates & LOGDEMO	2	2021	4	2022
MODPROT IP - MALO Shelf Life Extension Testing	1	2022	2	2022
MODPROT IP - Fixed Wing Aircraft/Aircrew PPE Optimization Effort	1	2022	4	2026
MODPROT IP - M53A1 Hard to Fit Testing	2	2022	4	2022
MODPROT IP - Maximum Age Study for JB2GU nFR Glove	2	2022	4	2022
MODPROT IP - Second Generation Filter ECP	1	2023	2	2023
MODPROT IP - Third Generation Filter Prototype DT	3	2023	4	2025
MODPROT IP - Third Generation Filter Technology ECP	1	2026	2	2026

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program											Date: April 2022	
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*				Project (Number/Name) UN7 / *Understand (Op Sys Dev)*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
UN7: *Understand (Op Sys Dev)*	-	0.000	0.000	42.856	-	42.856	35.884	42.602	42.603	44.196	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Understand Operational System Development Project provides the Joint Force continued readiness of fielded sensor, information technology and medical diagnostic capabilities and provides size, weight and power improvements to reduce logistical burden on the Warfighter and Services.

Efforts included in this Project are:

(1) Enhanced Maritime Biological Detection (EMBD),
(2) Modernization Chemical Biological Radiological Nuclear Information Systems (MOD CBRN IS),
(3) Modernization Medical (MOD MED),
(4) Modernization Sensors (MOD SEN),
(5) Reactive Chemistry Orthogonal Surface and Environmental Threat Ticket Array (ROSETTA),
(6) Special Purpose Unit Rapid Capability Development and Deployment (SPU RCDD), and
(7) Weapons of Mass Destruction - Civil Support Team (WMD CST)

EMBD undertakes engineering efforts to combat Diminishing Manufacturing Sources and Material Shortages (DMSMS) and maintain a stable production line. Specific efforts include a new External Controller Subsystem (ECS) in FY22 and flash memory in the Rapid Agent Aerosol Detector (RAAD) in FY23. EMBD also anticipates a major software development effort to upgrade fielding systems as software changes occur.

MOD CBRN IS provides for the management CBRN IS, Joint Effects Model (JEM), Joint Warning and Reporting Network (JWARN) and the Software Support Activity (SSA) under one family of systems. MOD CBRN IS provides for the continuous engineering and developmental efforts to modernize and conduct post production and deployment support to fielded CBRN software information systems and capabilities. This project supports software applications and information systems that help shape and inform the battlespace against CBRN threats. MOD CBRN IS encompasses the processes, procedures, people, material and information required to support and modernize fielded CBRN information systems and applications. In FY23, the MOD CBRN IS program activities include: continuous engineering including software code updates and modernization to correct deficiencies, comply with Joint and Service command and control (C2) system architectural changes, cybersecurity, test and evaluation, configuration management, software redistribution, documentation, and training.

MOD MED supports improvements to fielded systems and supports post-approval Food and Drug Administration (FDA) requirements for devices and combination products. Under MOD MED, program efforts include FDA required postmarketing commitments and requirements for combination products (AUTOINJ) and system hardware and software upgrades for fielded Next Generation Diagnostics System (NGDS) (both NGDS 1 and NGDS 2 Man Portable Diagnostics System (MPDS)) that are required to maintain the capability for CBR threat and infectious disease identification and FDA-cleared diagnostics to inform individual patient treatment and CBR

situational awareness and disease surveillance. In FY23, funding initiates development of bacterial versus viral (B vs. V) assay and Flexible Cartridge (FlexCart). The B vs. V assay detects host responses and viral pathogens. The FlexCart effort enables the DoD to address emerging threats using Cepheid-configured cartridges.

MOD SEN addresses obsolescence of critical equipment and functionality issues for the Services by establishing a modernization plan to integrate and incorporate advancements in technology for the Analytical Laboratory System Modification (ALS MOD), Common Analytical Laboratory System (CALS) Field Confirmatory Analytical Capability Set (FC ACS), CALS Theater Validation Integrated System (TV IS) and CBRN Dismounted Reconnaissance System (DRS). In FY23, MOD SEN supports the evaluation of components for technical refreshment of the CBRN DRS, CALS and ALS MOD.

ROSETTA is a modernization effort to provide the General Forces a low-cost, easy to use surface and/or vapor hazard detection ticket for a wide range of chemical warfare agents (CWAs) and non-traditional agents (NTAs). These highly-selective, multiplexed array tickets will enable accurate hazard identification in the presence of common battlefield interferents at the tactical-level. ROSETTA is based on colorimetric technology and will be eye-readable and has potential for integration onto unmanned platforms especially micro-sized unmanned aerial sensors. In addition, the ROSETTA tickets will provide improved hazard detection performance with reduced false alarm rate, potential for increased number of chemicals detected, reduced detection time especially for compounds of interest (CWAs, pharmaceutical based agents (PBAs), NTAs and toxic industrial chemicals (TICs)), and potential for integration onto unmanned platforms especially micro-sized unmanned aerial sensors. In FY23, ROSETTA will continue contract actions with down select of vendors.

SPU RCDD facilitates Joint Special Operations Command (JSOC) rapid response requirements to near-term and emergent CB defensive capabilities. This includes select elements from across the Special Operations Force (SOF) Enterprise such as Combatant Commanders Response Forces (CRFs) and other Joint Force enabling units such as the 20th Chemical, Biological, Radiological, Nuclear and Explosives Command. SPU RCDD mitigates risk across the Chemical Biological Defense Program (CBDP) by creating a portfolio of operationally-relevant CB capabilities that can be quickly transitioned in response to the articulated, emergent capability needs of the geographic combatant commanders. These objectives are met by the early transitioning of promising science and technologies (S&T); the focused conduct of combat evaluations and mission-oriented operational assessments to assess technological and mission suitability; and the active leveraging of existing commercial-off-the-shelf (COTS) and government-off-the-shelf (GOTS) products along with novel redesign approaches to optimize existing solutions to new challenges supported by "buy-try-decide-acquire" acquisition strategies. SPU RCDD initiates efforts such as respiratory breathing systems, biological identification, unmanned aerial and ground platform sensor integration, development of enhanced and augmented reality systems, and modernization of protective CB ensembles that have gone through requirements validation, and continues product enhancement development and technology upgrades on currently fielded SOF equipment to counter emerging threats, conduct limited user evaluations and operational assessment. In FY23, SPU RCDD will continue the Modular Self Contained Breathing Apparatus (M-SCBA) and Enhanced Warfighter Augmented Training (EWAT) product efforts.

WMD CST supports the fielded system upgrade and ongoing assessment and acquisition of COTS and GOTS analytical detection, protection, decontamination and sampling equipment for survey in order to expand/enhance the operational capabilities of the (57) WMD CST Teams. Program efforts support upgrades of key components of the WMD CST Program that have become obsolete, or are no longer being supported by the manufacturer. In FY23, the WMD CST program continues system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) EMBD ***Description:*** Product Development, test and evaluation (T&E), and Management ***FY 2023 Plans:*** Continue obsolescence support to include production efforts, testing and verification efforts. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($1.615 Million) remains in CA7. Minor change due to routine program adjustments from FY22 to FY23.	-	-	1.748
Title: 2) MOD CBRN IS ***Description:*** CBRN Information Systems Modernization ***FY 2023 Plans:*** Perform management, preplanned product improvements and continuous engineering efforts to modernize currently fielded capabilities of the Joint Effects Model (JEM), Joint Warning and Reporting Network (JWARN) and CBRN IS hosted on cloud and Joint Service Command and Control (C2) systems. Update host architectures, operating systems, cyber security requirements and North Atlantic Treaty Organization (NATO) standards in order to maintain interoperability, efficiency and functionality and compliance. Continue Government developmental and operational testing on software updates and modernization efforts. Provide program/financial management, costing, contracting, scheduling and acquisition oversight. Provide product support for software redeployment and training to operational forces. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($15.281 Million) remains in IS7.	-	-	18.995
Title: 3) MOD MED ***Description:*** Food and Drug Administration (FDA) required Post-Marketing commitments and requirements for combination products (AUTOINJ) and system hardware and software upgrades for fielded Next Generation Diagnostics System (NGDS) (both NGDS 1 and NGDS 2 Man Portable Diagnostics System (MPDS)) ***FY 2023 Plans:*** Support Army, Office of the Surgeon General (OTSG) - Sponsored regulatory activities for legacy autoinjectors. Initiate autoinjector FDA Post-Marketing Commitments. Provide NGDS 1 obsolescence management, including annual cyber security	-	-	5.881

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
updates and management of hardware and software configurations. Initiate NGDS 2 MPDS system upgrades and support through development of FlexCart and Bacterial versus Viral Assays. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($3.833M) remains in MB7.			
Title: 4) MOD SEN ***Description:*** Sensors Modernization ***FY 2023 Plans:*** Complete evaluation of improved and integrated sensors and personal protective equipment (PPE) for CBRN Dismounted Reconnaissance System (DRS), identifying new electrochemiluminescence (ECL) technology to refresh CBRN DRS, Common Analytical Laboratory System (CALS) and Analytical Laboratory System (ALS) Modification (MOD). Initiate evaluation of Liquid Chromatography Mass Spectrometry (LCMS) technology and assay development to refresh ALS. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($10.391M) remains in CA7. Decrease due to fact of life change in the program/project. CBRN DRS modernization activity completes in FY23. Funding required to complete that activity in FY23 and continues to maintain obsolescence management of CALS and CBRN DRS.	-	-	6.379
Title: 5) ROSETTA ***Description:*** Product Development, Engineering Design & Testing ***FY 2023 Plans:*** Continue contract efforts and conduct contractor testing for down select. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($3.045 Million) remains in CA7. Funding increases due to continuation of modernization efforts.	-	-	4.889
Title: 6) SPU RCDD ***Description:*** The Modular Self Contained Breathing Apparatus (M-SCBA) project will replace the three different SCBA systems currently being used by the customer with a modular system that can be configured to meet their three (3) specific mission profiles. The current SCBA systems are made by three different manufactures which creates a logistical burden. The Enhanced Warfighter Augmented Training (EWAT) project will allow the Warfighter to interact with specific CBRN equipment through an	-	-	1.463

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
actual device or with a created 3D version of that device to perform maintenance as well as to load and analyze CB samples using pre-positioned training scenarios. ***FY 2023 Plans:*** Initiate product enhancement, development, and technology upgrades on currently fielded equipment to counter emerging threats, conduct limited user evaluations and operational assessments, and provide program management support. Continue the M-SCBA and EWAT product enhancement, development, and technology upgrades, conduct limited user evaluation, and operational assessments, and provide program management support. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($3.397 Million) remains in IP7. Decrease due to fact of life change in the program/project.			
Title: 7) WMD CST ***Description:*** System Upgrade and Support ***FY 2023 Plans:*** Continue system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system. Continue the detailed planning, conduct, support, data reduction, and reports from such testing, as well as hardware items that are consumed or planned to be consumed in the conduct of such operations. Conduct logistics engineering and integrated logistics support (ILS) management (e.g., maintenance support, facilities, personnel, training, testing, and activation of the system). Initiate start of Phase III unmanned aerial sensors (UAS) testing and larger scale Decon effluent testing. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred from another Project due to budget restructure. FY22 funding ($1.522 Million) remains in CM7. Funding increase due to start of Phase III UAS testing and the larger scale Decon effluent testing.	-	-	3.501
Accomplishments/Planned Programs Subtotals	-	-	42.856

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• CA4: *Contamination Avoidance (ACD&P)*	9.367	32.923	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	42.290
• IS4: *Information Systems (ACD&P)*	13.414	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.414

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• CA5: *Contamination Avoidance (SDD)*	129.914	82.295	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	212.209
• IP5: *Individual Protection (SDD)*	17.129	18.941	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	36.070
• IS5: *Information Systems (SDD)*	5.810	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.810
• MB5: *Medical Biological Defense (SDD)*	117.157	137.348	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	254.505
• MC5: *Medical Chemical Defense (SDD)*	52.505	50.362	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	102.867
• MT5: *Mitigate (SDD)*	0.000	0.000	74.225	-	74.225	61.861	68.280	39.819	22.062	Continuing	Continuing
• UN5: *Understand (SDD)*	0.000	0.000	127.671	-	127.671	101.933	98.742	98.122	72.699	Continuing	Continuing
• CA7: *Contamination Avoidance (Op Sys Dev)*	14.557	15.051	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	29.608
• CM7: *Homeland Defense (Op Sys Dev)*	1.276	1.522	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.798
• IP7: *Individual Protection (Op Sys Dev)*	7.605	11.724	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.329
• IS7: *Information Systems (Op Sys Dev)*	3.122	15.281	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	18.403
• MB7: *Medical Biological Defense (Op Sys Dev)*	1.578	3.833	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.411
• JS0005: *COMMON ANALYTICAL LABORATORY SYSTEM (CALS)*	42.773	48.258	66.765	-	66.765	28.382	0.000	0.000	0.000	0.000	186.178
• JS5230: *MODERNIZATION CBRN INFORMATION SYSTEMS (MOD CBRN IS)*	0.074	0.611	0.656	-	0.656	0.329	0.345	0.396	0.000	0.000	2.411
• MC0101: *CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)*	52.393	21.611	47.324	-	47.324	59.433	64.556	37.802	23.292	Continuing	Continuing
• PHM018: *SPU RAPID CAPABILITY DEVELOPMENT AND DEMO (SPU RCDD)*	8.808	6.946	13.739	-	13.739	5.973	5.974	5.980	5.980	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• SA0003: *ENHANCED MARITIME BIOLOGICAL DETECTION (EMBD)*	13.562	21.473	21.472	-	21.472	21.899	21.203	26.500	2.240	Continuing	Continuing
• SA0006: *CBRN INFORMATION SYSTEMS (CBRN IS)*	0.512	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.512
• SA0025: *ANALYTICAL LABORATORY SYSTEM MODIFICATION (ALS MOD)*	19.002	1.056	3.894	-	3.894	4.256	4.806	5.088	9.137	Continuing	Continuing
• SA0044: *NEXT GEN DIAG 2 MAN PORTABLE DIAGNOSTIC SYSTEM (NGDS 2 MPDS)*	0.000	4.624	3.126	-	3.126	4.915	5.374	3.006	0.538	Continuing	Continuing

Remarks

D. Acquisition Strategy

ENHANCED MARITIME BIOLOGICAL DETECTION (EMBD)

The EMBD program uses a streamlined acquisition strategy and awarded a Full Rate Production (FRP) contract in 1QFY22 with options for production of EMBD kits and Obsolescence Support in Production (OSIP) to resolve diminishing sources and obsolescence issues. The FY22 OSIP Option will specifically address obsolescence problems with the External Controller Subsystem (ECS) which is used to remotely control the Joint Biological Point Detection System (JBPDS) / EMBD. The FY23 OSIP Option will address major obsolescence problems identified by the prime contractor that affect a stable production line. As portions of the ECS are no longer procurable, the contractor will identify and qualify a new hardware that both supports EMBD requirements for future upgradability and is also backwards compatible with previously fielded units.

MODERNIZATION CBRN INFORMATION SYSTEMS (MOD CBRN IS)

MOD CBRN IS combines CBRN IS, Joint Effects Model (JEM), Joint Warning and Reporting Network(JWARN) and the Software Support Activity under one portfolio. The acquisition strategy utilizes a managed portfolio approach to align multiple capabilities in support of modernization of CBRN Information Systems. MOD CBRN IS leverages the concepts of CBRN Hazard Awareness and Understanding and the DISA milCloud Enterprise Services to integrate current CBRN capabilities and intelligence services, applications, and systems to provide increased situational awareness and decision support to commanders for CBRN defense. This strategy provides an integration platform and supports the implementation of CSC2 and other emerging technologies from advanced technology demonstrations (ATD) and experimental capability demonstrations (ECD). MOD CBRN IS provides for the continuous engineering and modernization of fielded information systems for JEM and JWARN and Next Generation hazard prediction, warning and reporting, and CBRN decision support tool applications. MOD CBRN IS utilizes the Agile software

development and IT Box to provide for the continuous spiral development, and fielding of modular capability packages. In FY23 MOD CBRN IS will transition from IS7 to UN7.

MODERNIZATION MEDICAL (MOD MED)

MOD MED, for NGDS will ensure system upgrades for both hardware and software track to latest updates, including cybersecurity, for the commercial devices from the original equipment manufacturer. MOD MED will also fund development of additional assays (i.e. tests), for fielded systems, to address emerging biological threats and diseases. For NGDS 1, an existing Indefinite Delivery/Indefinite Quantity (IDIQ) Delivery Order contract will be utilized for any required system upgrades. For NGDS 2 MPDS, an Other Transaction Authority (OTA) Project Agreement (PA) is planned, separate from the OTA PA utilized for Technology Maturation/Risk Reduction (TMRR) and Engineering and Manufacturing Development (EMD) phases of advanced development, to conduct system upgrades and assay development.

MOD MED, for AUTOINJ will ensure postmarketing commitments and requirements are anticipated as a result of the FDA approval and will be the responsibility of the performer and the government. AUTOINJ uses contracts and Other Transactional Agreements (OTAs) in which the performer shall be responsible for conducting post-approval FDA requirements.

MODERNIZATION SENSORS (MOD SEN)

MOD SEN program uses a COTS/GOTS non-developmental item (NDI) single step acquisition approach to a full capability. This strategy employs an NDI acquisition concept to establish a simplified management framework to translate mission needs and emerging technology capabilities into a stable, affordable, well managed acquisition program. Current efforts focus on supporting CALS TV-IS, FC-ACS, ALS MOD, and CBRN DRS PoR's through maintaining baseline capabilities with obsolescence management, technology insertions, and enhancements based on changes in requirements. Additionally, in order to meet the demands of the NDS to Counter Weapons of Mass Destruction, units equipped with the systems must be able to both assess and exploit CBRN hazards. ODASD (CBD) goals to modernize the Joint Force to combat advancing threats and current capability gaps in sensitive site exploitation capability require a system modernization strategy for each system.

REACTIVE CHEMISTRY ORTHOGONAL SURFACE AND ENVIRONMENTAL THREAT TICKET ARRAY (ROSETTA)

ROSETTA will use a streamlined approach to rapidly field multiple components of the modernization of the M256A2 kit. This approach is based on technology that will transition from Science and Technology Efforts and/or commercial off the shelf (COTS) products to the M256 kit. These efforts will utilize multiple contract vehicles including Countering Weapons of Mass Destruction (CWMD) Other Transactional Authority (OTA) and Joint Enterprise- Research, Development, Acquisition, Production/Procurement (JERDAP) in order to streamline the acquisition of the products. The ROSETTA funding will complete the acquisition of the M8 component to the M256 kit and will support the acquisition of a PBA ticket, the M256 vapor unmasking tool, and the other NTAs and TICs. These products will be transitioned to TACOM for production.

SPU RAPID CAPABILITY DEVELOPMENT AND DEPLOYMENT (SPU RCDD)

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

The SPU RCDD overall acquisition strategy allows for rapid prototyping and testing of mission critical capabilities needed to enhance mission success, and will use technical and functional evaluations of currently-fielded items to introduce and incorporate operationally-relevant system developments. This will be accomplished through competitive contracting vehicles and by awarding agreements under the Countering Weapons of Mass Destruction Other Transaction Authority (CWMD OTA) for the development of prototype test assets. The OTA consists of a consortium of all potential industry, research institutions, and non-traditional government that could be potential solvers for the program, and will be used to procure test prototypes and test articles of possible solutions. Procurement will be through either the OTAs, a Small Business Innovative Research contract, or a more traditional contracting vehicle.

WMD - CIVIL SUPPORT TEAMS (WMD CST)

The Weapons of Mass Destruction Civil Support Team Program (WMD-CST) is a COTS based program that supports the evaluation of advancements in CBRN commercial off the shelf (COTS)/government-off-the-shelf (GOTS) equipment against the current technology baseline of equipment fielded to the (57) WMD CST Teams, this is to address analytical equipment obsolescence. As such, the program establishes a time phased modernization plan to integrate and incorporate proven advancements in commercially available technology into the CST operating mission set based on highest priority capability requirements and availability of resources.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - HW SB - Obsolescence Support in Production	C/CPIF	Various : Various	0.000	0.000		0.000		1.057	Dec 2022	0.000		1.057	Continuing	Continuing	0.000
MOD CBRN IS - SW S - Modernization	Various	Various : Various	0.000	0.000		0.000		13.118	Dec 2022	0.000		13.118	Continuing	Continuing	0.000
MOD MED - Product Management	Various	Various : Various	0.000	0.000		0.000		1.057	Dec 2022	0.000		1.057	Continuing	Continuing	0.000
MOD MED - Alternative Autoinjector Manufacturer Capability (AUTOINJ)	C/CPFF	Emergent Biosolutions : Gaithersburg/ Rockville, MD	0.000	0.000		0.000		0.678	Dec 2022	0.000		0.678	Continuing	Continuing	0.000
MOD MED - Next Generation Diagnostic System 1 (NGDS 1)	C/CPFF	BioFire Dx : Salt Lake City, UT	0.000	0.000		0.000		0.887	Dec 2022	0.000		0.887	Continuing	Continuing	0.000
MOD MED - HW C - NGDS 2 Man Portable Diagnostic System (NGDS 2 MPDS)	C/CPFF	Cepheid : Sunnyvale, CA	0.000	0.000		0.000		1.579	Dec 2022	0.000		1.579	Continuing	Continuing	0.000
MOD SEN - HW C - Government Team Labor	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.345	Nov 2022	0.000		0.345	Continuing	Continuing	0.000
ROSETTA - HW C - Government Team Labor	MIPR	Various : Various	0.000	0.000		0.000		1.494	Nov 2022	0.000		1.494	Continuing	Continuing	0.000
ROSETTA - HW C - OTA Contract	C/CPFF	Various : Various	0.000	0.000		0.000		1.979	Mar 2023	0.000		1.979	Continuing	Continuing	0.000
SPU RCDD - HW C - M-SCBA Product Development	C/CPFF	ATI Solutions : Inc., Tysons Corner, VA	0.000	0.000		0.000		1.253	Dec 2022	0.000		1.253	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		23.447		0.000		23.447	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

SPU RCDD: FY23 product development is a continuation from FY22 under SPU RCDD BA7. M-SCBA initiated in FY21 and will continue through FY22-24.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - ES S - Software Support	C/CPIF	Various : Various	0.000	0.000		0.000		0.128	Dec 2022	0.000		0.128	Continuing	Continuing	0.000
MOD CBRN IS - ES S - milCloud	MIPR	Various : Various	0.000	0.000		0.000		2.477	Dec 2022	0.000		2.477	Continuing	Continuing	0.000
MOD MED - ES C - NGDS 2 MPDS - Laboratory Development and Test Support	MIPR	Various : Various	0.000	0.000		0.000		0.498	Dec 2022	0.000		0.498	Continuing	Continuing	0.000
MOD SEN - ES C - Obsolescent Management	Various	Various : Various	0.000	0.000		0.000		0.784	Nov 2022	0.000		0.784	Continuing	Continuing	0.000
MOD SEN - ES C - Science and Engineering Support	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.170	Nov 2022	0.000		0.170	Continuing	Continuing	0.000
ROSETTA - OGA Support (IPT)	MIPR	Various : Various	0.000	0.000		0.000		0.705	Jan 2023	0.000		0.705	Continuing	Continuing	0.000
WMD CST - ES C - Government Product Development Team Labor	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center	0.000	0.000		0.000		0.384	Feb 2023	0.000		0.384	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		(CBC) : Aberdeen Proving Ground, MD													
WMD CST - ES C - Science & Engineering Support	MIPR	Naval Air Warfare Center (Aircraft Division) : Patuxent River, MD	0.000	0.000		0.000		0.120	Jan 2023	0.000		0.120	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		5.266		0.000		5.266	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - Obsolescence Support in Production testing and verification	C/CPIF	Various : Various	0.000	0.000		0.000		0.403	Dec 2022	0.000		0.403	Continuing	Continuing	0.000
MOD CBRN IS - OTHT S - System Testing	MIPR	Various : Various	0.000	0.000		0.000		1.500	Dec 2022	0.000		1.500	Continuing	Continuing	0.000
MOD SEN - DTE C - Information Assurance	Various	Various : Various	0.000	0.000		0.000		0.247	Nov 2022	0.000		0.247	Continuing	Continuing	0.000
MOD SEN - DTE C - System Modernization	Various	Various : Various	0.000	0.000		0.000		3.274	Nov 2022	0.000		3.274	Continuing	Continuing	0.000
MOD SEN - DTE C - Component Test and Evaluation	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.959	Nov 2022	0.000		0.959	Continuing	Continuing	0.000
ROSETTA - DTE C - M256 ROSETTA Vapor Card testing	C/FFP	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.000		0.000		0.250	Feb 2023	0.000		0.250	Continuing	Continuing	0.000
WMD CST - OTHT C - CBRN COTS Component	MIPR	U.S. Army Combat Capabilities	0.000	0.000		0.000		1.120	Feb 2023	0.000		1.120	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD													
WMD CST - OTHT C - CBRN COTS Component #2	MIPR	Naval Air Warfare Center (Aircraft Division) : Patuxent River, MD	0.000	0.000		0.000		1.574	Jan 2023	0.000		1.574	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		9.327		0.000		9.327	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - PM/MS S - Program Management Support	MIPR	Various : Various	0.000	0.000		0.000		0.160	Dec 2022	0.000		0.160	Continuing	Continuing	0.000
MOD CBRN IS - PM/MS S - MOD CBRN IS - Program Management Support	Various	Various : Various	0.000	0.000		0.000		1.900	Dec 2022	0.000		1.900	Continuing	Continuing	0.000
MOD MED - PM/MS C - JPM/JPEO Management Services	Various	Various : Various	0.000	0.000		0.000		1.182	Dec 2022	0.000		1.182	Continuing	Continuing	0.000
MOD SEN - PM/MS S - Program Management Support	Various	Various : Various	0.000	0.000		0.000		0.600	Jan 2023	0.000		0.600	Continuing	Continuing	0.000
ROSETTA - PM/MS S - Program Management Support	MIPR	Various : Various	0.000	0.000		0.000		0.461	Jan 2023	0.000		0.461	Continuing	Continuing	0.000
SPU RCDD - PM/MS C - Program Management Support	Various	Various : Various	0.000	0.000		0.000		0.210	Dec 2022	0.000		0.210	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
WMD CST - PM/MS S-Program Management Support	MIPR	Various : Various	0.000	0.000		0.000		0.303	Dec 2022	0.000		0.303	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.000		4.816		0.000		4.816	Continuing	Continuing	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		42.856		0.000		42.856	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

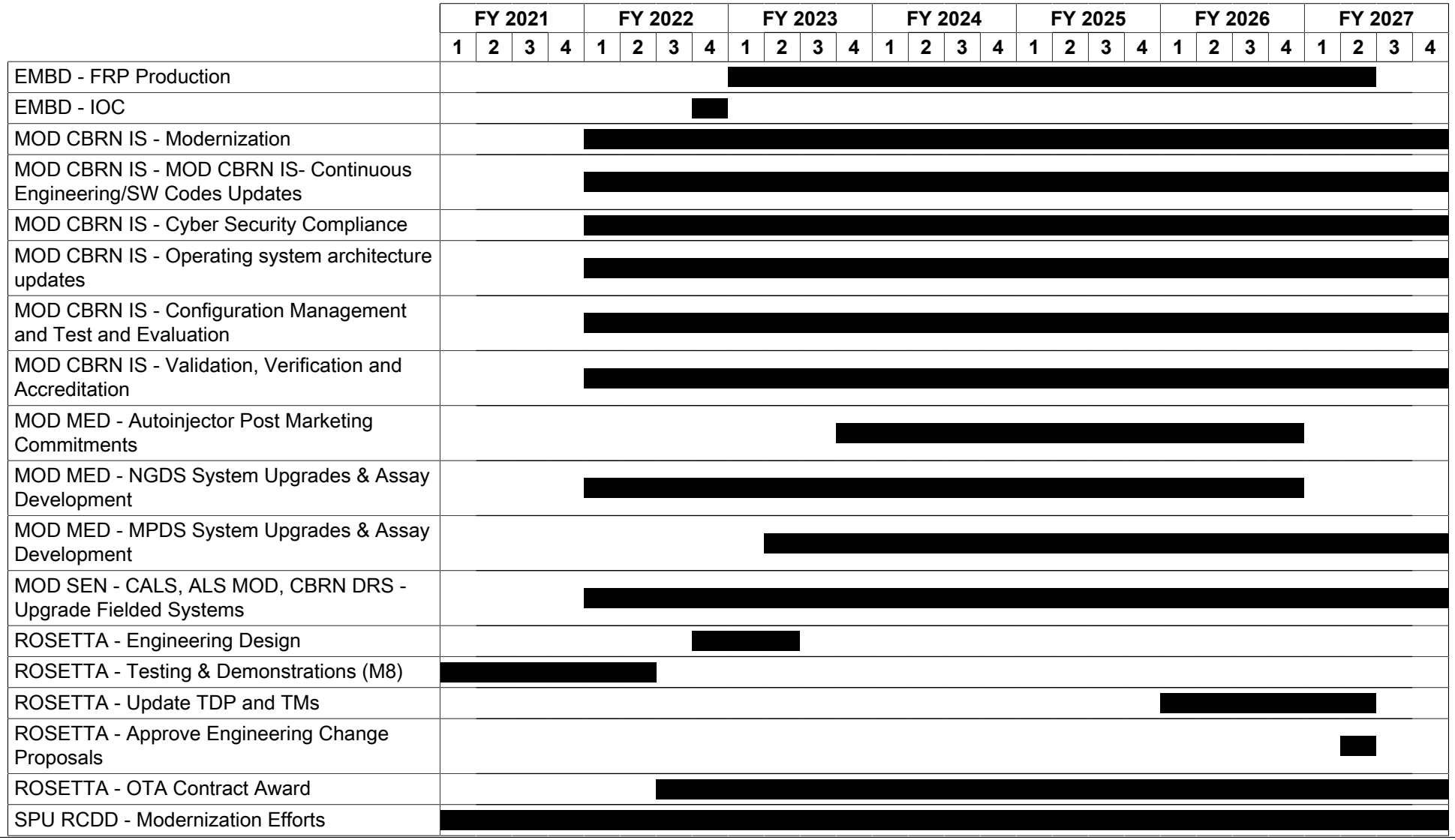

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

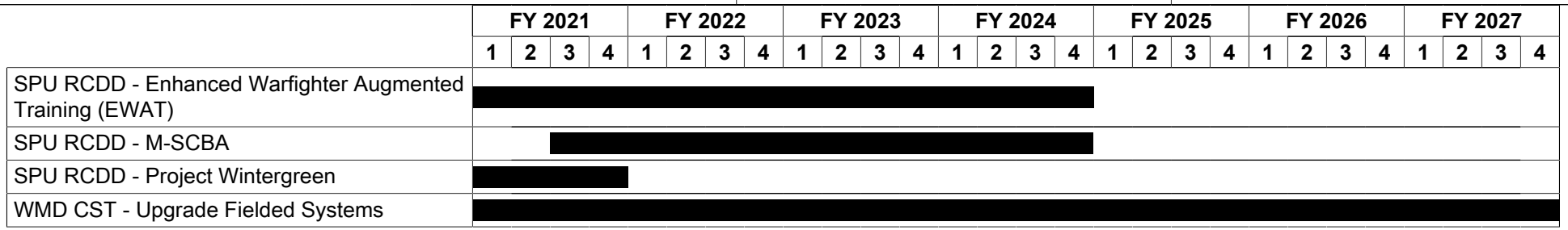

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** UN7 / *Understand (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EMBD - FRP Production	1	2023	2	2027
EMBD - IOC	4	2022	4	2022
MOD CBRN IS - Modernization	1	2022	4	2027
MOD CBRN IS - MOD CBRN IS- Continuous Engineering/SW Codes Updates	1	2022	4	2027
MOD CBRN IS - Cyber Security Compliance	1	2022	4	2027
MOD CBRN IS - Operating system architecture updates	1	2022	4	2027
MOD CBRN IS - Configuration Management and Test and Evaluation	1	2022	4	2027
MOD CBRN IS - Validation, Verification and Accreditation	1	2022	4	2027
MOD MED - Autoinjector Post Marketing Commitments	4	2023	4	2026
MOD MED - NGDS System Upgrades & Assay Development	1	2022	4	2026
MOD MED - MPDS System Upgrades & Assay Development	2	2023	4	2027
MOD SEN - CALS, ALS MOD, CBRN DRS - Upgrade Fielded Systems	1	2022	4	2027
ROSETTA - Engineering Design	4	2022	2	2023
ROSETTA - Testing & Demonstrations (M8)	1	2021	2	2022
ROSETTA - Update TDP and TMs	1	2026	2	2027
ROSETTA - Approve Engineering Change Proposals	2	2027	2	2027
ROSETTA - OTA Contract Award	3	2022	4	2027
SPU RCDD - Modernization Efforts	1	2021	4	2027
SPU RCDD - Enhanced Warfighter Augmented Training (EWAT)	1	2021	4	2024
SPU RCDD - M-SCBA	3	2021	4	2024
SPU RCDD - Project Wintergreen	1	2021	4	2021
WMD CST - Upgrade Fielded Systems	1	2021	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program											Date: April 2022	
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*				Project (Number/Name) CA7 / *Contamination Avoidance (Op Sys Dev)*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
CA7: *Contamination Avoidance (Op Sys Dev)*	-	14.557	15.051	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	29.608
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Project supports technology upgrade and refresh of fielded dismounted reconnaissance and detection systems that minimize chemical, biological, and The project supports technology upgrade and refresh of fielded dismounted reconnaissance and detection systems that minimize chemical, biological, and radiological (CBR) contamination and prevent further cross-contamination during operations. In FY2023, the CBDP RDT&E Projects have been restructured to align to the CBDP portfolio. CA7 efforts in FY2022 progress to the Understand (UN7) portfolio. This restructuring is intended to provide standardization and alignment across CBDP research, development and acquisition efforts.

Efforts included in this Project are:

(1) Chemical Biological Radiological Nuclear Dismounted Reconnaissance Systems (CBRN DRS),
(2) Expeditionary Analytic Modernization (EXANA MOD),
(3) Modernization Sensors (MOD SEN) **Progresses to UN7 in FY2023**,
(4) Enhanced Maritime Biological Detection (EMBD) **Progresses to UN7 in FY2023**, and
(5) Reactive Chemistry Orthogonal Surface and Environmental Threat Ticket Array (ROSETTA) **Progresses to UN7 in FY2023**

The CBRN DRS program effort provides the technology upgrade and refresh for the CBRN DRS system supporting dismounted reconnaissance, CBRN sensitive site assessment, and CBRN sensitive site exploitation missions, which enables more detailed and near real-time CBRN information flow for the Warfighter. The program will be moved into the MOD SEN program starting in FY22.

The EXANA MOD effort supports the evaluation of analytical components for technical refreshment and upgrades of key components of the analytical laboratory systems that have become obsolete or are no longer being supported by the manufacturer. This allows the Common Analytical Laboratory System (CALS) and Analytical Laboratory System Modification (ALS MOD) users to maintain their operational capability and operational effectiveness. In FY22, the program will be moved into the MOD SEN funding line.

The MOD SEN program will address obsolescence of critical equipment and functionality issues for the Services by establishing a modernization plan to integrate and incorporate advancements in technology for the ALS MOD, CALS Field Confirmatory Analytical Capability Set (FC ACS), CALS Theater Validation Integrated System (TV IS) and CBRN DRS. This program is renamed from EXANA MOD in FY22 and consolidates efforts previously included in EXANA MOD and CBRN DRS program efforts. In FY22 & FY23 MOD SEN supports the evaluation of components for technical refreshment of the CBRN DRS, CALS and ALS MOD.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CA7 / *Contamination Avoidance (Op Sys Dev)*

The EMBD program will undertake engineering efforts to combat Diminishing Manufacturing Sources and Material Shortages (DMSMS) and maintain a stable production line. Specific efforts include a new External Controller Subsystem (ECS) in FY22 and flash memory in the Rapid Agent Aerosol Detector (RAAD) in FY23. EMBD also anticipates having to undertake a major software development effort to upgrade fielding systems as software updates occur.

The ROSETTA is a modernization effort to provide the General Forces a low-cost, easy to use surface and/or vapor hazard detection ticket for a wide range of Chemical Warfare Agents (CWAs) and NTAs. These highly-selective, multiplexed array tickets will enable accurate hazard identification in the presence of common battlefield interferents at the tactical-level. ROSETTA is based on colorimetric technology and will be eye-readable and has potential for integration onto unmanned platforms especially micro-sized unmanned aerial sensors. In addition, the ROSETTA tickets will provide improved hazard detection performance with reduced false alarm rate, potential for increased number of chemicals detected, reduced detection time especially for compounds of interest (CWAs, PBAs, NTAs and Toxic Industrial Chemicals (TICs)), and potential for integration onto unmanned platforms especially micro-sized unmanned aerial sensors. In FY23 ROSETTA will continue contract actions with down select of vendors for a Vapor Detector.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) CBRN Dismounted Reconnaissance System (CBRN DRS) - Obsolescence ***Description:*** Provided analysis of the existing components of CBRN Dismounted Reconnaissance Systems to ensure current requirements baseline can be met. Identify potential obsolescence in current components, identify concerns with current components (technical, human factors, sustainment), assess the current market, procurement and testing of candidates that could correct concerns, and integrate the new items into the product baseline. Identifies and tests technology that can meet emerging requirements.	3.872	-	-
Title: 2) CBRN DRS - Development of System Modernization Packages ***Description:*** Identified and tested solutions to meet evolving demands of the National Defense Strategy (NDS) to Counter Weapons of Mass Destruction via a System Modernization Package to support dismounted reconnaissance, sensitive site assessment and exploitation, and render safe operations. Efforts will be focused on system modernization packages for improved biological detection, improved protective equipment, improve chemical detection, and improved battlespace awareness.	8.782	-	-
Title: 3) EXANA MOD ***Description:*** Expeditionary Analytics	1.903	-	-
Title: 4) EMBD ***Description:*** Obsolescence and replacement efforts	-	1.615	-
FY 2022 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CA7 / *Contamination Avoidance (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Initiate obsolescence events and will include all engineering efforts to finalize the production design of the replacement item/ technology, integration efforts, test hardware fabrication, test (verification and validation), and document changes resulting from OSIP efforts. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred to a new Project due to budget restructure. FY23 funding transferred to UN7.			
Title: 5) MOD SEN ***Description:*** Sensors Modernization ***FY 2022 Plans:*** Funding supports the evaluation of components for technical refreshment of the CBRN Dismounted Reconnaissance Systems, Common Analytical Laboratory System (CALS) and Analytical Laboratory System (ALS) Modification (MOD). Plans include improved and integrated sensors and PPE, identifying new electrochemiluminescence (ECL) technology. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred to a new Project due to budget restructure. FY23 funding transferred to UN7.	-	10.391	-
Title: 6) ROSETTA ***Description:*** Product Development, Engineering Design & Testing ***FY 2022 Plans:*** Initiate contract Award, Contractor Preliminary Design Review for Vapor Detector. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred to a new Project due to budget restructure. FY23 funding transferred to UN7.	-	3.045	-
Accomplishments/Planned Programs Subtotals	14.557	15.051	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• CA4: *Contamination Avoidance (ACD&P)*	9.367	32.923	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	42.290
• CA5: *Contamination Avoidance (SDD)*	129.914	82.295	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	212.209

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CA7 / *Contamination Avoidance (Op Sys Dev)*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• CM7: *Homeland Defense (Op Sys Dev)*	1.276	1.522	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.798
• UN7: *Understand (Op Sys Dev)*	0.000	0.000	42.856	-	42.856	35.884	42.602	42.603	44.196	Continuing	Continuing
• JS0005: *COMMON ANALYTICAL LABORATORY SYSTEM (CALS)*	42.773	48.258	66.765	-	66.765	28.382	0.000	0.000	0.000	0.000	186.178
• MC0101: *CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)*	52.393	21.611	47.324	-	47.324	59.433	64.556	37.802	23.292	Continuing	Continuing
• SA0003: *ENHANCED MARITIME BIOLOGICAL DETECTION (EMBD)*	13.562	21.473	21.472	-	21.472	21.899	21.203	26.500	2.240	Continuing	Continuing
• SA0025: *ANALYTICAL LABORATORY SYSTEM MODIFICATION (ALS MOD)*	19.002	1.056	3.894	-	3.894	4.256	4.806	5.088	9.137	Continuing	Continuing

Remarks

D. Acquisition Strategy

CBRN DISMOUNTED RECONNAISSANCE SYSTEMS

The Chemical Biological Radiological Dismounted Reconnaissance Systems (CBRN DRS) program uses a GOTS/COTS non-developmental item (NDI) single step acquisition approach to a full capability. This strategy employs an NDI acquisition concept to establish a simplified management framework to translate mission needs and emerging technology capabilities into a stable, affordable, well-managed acquisition program. Current efforts focus on maintaining baseline capabilities through obsolescence management and technology insertions. In order to meet the demands of the National Defense Strategy (NDS) to Counter Weapons of Mass Destruction, units equipped with the CBRN DRS must be able to both assess CBRN hazards and exploit them. Advancing threats and current capability gaps in sensitive site exploitation capability require a System Modernization Package (SMP) to the baseline CBRN DRS.

EXPEDITIONARY ANALYTIC MODERNIZATION (EXANA MOD)

The Common Analytical Laboratory System (CALS) and the Analytical Laboratory System (ALS) Modification (MOD) program's objective is to address critical analytical equipment obsolescence (Analytical Suite) and system functionality issues for the National Guard Bureau's (NGB) Civil Support Teams. This includes market survey, down select, testing, integration, and update of Technical Data Package and logistical documentation. It is anticipated that Capability Development Document (CDD) updates will be finalized for the CALS Theater Validation Integrated System (TV IS) and Field Confirmatory Analytical Capability Set (FC ACS) variants in early FY22. As such, this program will continue to follow the most up-to-date requirement documentation for CALS and ALS MOD.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CA7 / *Contamination Avoidance (Op Sys Dev)*

ENHANCED MARITIME BIOLOGICAL DETECTION (EMBD)

The EMBD program uses a streamlined acquisition strategy and awarded a Full Rate Production (FRP) contract in 1QFY22 with options for production of EMBD kits and Obsolescence Support in Production (OSIP) to resolve diminishing sources and obsolescence issues. The FY22 OSIP Option will specifically address obsolescence problems with the External Controller Subsystem (ECS) which is used to remotely control the Joint Biological Point Detection System (JBPDS) / EMBD. The FY23 OSIP Option will address major obsolescence problems identified by the prime contractor that affect a stable production line. As portions of the ECS are no longer procurable, the contractor will identify and qualify a new hardware that both supports EMBD requirements for future upgradability and is also backwards compatible with previously fielded units.

MODERNIZATION SENSORS (MOD SEN)

MOD SEN program uses a COTS/GOTS non-developmental item (NDI) single step acquisition approach to a full capability. This strategy employs an NDI acquisition concept to establish a simplified management framework to translate mission needs and emerging technology capabilities into a stable, affordable, well managed acquisition program. Current efforts focus on supporting CALS TV-IS, FC-ACS, ALS MOD, and CBRN DRS PoR's through maintaining baseline capabilities with obsolescence management, technology insertions, and enhancements based on changes in requirements. Additionally, in order to meet the demands of the NDS to Counter Weapons of Mass Destruction, units equipped with the systems must be able to both assess and exploit CBRN hazards. ODASD (CBD) goals to modernize the Joint Force to combat advancing threats and current capability gaps in sensitive site exploitation capability require a system modernization strategy for each system.

REACTIVE CHEMISTRY ORTHOGONAL SURFACE AND ENVIRONMENTAL THREAT TICKET ARRAY (ROSETTA)

ROSETTA will use a streamlined approach to rapidly field multiple components of the modernization of the M256A2 kit. This approach is based on technology that will transition from Science and Technology Efforts and/or commercial off the shelf (COTS) products to the M256 kit. These efforts will utilize multiple contract vehicles including Countering Weapons of Mass Destruction (CWMD) Other Transactional Authority (OTA) and Joint Enterprise- Research, Development, Acquisition, Production/Procurement (JERDAP) in order to streamline the acquisition of the products. The ROSETTA funding will complete the acquisition of the M8 component to the M256 kit and will support the acquisition of a PBA ticket, the M256 vapor unmasking tool, and the other NTAs and TICs. These products will be transitioned to TACOM for production.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) CA7 / *Contamination Avoidance (Op Sys Dev)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN DRS - HW S - System Modernization OTA	C/CPAF	TBD : N/A	1.065	9.000	Feb 2021	0.000		0.000		0.000		0.000	0.000	10.065	0.000
CBRN DRS - HW C - Government Team Labor	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.475	1.102	Nov 2020	0.000		0.000		0.000		0.000	0.000	1.577	0.000
EMBD - HW SB - Obsolescence Support in Production	C/CPIF	Various : Various	0.000	0.000		0.965	Dec 2021	0.000		0.000		0.000	0.000	0.965	0.000
MOD SEN - HW C - Government Product Development Team Labor	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.583	Feb 2022	0.000		0.000		0.000	0.000	0.583	0.000
MOD SEN - HW C - Contractor Team Labor	C/FFP	Various : Various	0.000	0.000		0.280	Feb 2022	0.000		0.000		0.000	0.000	0.280	0.000
MOD SEN - SW C - Training Software	MIPR	CCDC AVIATION AND MISSILE CENTER : Huntsville, AL	0.000	0.000		0.112	Apr 2022	0.000		0.000		0.000	0.000	0.112	0.000
ROSETTA - HW C - Government Product Development Team Labor	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.146	Nov 2021	0.000		0.000		0.000	0.000	0.146	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CA7 / *Contamination Avoidance (Op Sys Dev)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ROSETTA - HW C - OTA Contract	C/CPFF	Various : Various	0.000	0.000		2.845	Jun 2022	0.000		0.000		0.000	0.000	2.845	0.000
		Subtotal	1.540	10.102		4.931		0.000		0.000		0.000	0.000	16.573	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN DRS - ES C - T&E Support	Various	Various : Various	0.000	0.211	Jun 2021	0.000		0.000		0.000		0.000	0.000	0.211	0.000
EXANA MOD - ES C - Science & Engineering Support	MIPR	Various : Various	0.000	0.433	Jan 2021	0.000		0.000		0.000		0.000	0.000	0.433	0.000
MOD SEN - ES S - Test Support	MIPR	Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD	0.000	0.000		0.200	Apr 2022	0.000		0.000		0.000	0.000	0.200	0.000
MOD SEN - ES C - Obsolescent Management	Various	Various : Various	0.000	0.000		0.983	Apr 2022	0.000		0.000		0.000	0.000	0.983	0.000
MOD SEN - ES C - Science and Engineering Support	C/FFP	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	0.000		0.200	Apr 2022	0.000		0.000		0.000	0.000	0.200	0.000
		Subtotal	0.000	0.644		1.383		0.000		0.000		0.000	0.000	2.027	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN DRS - OTE - Candidate Testing	Various	Various : Various	5.691	0.865	Mar 2021	0.000		0.000		0.000		0.000	0.000	6.556	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CA7 / *Contamination Avoidance (Op Sys Dev)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EXANA MOD - OTHT C - Tech Refresh Efforts	MIPR	Naval Air Warfare Center (Aircraft Division) : Patuxent River, MD	0.000	0.730	Mar 2021	0.000		0.000		0.000		0.000	0.000	0.730	0.000
EXANA MOD - OTHT C - Tech Refresh Efforts #2	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.467	Mar 2021	0.000		0.000		0.000		0.000	0.000	0.467	0.000
EMBD - Obsolescence Support in Production testing and verification	C/CPIF	Various : Various	0.000	0.000		0.400	Dec 2021	0.000		0.000		0.000	0.000	0.400	0.000
MOD SEN - DTE C - Information Assurance	MIPR	CCDC Armaments Center : Picatinny, NJ	0.000	0.000		0.254	Apr 2022	0.000		0.000		0.000	0.000	0.254	0.000
MOD SEN - DTE C - Component Test and Evaluation	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.500	Apr 2022	0.000		0.000		0.000	0.000	0.500	0.000
MOD SEN - DTE C - System Modernization	Various	Various : Various	0.000	0.000		5.756	Jan 2022	0.000		0.000		0.000	0.000	5.756	0.000
		Subtotal	5.691	2.062		6.910		0.000		0.000		0.000	0.000	14.663	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN DRS - PM/MS S - Program Management Support	MIPR	Various : Various	3.979	1.476	Nov 2020	0.000		0.000		0.000		0.000	0.000	5.455	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CA7 / *Contamination Avoidance (Op Sys Dev)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EXANA MOD - PM/MS S - Program Management Support	MIPR	Various : Various	0.000	0.273	Jan 2021	0.000		0.000		0.000		0.000	0.000	0.273	0.000
EMBD - PM/MS S - Program Management Support	MIPR	Various : Various	0.000	0.000		0.250	Dec 2021	0.000		0.000		0.000	0.000	0.250	0.000
MOD SEN - PM/MS S - Program Management Support	Various	Various : Various	0.000	0.000		1.523	Oct 2021	0.000		0.000		0.000	0.000	1.523	0.000
ROSETTA - PM/MS S - Program Management Support	MIPR	Various : Various	0.000	0.000		0.054	Nov 2021	0.000		0.000		0.000	0.000	0.054	0.000
		Subtotal	3.979	1.749		1.827		0.000		0.000		0.000	0.000	7.555	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	11.210	14.557		15.051		0.000		0.000		0.000	0.000	40.818	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CA7 / *Contamination Avoidance (Op Sys Dev)*

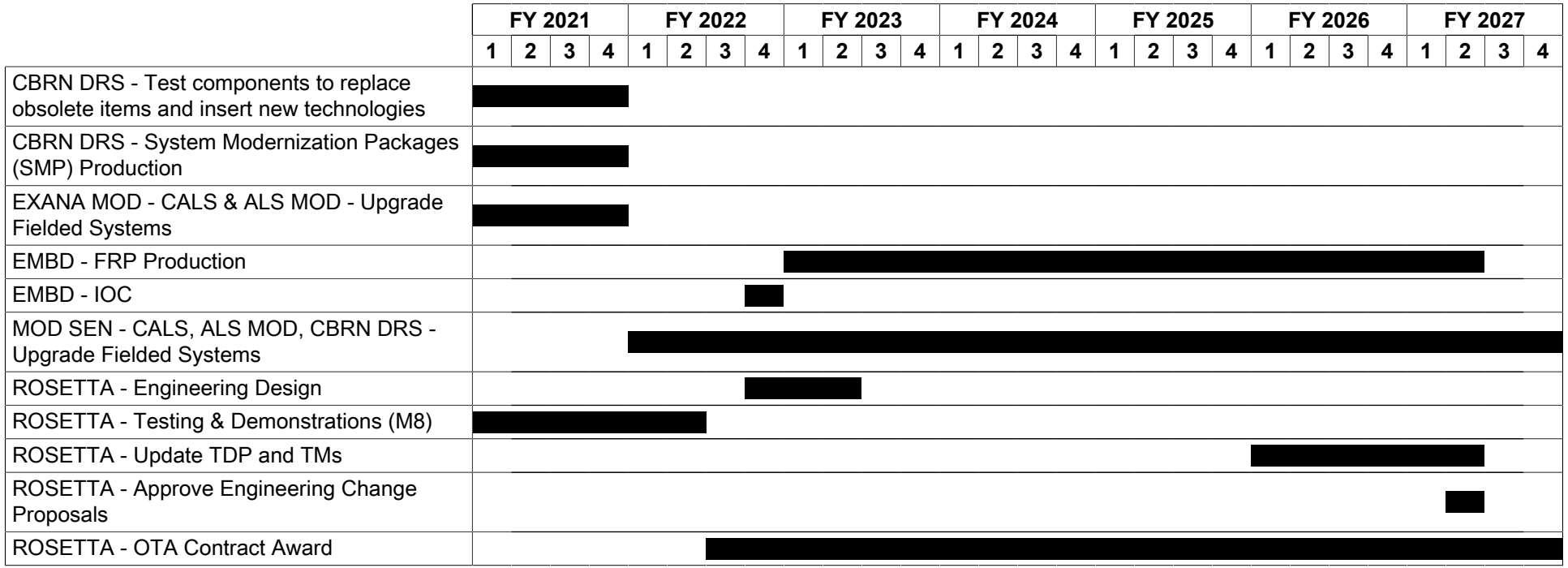

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CA7 / *Contamination Avoidance (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CBRN DRS - Test components to replace obsolete items and insert new technologies	1	2021	4	2021
CBRN DRS - System Modernization Packages (SMP) Production	1	2021	4	2021
EXANA MOD - CALS & ALS MOD - Upgrade Fielded Systems	1	2021	4	2021
EMBD - FRP Production	1	2023	2	2027
EMBD - IOC	4	2022	4	2022
MOD SEN - CALS, ALS MOD, CBRN DRS - Upgrade Fielded Systems	1	2022	4	2027
ROSETTA - Engineering Design	4	2022	2	2023
ROSETTA - Testing & Demonstrations (M8)	1	2021	2	2022
ROSETTA - Update TDP and TMs	1	2026	2	2027
ROSETTA - Approve Engineering Change Proposals	2	2027	2	2027
ROSETTA - OTA Contract Award	3	2022	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) CM7 / *Homeland Defense (Op Sys Dev)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
CM7: *Homeland Defense (Op Sys Dev)*	-	1.276	1.522	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.798
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports technology refresh of fielded analytical laboratory system capabilities which allows the conduct on-site analysis of any unknown sample and test potential life-threatening substances. In FY2023, the CBDP RDT&E Projects have been restructured to align to the CBDP portfolio. CM7 efforts in FY2022 progress to the Understand (UN7) portfolio. This restructuring is intended to provide standardization and alignment across CBDP research, development and acquisition efforts.

The effort included in this Project is:

(1) Weapons of Mass Destruction - Civil Support Team (WMD CST) **Progresses to UN7 in FY2023**

The WMD CST program supports the fielded system upgrade and ongoing assessment and acquisition of commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) analytical detection, protection, decontamination and sampling equipment for survey in order to expand/enhance the operational capabilities of the (57) WMD CST Teams. Program efforts support upgrades of key components of the WMD CST Program that have become obsolete, or are no longer being supported by the manufacturer. In FY22 the WMD CST program continues system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) WMD CST	1.276	1.522	-
Description: System Upgrade and Support ***FY 2022 Plans:*** Continue system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system. Continue the detailed planning, conduct, support, data reduction, and reports from such testing, as well as hardware items that are consumed or planned to be consumed in the conduct of such operations. Conduct logistics engineering and ILS management (e.g., maintenance support, facilities, personnel, training, testing, and activation of the system). ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred to a new Project due to budget restructure. FY23 funding transferred to UN7.			
Accomplishments/Planned Programs Subtotals	1.276	1.522	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CM7 / *Homeland Defense (Op Sys Dev)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• UN7: *Understand (Op Sys Dev)*	0.000	0.000	42.856	-	42.856	35.884	42.602	42.603	44.196	Continuing	Continuing
• SA0025: *ANALYTICAL LABORATORY SYSTEM MODIFICATION (ALS MOD)*	19.002	1.056	3.894	-	3.894	4.256	4.806	5.088	9.137	Continuing	Continuing

Remarks

D. Acquisition Strategy

WMD - CIVIL SUPPORT TEAMS (WMD CST)

The Weapons of Mass Destruction Civil Support Team Program (WMD-CST) is a COTS based program that supports the evaluation of advancements in CBRN commercial off the shelf (COTS)/government-off-the-shelf (GOTS) equipment against the current technology baseline of equipment fielded to the (57) WMD CST Teams, this is to address analytical equipment obsolescence. As such, the program establishes a time phased modernization plan to integrate and incorporate proven advancements in commercially available technology into the CST operating mission set based on highest priority capability requirements and availability of resources.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CM7 / *Homeland Defense (Op Sys Dev)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
WMD CST - ES C - Government Product Development Team Labor	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.000	0.150	Nov 2020	0.085	Nov 2021	0.000		0.000		0.000	0.000	0.235	0.000
WMD CST - ES C - Science & Engineering Support	MIPR	Naval Air Warfare Center (Aircraft Division) : Patuxent River, MD	0.096	0.000		0.095	Nov 2021	0.000		0.000		0.000	0.000	0.191	0.000
		Subtotal	0.096	0.150		0.180		0.000		0.000		0.000	0.000	0.426	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
WMD CST - OTHT C - CBRN COTS Component	MIPR	Naval Air Warfare Center (Aircraft Division) : Patuxent River, MD	0.000	0.311	Jan 2021	0.000		0.000		0.000		0.000	0.000	0.311	0.000
WMD CST - OTHT C - CBRN COTS Component #2	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.010	Jan 2021	0.000		0.000		0.000		0.000	0.000	0.010	0.000
WMD CST - OTHT C - CBRN COTS Component #3	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	6.645	0.727	Feb 2021	1.110	Feb 2022	0.000		0.000		0.000	0.000	8.482	0.000
		Subtotal	6.645	1.048		1.110		0.000		0.000		0.000	0.000	8.803	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CM7 / *Homeland Defense (Op Sys Dev)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
WMD CST - PM/MS S-Program Management Support	MIPR	Various : Various	2.547	0.078	Dec 2020	0.232	Dec 2021	0.000		0.000		0.000	0.000	2.857	0.000
		Subtotal	2.547	0.078		0.232		0.000		0.000		0.000	0.000	2.857	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.288	1.276		1.522		0.000		0.000		0.000	0.000	12.086	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CM7 / *Homeland Defense (Op Sys Dev)*

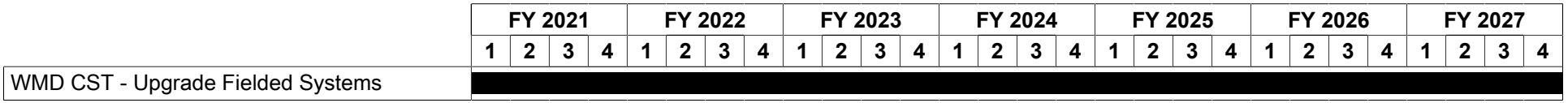

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** CM7 / *Homeland Defense (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
WMD CST - Upgrade Fielded Systems	1	2021	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) C07 / *Collective Protection (Op Sys Dev)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
C07: *Collective Protection (Op Sys Dev)*	-	7.950	8.442	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.392
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for technology upgrade and refresh of fielded Collective Protection (CP) equipment and systems that are smaller, lighter, less costly to produce and maintain, and more logistically supportable enabling mission accomplishment in spaces safe from the effects of chemical, biological, and radiological (CBR) contamination. In FY2023, the CBDP RDT&E Projects have been restructured to align to the CBDP portfolio. CO7 efforts in FY2022 progress to the Protect (PT7) portfolio. This restructuring is intended to provide standardization and alignment across CBDP research, development and acquisition efforts.

The effort included in this Project is:

(1) Modernization Protection Collective Protection (MODPROT CP) **Progresses to PT7 in FY2023**

MODPROT CP incorporates a value engineering approach to address the need to reduce logistics cost and minimizes supply chain shortages by addressing obsolescence issues to the DoD /Joint Services fielded CBR protection portfolio for mobile, transportable, fixed facility and shipboard CP systems without the high cost of requiring a new program of record. The obsolescence of critical equipment, if not modernized, will continue to face significantly increased cost and long lead times making the equipment unaffordable and unprocurable to meet major weapon system program's requirements and schedules. MODPROT CP modernizes decades old collective protection equipment reducing costs, shortening lead times, and updating key components to extend service life and ensure affordable and procurable to warfighters.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) MODPROT CP	7.950	8.442	-
Description: Upgrades, improvements, and modernizations to fielded CP systems			
FY 2022 Plans: Complete Non-Destructive Production Acceptance Leak Test improvements. Continue redesign of M49 gas filters. Continue M48A1 Filter Redesign. Continue Collective Protection Modernization for Ships and Buildings and conduct system scale lab testing. Continue development of updated training materials for Collective Protection Systems. Begin conducting collective protection system filter surveillance testing to improve system sustainment.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** C07 / *Collective Protection (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding transferred to a new Project due to budget restructure. FY23 funding transferred to PT7.			
Accomplishments/Planned Programs Subtotals	7.950	8.442	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• CO5: *Collective Protection (SDD)*	7.688	3.028	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.716
• DE7: *Decontamination (Op Sys Dev)*	0.633	1.072	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.705
• IP7: *Individual Protection (Op Sys Dev)*	7.605	11.724	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.329
• PT7: *Protect (Op Sys Dev)*	0.000	0.000	20.076	-	20.076	15.426	12.029	9.942	8.693	Continuing	Continuing
• JP1111: *JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)*	14.496	22.719	30.737	-	30.737	37.128	23.201	23.060	23.060	Continuing	Continuing
• PHM036: *MODERNIZATION PROTECTION COLLECTIVE PROTECTION (MODPROT CP)*	0.000	1.385	1.385	-	1.385	0.300	0.000	0.000	0.000	0.000	3.070

Remarks

D. Acquisition Strategy

MODERNIZATION PROTECTION COLLECTIVE PROTECTION (MODPROT CP)

MODPROT CP leverages mature technology from contractor developed components to address and replace obsolete components of various fielded collective protection systems. Modernization efforts will also use items developed by the Government that have transitioned from lower to higher technology readiness levels that can be inserted into fielded systems. A combination of competitive and sole source contracts to various industry vendors and project orders to various Government activities will be used to adapt previously developed components to modernize systems. Robust component and system level testing to meet applicable military standards will validate both Government and contractor furnished improvements. The improvements will be added into the specific systems' updated Technical Data Packages (TDPs) to be used in Engineering Change Proposals (ECPs) and provided to the item managers.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** C07 / *Collective Protection (Op Sys Dev)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT CP - HW C - Collective Protection Modernization for Ships	Various	Various : Various	0.000	0.773	Jan 2021	2.295	Nov 2021	0.000		0.000		0.000	0.000	3.068	0.000
MODPROT CP - HW C - Filter Redesign, Non-Destructive Leak Test, ColPro Training Dev	MIPR	Various : Various	0.000	2.815	Oct 2020	0.736	Nov 2021	0.000		0.000		0.000	0.000	3.551	0.000
MODPROT CP - HW C - Collective Protection Modernization for Ships #2	Various	Indian Head : Indian Head, MD	0.000	1.909	Nov 2020	2.372	Nov 2021	0.000		0.000		0.000	0.000	4.281	0.000
		Subtotal	0.000	5.497		5.403		0.000		0.000		0.000	0.000	10.900	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT CP - ES C - IPT, Technical, Engineering and Logistics Support	MIPR	Various : Various	0.000	0.704	Oct 2020	0.428	Dec 2021	0.000		0.000		0.000	0.000	1.132	0.000
		Subtotal	0.000	0.704		0.428		0.000		0.000		0.000	0.000	1.132	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT CP - DTE C - CP Modernization Testing	Various	Various : Various	0.000	1.137	Oct 2020	1.672	Nov 2021	0.000		0.000		0.000	0.000	2.809	0.000
		Subtotal	0.000	1.137		1.672		0.000		0.000		0.000	0.000	2.809	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** C07 / *Collective Protection (Op Sys Dev)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT CP - PM/MS C - Program Management Support	MIPR	Various : Various	0.000	0.612	Mar 2021	0.939	Nov 2021	0.000		0.000		0.000	0.000	1.551	0.000
		Subtotal	0.000	0.612		0.939		0.000		0.000		0.000	0.000	1.551	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	7.950		8.442		0.000		0.000		0.000	0.000	16.392	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** C07 / *Collective Protection (Op Sys Dev)*

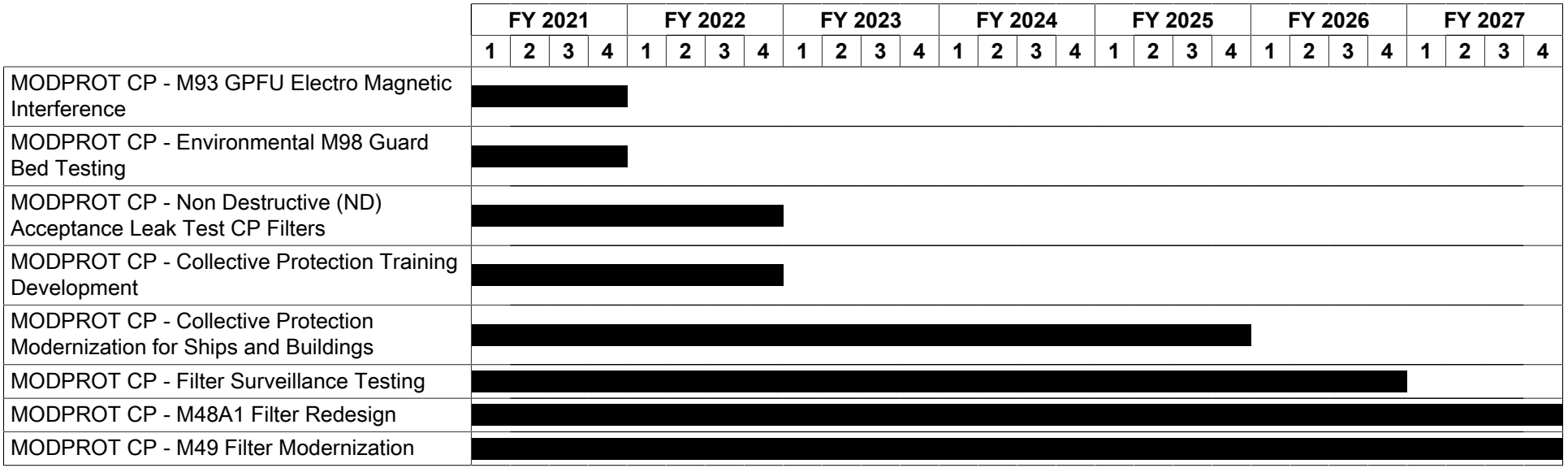

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** C07 / *Collective Protection (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MODPROT CP - M93 GPFU Electro Magnetic Interference	1	2021	4	2021
MODPROT CP - Environmental M98 Guard Bed Testing	1	2021	4	2021
MODPROT CP - Non Destructive (ND) Acceptance Leak Test CP Filters	1	2021	4	2022
MODPROT CP - Collective Protection Training Development	1	2021	4	2022
MODPROT CP - Collective Protection Modernization for Ships and Buildings	1	2021	4	2025
MODPROT CP - Filter Surveillance Testing	1	2021	4	2026
MODPROT CP - M48A1 Filter Redesign	1	2021	4	2027
MODPROT CP - M49 Filter Modernization	1	2021	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) DE7 / *Decontamination (Op Sys Dev)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
DE7: *Decontamination (Op Sys Dev)*	-	0.633	1.072	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.705
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project addresses obsolescence issues with decontamination equipment and the need to modernize the Joint Services fielded chemical and biological with capabilities meeting or exceeding the Services requirements. In FY2023, the CBDP RDT&E Projects have been restructured to align to the CBDP portfolio. DE7 efforts in FY2022 progress to the Mitigate (MT7) portfolio. This restructuring is intended to provide standardization and alignment across CBDP research, development and acquisition efforts.

The effort included in this project is:

(1) Modernization Protection Decontamination (MODPROT DE) **Progresses to MT7 in FY2023**

MODPROT DE addresses obsolescence and technical data concerns, beginning with the M26 Joint Services Transportable Decontamination System-Small Scale (JSTDS-SS) through validation and verification of Technical Manual (TM) changes as well as technical data for spare and repair parts; the M12A1 Power Driven Decontamination Apparatus (PDDA) by updating technical references and performing the necessary validation and verification before publishing an updated TM; Conduct biological efficacy at relevant environment (i.e. ambient, desert, cold) for Joint Service Equipment Wipe (JSEW) to expand wipe capabilities to include performance against biological agents.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) MODPROT DE	0.633	1.072	-
Description: Upgrades, improvements, and modernizations to fielded decontamination systems			
FY 2022 Plans: Continue updates to technical data for spares and repair parts for M26 Joint Service Transportable Decontamination System - Small Scale (JSTDS-SS) Technical Data Package (TDP). Continue updates to technical references and validation/verification efforts for M12A1 Power Driven Decontamination Apparatus (PDDA) Technical Manual (TM). Complete efficacy of emerging sorbent technologies for the M295/M100 to increase reactivity properties against nerve agents. Complete Health Hazard Assessment (HHA) on expired M295/M100 for potential training use.			
FY 2022 to FY 2023 Increase/Decrease Statement:			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** DE7 / *Decontamination (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding transferred to a new Project due to budget restructure. FY23 funding ($1.088M) transferred to MT7.			
Accomplishments/Planned Programs Subtotals	0.633	1.072	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• CO7: *Collective Protection (Op Sys Dev)*	7.950	8.442	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.392
• IP7: *Individual Protection (Op Sys Dev)*	7.605	11.724	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.329
• MT7: *Mitigate (Op Sys Dev)*	0.000	0.000	5.098	-	5.098	3.879	6.747	4.360	3.419	Continuing	Continuing
• JD0050: *DECONTAMINATION FAMILY OF SYSTEMS (DFoS)*	11.474	4.166	5.795	-	5.795	8.562	8.673	8.820	18.518	Continuing	Continuing

Remarks

D. Acquisition Strategy

MODERNIZATION DECONTAMINATION (MODPROT DE)

MODPROT DE leverages mature technology from contractor developed components to address and replace obsolete components of various fielded decontamination systems. Modernization efforts will also use items developed by the Government that have transitioned from lower to higher technology readiness levels that can be inserted into fielded systems. A combination of competitive and sole source contracts to various industry vendors and project orders to various Government activities will be used to adapt previously developed components to modernize systems. Robust component and system level testing will validate both Government and contractor furnished improvements. The improvements will be added into the specific system's updated Technical Data Packages (TDPs) to be used in Engineering Change Proposals (ECPs) and provided to the item managers.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** DE7 / *Decontamination (Op Sys Dev)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT DE - HW C - M26 Tech Data Package; Modernization Update / M12A1 TM Update, JSEW	MIPR	Various : Various	0.000	0.365	Nov 2020	0.473	Nov 2021	0.000		0.000		0.000	0.000	0.838	0.000
		Subtotal	0.000	0.365		0.473		0.000		0.000		0.000	0.000	0.838	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT DE - ES C - IPT, Engineering, Technical, Logistics Support	MIPR	Various : Various	0.000	0.268	Nov 2020	0.480	Oct 2021	0.000		0.000		0.000	0.000	0.748	0.000
		Subtotal	0.000	0.268		0.480		0.000		0.000		0.000	0.000	0.748	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT DE - PM/MS C - Program Management Support	Various	Various : Various	0.000	0.000		0.119	Oct 2021	0.000		0.000		0.000	0.000	0.119	0.000
		Subtotal	0.000	0.000		0.119		0.000		0.000		0.000	0.000	0.119	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.633		1.072		0.000		0.000		0.000	0.000	1.705	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** DE7 / *Decontamination (Op Sys Dev)*

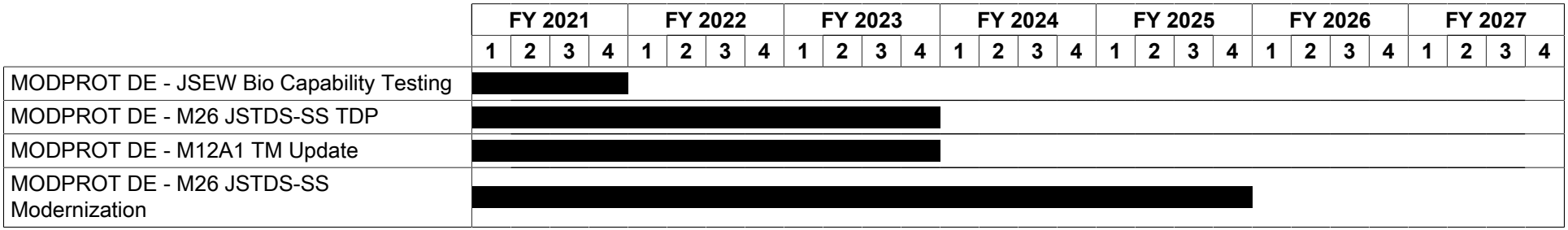

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** DE7 / *Decontamination (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MODPROT DE - JSEW Bio Capability Testing	1	2021	4	2021
MODPROT DE - M26 JSTDS-SS TDP	1	2021	4	2023
MODPROT DE - M12A1 TM Update	1	2021	4	2023
MODPROT DE - M26 JSTDS-SS Modernization	1	2021	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program											Date: April 2022	
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*				Project (Number/Name) IP7 / *Individual Protection (Op Sys Dev)*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
IP7: *Individual Protection (Op Sys Dev)*	-	7.605	11.724	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.329
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The project supports technology refresh of fielded individual protective equipment which enable the warfighter to operate in a contaminated CBR environment with little or no degradation to his/her performance. In FY2023, the CBDP RDT&E Projects have been restructured to align to the CBDP portfolio. IP7 efforts in FY2022 progress to the Protect (PT7) and Understand (UN7) portfolios. This restructuring is intended to provide standardization and alignment across CBDP research, development and acquisition efforts.

Efforts included in this Project are:

(1) Modernization Protection Individual Protection (MODPROT IP) **Progresses to PT7 in FY2023**
(2) Special Purpose Unit Rapid Capability Development and Deployment (SPU RCDD) **Progresses to UN7 in FY2023**

The MODPROT IP addresses obsolescence issues with Individual Protective (IP) equipment and the need to modernize fielded IP with capabilities to meet or exceed the Services requirements. MODPROT IP will also conduct modernization efforts and reverse engineering of maintenance and repair procedures for the Joint Services Mask Leakage Tester (JSMLT). MODPROT IP will also provide mask and filter system upgrades and modernization of fielded protection systems to enhance respiratory and ocular protection resulting in an increased lethality of fighter aircraft by mitigating risk due to operationally unsuitable aircrew CBRN masks. Modernization efforts will include technical manual updates and a Logistics Demonstration for an updated, lightweight version of the Joint Protective Aircrew Ensemble (LJPACE). In FY22 the MODPROT IP program will conduct shelf life extension testing on Molded Lightweight Chemical/Biological Protective Overboot (MALO) and Joint Service Integrated Suit Technology (JSLIST) Block 2 Glove Upgrade non- Flame Resistant (JB2GU nFR), to determine if storage life may be extended to 20 years from the Date of Manufacture. Testing and analysis with aircraft will fully validate and refine new Tactics, Techniques and Procedures (TTPs) that allow aircrews to operate without restrictive CBRN protective equipment by determining time and techniques required to reduce cockpit hazards to acceptable levels by flushing with clean air. The impact of funding these programs will address modernization and obsolescence across the DoD IP portfolio to increase readiness, sustainability, reliability, and affordability of these systems. MODPROT IP incorporates a value engineering approach to address the need to reduce logistics cost and solve obsolescence issues to the DoD /Joint services fielded chemical, biological and radiological protection portfolio for individual protective equipment and test equipment systems.

SPU RCDD facilitates Joint Special Operations Command (JSOC) rapid response requirements to near-term and emergent chemical-biological defensive capabilities. This includes select elements from across the Special Operations Force (SOF) Enterprise such as Combatant Commanders Response Forces (CRFs) and other Joint Force enabling units such as the 20th Chemical, Biological, Radiological, Nuclear and Explosives Command. SPU RCDD mitigates risk across the Chemical Biological Defense Program (CBDP) by creating a portfolio of operationally-relevant CB capabilities that can be quickly transitioned in response to the articulated, emergent capability needs of the geographic combatant commanders. These objectives are met by the early transitioning of promising science and technologies (S&T); the

focused conduct of combat evaluations and mission-oriented operational assessments to assess technological and mission suitability; and the active leveraging of existing Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf (GOTS) products along with novel redesign approaches to optimize existing solutions to new challenges supported by "buy-try-decide-acquire" acquisition strategies. SPU RCDD initiates efforts such as respiratory breathing systems, biological identification, unmanned aerial and ground platform sensor integration, development of enhanced and augmented reality systems, and modernization of protective Chemical and Biological ensembles that have gone through requirements validation, and continues product enhancement development and technology upgrades on currently fielded SOF equipment to counter emerging threats, conduct limited user evaluations and operational assessment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) MODPROT IP	3.001	8.327	-
Description: Upgrades, improvements, and modernizations to fielded IP systems. ***FY 2022 Plans:*** Initiate M53A1 Hard to Fit Testing. Initiate Overboots, Molded, Lightweight, Chemical/Biological Protective (MALO) shelf life extension testing. Continue modernization of the Joint Service Mask Leakage Tester (JSMLT) and Integrated Footwear System (IFS). Commence shelf life maximum age study for Joint Service Lightweight Integrated Suit Technology (JSLIST) Block 2 Glove Upgrade, Non-Flame Resistant (JB2GU nFR) Glove. Continue Third Generation Filter and National Institute for Occupational Safety and Health (NIOSH) filter Prototype Developmental Testing (DT) and builds. Initiate Fixed Wing Aircraft/Aircrew PPE optimization effort. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred to a new Project due to budget restructure. FY23 funding transferred to PT7.			
Title: 2) SPU RCDD	4.604	3.397	-
Description: The Modular Self Contained Breathing Apparatus (M-SCBA) project will replace the three different SCBA systems currently being used by the customer with a modular system that can be configured to meet their three (3) specific mission profiles. The current SCBA systems are made by three different manufactures which creates a logistical burden. The Enhanced Warfighter Augmented Training (EWAT) project will allow the Warfighter to interact with specific CBRN equipment through an actual device or with a created 3D version of that device to perform maintenance as well as to load and analyze CB samples using pre-positioned training scenarios. ***FY 2022 Plans:*** Initiate efforts such as respiratory breathing systems, biological identification, and modernization of protective Chemical and Biological ensembles that have gone through requirements validation and continue product enhancement development and technology upgrades on currently fielded SOF equipment to counter emerging threats, conduct limited user evaluations and operational assessment. ***FY 2022 to FY 2023 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IP7 / *Individual Protection (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Funding transferred to a new Project due to budget restructure. FY23 funding transferred to UN7.			
Accomplishments/Planned Programs Subtotals	7.605	11.724	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• IP5: *Individual Protection (SDD)*	17.129	18.941	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	36.070
• UN5: *Understand (SDD)*	0.000	0.000	127.671	-	127.671	101.933	98.742	98.122	72.699	Continuing	Continuing
• CO7: *Collective Protection (Op Sys Dev)*	7.950	8.442	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.392
• DE7: *Decontamination (Op Sys Dev)*	0.633	1.072	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.705
• PT7: *Protect (Op Sys Dev)*	0.000	0.000	20.076	-	20.076	15.426	12.029	9.942	8.693	Continuing	Continuing
• UN7: *Understand (Op Sys Dev)*	0.000	0.000	42.856	-	42.856	35.884	42.602	42.603	44.196	Continuing	Continuing
• JI0003: *JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)*	19.802	15.128	3.875	-	3.875	0.000	0.000	0.000	0.000	0.000	38.805
• PHM018: *SPU RAPID CAPABILITY DEVELOPMENT AND DEMO (SPU RCDD)*	8.808	6.946	13.739	-	13.739	5.973	5.974	5.980	5.980	Continuing	Continuing

Remarks

D. Acquisition Strategy

MODERNIZATION PROTECTION INDIVIDUAL PROTECTION (MODPROT IP)

MODPROT IP leverages mature technology from contractor developed components to address and replace obsolete components of various fielded individual protection systems. Modernization efforts will also use items developed by the Government that have transitioned from lower to higher technology readiness levels that can be inserted into fielded systems. A combination of competitive and sole source contracts to various industry vendors and project orders to various Government activities will be used to adapt previously developed components to modernize systems. Robust component and system level testing will validate both Government and contractor furnished improvements. The improvements will be added into the specific system's updated TDP to be used in ECPs and provided to the item managers.

SPU RAPID CAPABILITY DEVELOPMENT AND DEPLOYMENT (SPU RCDD)

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IP7 / *Individual Protection (Op Sys Dev)*

The SPU RCDD overall acquisition strategy allows for rapid prototyping and testing of mission critical capabilities needed to enhance mission success, and will use technical and functional evaluations of currently-fielded items to introduce and incorporate operationally-relevant system developments. This will be accomplished through competitive contracting vehicles and by awarding agreements under the Countering Weapons of Mass Destruction Other Transaction Authority (CWMD OTA) for the development of prototype test assets. The OTA consists of a consortium of all potential industry, research institutions, and non-traditional government that could be potential solvers for the program, and will be used to procure test prototypes and test articles of possible solutions. Procurement will be through either the OTAs, a Small Business Innovative Research contract, or a more traditional contracting vehicle.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IP7 / *Individual Protection (Op Sys Dev)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT IP - HW C - Filter Prototypes & JSMLT Modernization	Various	Various : Various	0.000	1.472	Nov 2020	2.745	Nov 2021	0.000		0.000		0.000	0.000	4.217	0.000
SPU RCDD - HW S - Improved PPE Bag	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.000		0.127	Feb 2022	0.000		0.000		0.000	0.000	0.127	0.000
SPU RCDD - HW C - M-SCBA Product Development	C/CPFF	ATI Solutions : Inc., Tysons Corner, VA	0.000	0.503	May 2021	0.426	Mar 2022	0.000		0.000		0.000	0.000	0.929	0.000
SPU RCDD - HW C - EWAT Product Development	Various	MRIGlobal : Kansas City, MO	0.000	2.768	Dec 2020	2.312	Dec 2021	0.000		0.000		0.000	0.000	5.080	0.000
		Subtotal	0.000	4.743		5.610		0.000		0.000		0.000	0.000	10.353	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT IP - ES C - IPT, Engineering, Technical, Logistics Support	MIPR	Various : Various	0.000	0.301	Nov 2020	1.108	Oct 2021	0.000		0.000		0.000	0.000	1.409	0.000
SPU RCDD - ES C - Technical Support	MIPR	Various : Various	0.250	0.466	Dec 2020	0.000		0.000		0.000		0.000	0.000	0.716	0.000
		Subtotal	0.250	0.767		1.108		0.000		0.000		0.000	0.000	2.125	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT IP - DTE C - Fixed Wing Aircraft/Aircrew PPE Optimization Effort	MIPR	Various : Various	0.000	0.000		2.433	Dec 2021	0.000		0.000		0.000	0.000	2.433	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IP7 / *Individual Protection (Op Sys Dev)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT IP - DTE C - Filter Prototype Testing	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.000	1.005	Nov 2020	1.419	Dec 2021	0.000		0.000		0.000	0.000	2.424	0.000
MODPROT IP - DTE C - LJPACE Demo, System Filters	Various	Various : Various	0.000	0.113	Jul 2021	0.000		0.000		0.000		0.000	0.000	0.113	0.000
SPU RCDD - DTE C - Project Wintergreen Test and Evaluation	MIPR	U.S. Army Combat Capabilities Development Command (DEVCOM) Chemical Biological Center (CBC) : Aberdeen Proving Ground, MD	0.342	0.258	Dec 2020	0.000		0.000		0.000		0.000	0.000	0.600	0.000
		Subtotal	0.342	1.376		3.852		0.000		0.000		0.000	0.000	5.570	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MODPROT IP - PM/MS C - Program Management Support	MIPR	Various : Various	0.000	0.110	Jul 2021	0.622	Jan 2022	0.000		0.000		0.000	0.000	0.732	0.000
SPU RCDD - PM/MS C - Program Management Support	Various	Various : Various	0.947	0.609	Nov 2020	0.532	Nov 2021	0.000		0.000		0.000	0.000	2.088	0.000
		Subtotal	0.947	0.719		1.154		0.000		0.000		0.000	0.000	2.820	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) IP7 / *Individual Protection (Op Sys Dev)*	

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.539	7.605		11.724		0.000		0.000		0.000	0.000	20.868	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IP7 / *Individual Protection (Op Sys Dev)*

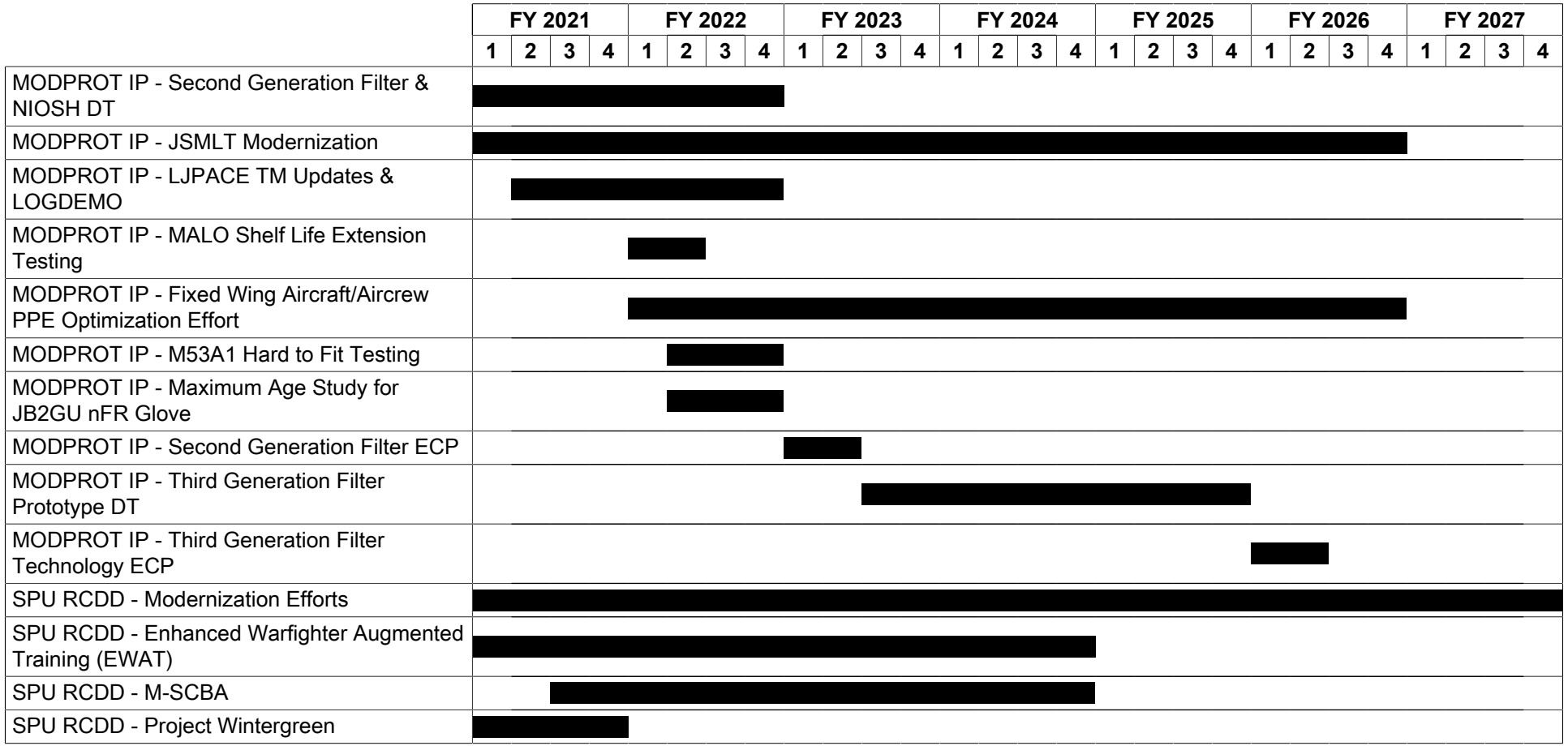

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IP7 / *Individual Protection (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MODPROT IP - Second Generation Filter & NIOSH DT	1	2021	4	2022
MODPROT IP - JSMLT Modernization	1	2021	4	2026
MODPROT IP - LJPACE TM Updates & LOGDEMO	2	2021	4	2022
MODPROT IP - MALO Shelf Life Extension Testing	1	2022	2	2022
MODPROT IP - Fixed Wing Aircraft/Aircrew PPE Optimization Effort	1	2022	4	2026
MODPROT IP - M53A1 Hard to Fit Testing	2	2022	4	2022
MODPROT IP - Maximum Age Study for JB2GU nFR Glove	2	2022	4	2022
MODPROT IP - Second Generation Filter ECP	1	2023	2	2023
MODPROT IP - Third Generation Filter Prototype DT	3	2023	4	2025
MODPROT IP - Third Generation Filter Technology ECP	1	2026	2	2026
SPU RCDD - Modernization Efforts	1	2021	4	2027
SPU RCDD - Enhanced Warfighter Augmented Training (EWAT)	1	2021	4	2024
SPU RCDD - M-SCBA	3	2021	4	2024
SPU RCDD - Project Wintergreen	1	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program											Date: April 2022	
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*				Project (Number/Name) IS7 / *Information Systems (Op Sys Dev)*			
COST ($ in Millions)	**Prior Years**	**FY 2021**	**FY 2022**	**FY 2023 Base**	**FY 2023 OCO**	**FY 2023 Total**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**Cost To Complete**	**Total Cost**
IS7: *Information Systems (Op Sys Dev)*	-	3.122	15.281	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	18.403
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for the upgrade and modernization of fielded Information Systems. During this phase efforts will execute modernization, bug fixes, provide support at fielded locations, and maintain training and logistics support. In FY2023, the CBDP RDT&E Projects have been restructured to align to the CBDP portfolio. IS7 efforts in FY2022 progress to the Understand (UN7) portfolio. This restructuring is intended to provide standardization and alignment across CBDP research, development and acquisition efforts.

Efforts included in this Project are:

(1) Chemical Biological Radiological Nuclear Information Systems (CBRN IS),
(2) Software Support Activity (SSA), and
(3) Modernization Chemical Biological Radiological Nuclear Information Systems (MOD CBRN IS) **Progresses to UN7 in FY2023**

The CBRN IS program provides a collaborative Cloud hosted environment that allows users to collect and disseminate CBRN warning and reporting data, provide detailed CBRN hazard predictions, aid in decision support, and make relevant CBRN defense information available in near-real time. CBRN IS provides an environment that supports the implementation of CBRN Support to Command and Control (CSC2) capabilities that allow users to access netted sensor information, data fusion, disease modeling, biosurveillance data, source term estimation data, incident management tools, and planning and analysis capabilities. The CBRN IS enterprise makes CBRN decision aids readily accessible from any desktop through a web browser simplifying interoperability, reducing integration and deployment costs and increases cybersecurity protection. The CBRN IS program transitions to MOD CBRN IS in FY22.

The SSA program provides for enterprise services in the areas of software development, system/network architectures, cybersecurity, information Assurance, standards and policies and interoperability. The SSA emphasizes development of reference implementations to guide Government and industry system and software developers to ensure that their products meet risk management framework compliance and common interoperability standards such as the Integrated Sensor Architecture (ISA). The SSA effort transitions to MOD CBRN IS program in FY22.

The MOD CBRN IS program provides for the management of CBRN IS, Joint Effects Model (JEM), Joint Warning and Reporting Network (JWARN) and the Software Support Activity (SSA) under one family of systems. MOD CBRN IS provides for the continuous engineering and developmental efforts to modernize and conduct post production and deployment support to fielded CBRN software information systems and capabilities. This project supports software applications and information systems that help shape and inform the battlespace against CBRN threats. MOD CBRN IS encompasses the processes, procedures, people, material and information required to support and modernize fielded CBRN information systems and applications. Activities include: continuous engineering including software code updates and

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IS7 / *Information Systems (Op Sys Dev)*

modernization to correct deficiencies, comply with Joint and Service C2 system architectural changes, cybersecurity, test and evaluation, configuration management, software redistribution, documentation, and training.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) CBRN IS ***Description:*** Modernization Efforts	1.986	-	-
Title: 2) SSA ***Description:*** Enterprise Services	1.136	-	-
Title: 3) MOD CBRN IS ***Description:*** CBRN Information Systems Modernization ***FY 2022 Plans:*** Perform management, preplanned product improvements and continuous engineering efforts to modernize currently fielded capabilities of Joint Effects Model (JEM), Joint Warning and Reporting Network (JWARN), and CBRN IS hosted on cloud and Joint Service Command and Control (C2) systems. Update host architectures, operating systems, cyber security requirements and NATO standards in order to maintain interoperability, efficiency and functionality and compliance. Continue Government developmental and operational testing on software updates and modernization efforts. Provide program/financial management, costing, contracting, scheduling and acquisition oversight. Provide product support for software redeployment and training to operational forces. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred to a new Project due to budget restructure. FY23 funding ($18.995 Million) transferred to UN7. MOD CBRN IS combines CBRN IS, JEM, JWARN, and SSA under one program in FY22.	-	15.281	-
Accomplishments/Planned Programs Subtotals	3.122	15.281	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• IS4: *Information Systems (ACD&P)*	13.414	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.414
• IS5: *Information Systems (SDD)*	5.810	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.810
• UN7: *Understand (Op Sys Dev)*	0.000	0.000	42.856	-	42.856	35.884	42.602	42.603	44.196	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IS7 / *Information Systems (Op Sys Dev)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• JS5230: *MODERNIZATION CBRN INFORMATION SYSTEMS (MOD CBRN IS)*	0.074	0.611	0.656	-	0.656	0.329	0.345	0.396	0.000	0.000	2.411
• SA0006: *CBRN INFORMATION SYSTEMS (CBRN IS)*	0.512	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.512

Remarks

D. Acquisition Strategy

CBRN INFORMATION SYSTEMS

CBRN IS acquisition utilizes a Family-of-Systems (FoS) approach to align multiple capabilities to the CBRN-IS architecture and operational environment. CBRN IS leverages the concepts of CBRN Hazard Awareness and Understanding and DISA Enterprise Services to integrate current CBRN capabilities, and other information and intelligence services, applications, and systems to provide increased situational awareness and decision support to commanders for CBRN defense. The strategy supports the implementation of integrated early warning capabilities by incorporating mature science and technology products and emerging technologies from existing advanced technology demonstrations (ATD) and experimental capability demonstrations (ECD). CBRN IS utilizes the Agile software development process to provide for the spiral development and fielding of modular capability packages. CBRN IS will transition to MOD CBRN IS beginning 1QFY22.

SOFTWARE SUPPORT ACTIVITY (SSA)

Software Support Activity (SSA) is a non-acquisition, service organization that provides professional subject matter expertise support throughout the CBDP Enterprise. These services are provided by government and contract personnel with expertise in software development, network architecture, cybersecurity, technology transitions, information assurance, and standards and policies compliance, and are provided throughout the lifecycle of programs within the CBDP portfolio. These efforts facilitate the efficient development, transition, fielding, modernization, and sustainment of interoperable and integrated Chemical Biological Radiological and Nuclear (CBRN) capabilities. In FY22, SSA efforts will transition to Modernization CBRN Information Systems (MOD CBRN IS).

MODERNIZATION CBRN INFORMATION SYSTEMS (MOD CBRN IS)

MOD CBRN IS combines CBRN IS, Joint Effects Model (JEM), Joint Warning and Reporting Network(JWARN) and the Software Support Activity under one portfolio. The acquisition strategy utilizes a managed portfolio approach to align multiple capabilities in support of modernization of CBRN Information Systems. MOD CBRN IS leverages the concepts of CBRN Hazard Awareness and Understanding and the DISA milCloud Enterprise Services to integrate current CBRN capabilities and intelligence services, applications, and systems to provide increased situational awareness and decision support to commanders for CBRN defense. This strategy provides an integration platform and supports the implementation of CSC2 and other emerging technologies from advanced technology demonstrations (ATD) and

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IS7 / *Information Systems (Op Sys Dev)*

experimental capability demonstrations (ECD). MOD CBRN IS provides for the continuous engineering and modernization of fielded information systems for JEM and JWARN and Next Generation hazard prediction, warning and reporting, and CBRN decision support tool applications. MOD CBRN IS utilizes the Agile software development and IT Box to provide for the continuous spiral development, and fielding of modular capability packages. In FY23 MOD CBRN IS will transition from IS7 to UN7.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IS7 / *Information Systems (Op Sys Dev)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SSA - SW S - Development Services	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	4.235	0.508	Feb 2021	0.000		0.000		0.000		0.000	0.000	4.743	0.000
MOD CBRN IS - SW S - MOD CBRN IS- Modernization	Various	Various : Various	0.000	0.000		10.868	Oct 2021	0.000		0.000		0.000	0.000	10.868	0.000
		Subtotal	4.235	0.508		10.868		0.000		0.000		0.000	0.000	15.611	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN IS - ES S - milCloud support	MIPR	Various : Various	4.345	1.986	Dec 2020	0.000		0.000		0.000		0.000	0.000	6.331	0.000
SSA - TD/D C - Information Assurance Activities	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	4.009	0.474	Feb 2021	0.000		0.000		0.000		0.000	0.000	4.483	0.000
MOD CBRN IS - ES S - MOD CBRN IS- milCloud Support	MIPR	Various : Various	0.000	0.000		1.977	Oct 2021	0.000		0.000		0.000	0.000	1.977	0.000
		Subtotal	8.354	2.460		1.977		0.000		0.000		0.000	0.000	12.791	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MOD CBRN IS - OTHT S - MOD CBRN IS - System Testing	MIPR	Various : Various	0.000	0.000		0.803	Oct 2021	0.000		0.000		0.000	0.000	0.803	0.000
		Subtotal	0.000	0.000		0.803		0.000		0.000		0.000	0.000	0.803	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IS7 / *Information Systems (Op Sys Dev)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SSA - PM/MS C - Program Management Support	Various	Various : Various	0.168	0.154	Feb 2021	0.000		0.000		0.000		0.000	0.000	0.322	0.000
MOD CBRN IS - PM/MS S - MOD CBRN IS - Program Management Support	Various	Various : Various	0.000	0.000		1.633	Oct 2021	0.000		0.000		0.000	0.000	1.633	0.000
		Subtotal	0.168	0.154		1.633		0.000		0.000		0.000	0.000	1.955	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.757	3.122		15.281		0.000		0.000		0.000	0.000	31.160	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IS7 / *Information Systems (Op Sys Dev)*

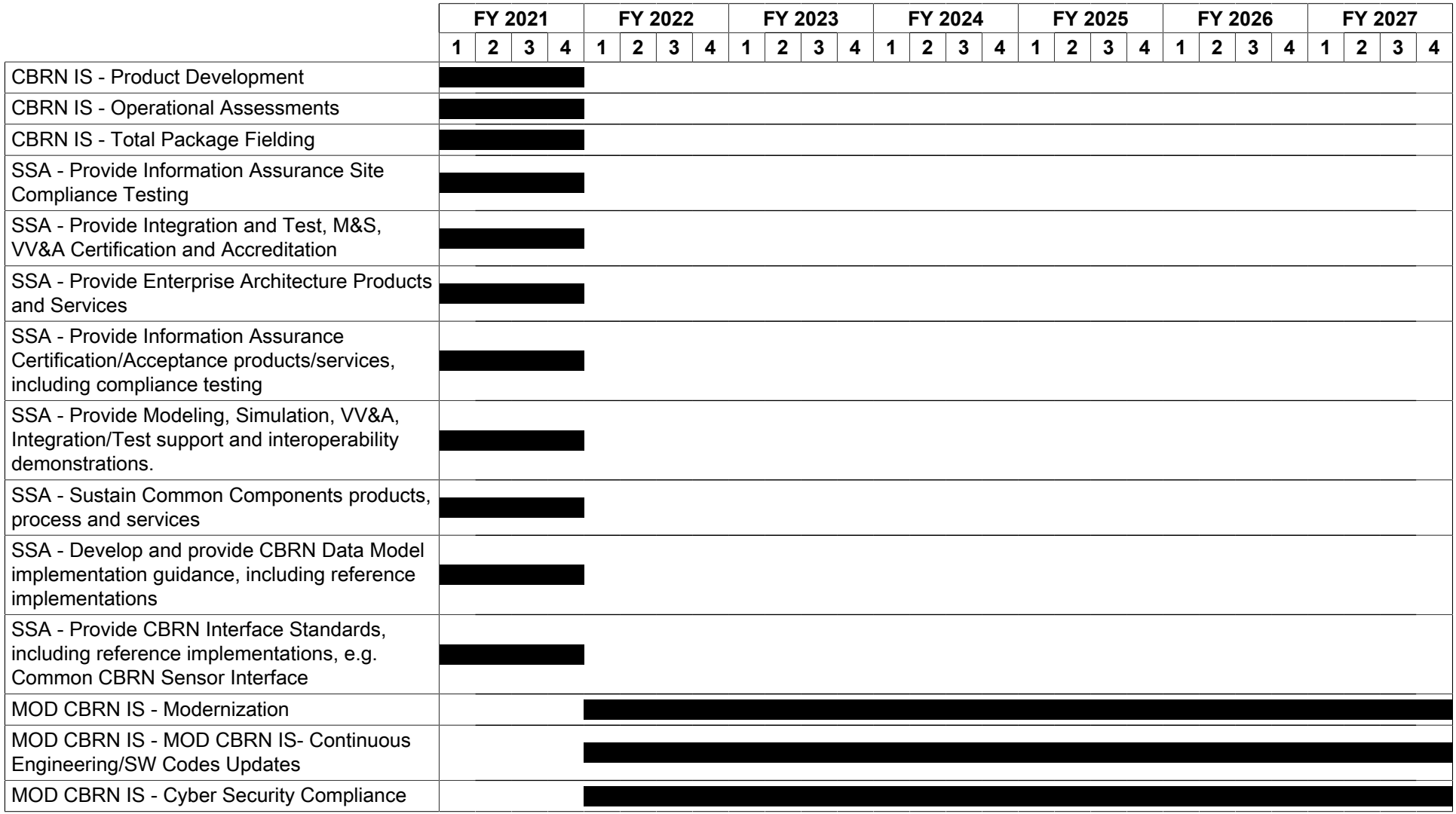

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IS7 / *Information Systems (Op Sys Dev)*

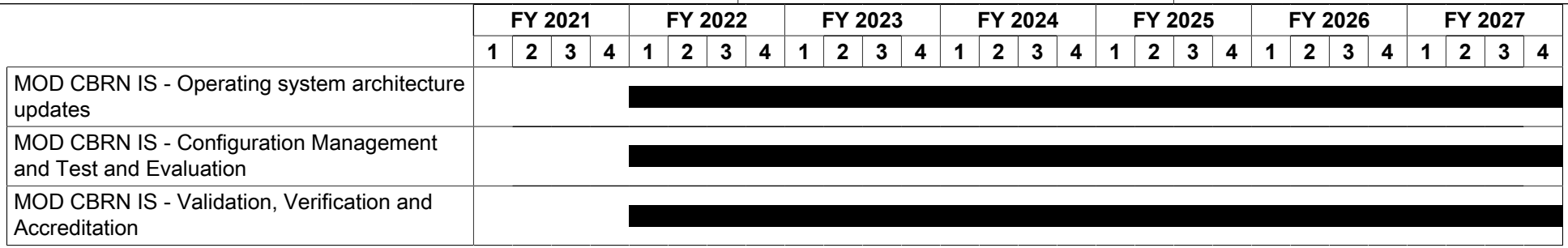

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** IS7 / *Information Systems (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CBRN IS - Product Development	1	2021	4	2021
CBRN IS - Operational Assessments	1	2021	4	2021
CBRN IS - Total Package Fielding	1	2021	4	2021
SSA - Provide Information Assurance Site Compliance Testing	1	2021	4	2021
SSA - Provide Integration and Test, M&S, VV&A Certification and Accreditation	1	2021	4	2021
SSA - Provide Enterprise Architecture Products and Services	1	2021	4	2021
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing	1	2021	4	2021
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.	1	2021	4	2021
SSA - Sustain Common Components products, process and services	1	2021	4	2021
SSA - Develop and provide CBRN Data Model implementation guidance, including reference implementations	1	2021	4	2021
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface	1	2021	4	2021
MOD CBRN IS - Modernization	1	2022	4	2027
MOD CBRN IS - MOD CBRN IS- Continuous Engineering/SW Codes Updates	1	2022	4	2027
MOD CBRN IS - Cyber Security Compliance	1	2022	4	2027
MOD CBRN IS - Operating system architecture updates	1	2022	4	2027
MOD CBRN IS - Configuration Management and Test and Evaluation	1	2022	4	2027
MOD CBRN IS - Validation, Verification and Accreditation	1	2022	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) MB7 / *Medical Biological Defense (Op Sys Dev)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MB7: *Medical Biological Defense (Op Sys Dev)*	-	1.578	3.833	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.411
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The project supports technical upgrades of fielded medical devices and systems, including diagnostic systems and nerve agent treatment systems that contribute to the layered medical defenses against biological and chemical warfare threats facing U.S. Forces on the battlefield. In FY2023, the CBDP RDT&E Projects have been restructured to align to the CBDP portfolio. MB7 efforts in FY2022 progress to the Understand (UN7) portfolio. This restructuring is intended to provide standardization and alignment across CBDP research, development and acquisition efforts.

Efforts in this Project include:

(1) Next Generation Diagnostic System 1 (NGDS 1), and
(2) MODERNIZATION MEDICAL (MOD MED) **Progresses to UN7 in FY2023**

The NGDS is a family of systems providing diagnostic capabilities that address varied chemical, biological, and radiological (CBR) threats across the different echelons of the Combat Health Support System. NGDS systems provide Food and Drug Administration (FDA) cleared diagnostics to inform individual patient treatment and CBR situational awareness and disease surveillance. NGDS 1 provides deployable and laboratory-based combat health support units with FDA cleared biological warfare agent (BWA) and infectious disease assays on an existing commercial diagnostic device. NGDS 1 transitions to MOD MED starting in FY22.

Modernization Medical (MOD MED)

The MOD MED program supports improvements to fielded systems and supports post-approval Food and Drug Administration (FDA) requirements for devices and combination products. In FY23, in addition to continuing efforts for NGDS 1 and Alternative Autoinjector Manufacturer Capability (AUTOINJ), the NGDS 2 Man Portable Diagnostic System (NGDS 2 MPDS) is transitioning to MOD MED following its Milestone C decision. Under MOD MED, program efforts include FDA required post-marketing commitments and requirements for combination products (AUTOINJ) and system hardware and software upgrades for fielded NGDS (both NGDS 1 and NGDS 2 MPDS) that are required to maintain the capability for CBR threat and infectious disease identification and FDA-cleared diagnostics to inform individual patient treatment and CBR situational awareness and disease surveillance. FY23 funding initiates development of bacterial versus viral (B vs. V) assay and Flexible Cartridge (FlexCart). The B vs. V assay will detect and distinguish between bacterial and viral infections. The FlexCart effort enables the DoD to address emerging threats using Cepheid-configured cartridges.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) NGDS 1	1.578	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MB7 / *Medical Biological Defense (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Description: System Upgrades & Support			
Title: 2) MOD MED (AUTOINJ) - Post Marketing Commitments ***Description:*** Initiate Food and Drug Administration (FDA) Post-Marketing Commitments ***FY 2022 Plans:*** Initiate Food and Drug Administration (FDA) Post-Marketing Commitments. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred to a new Project due to budget restructure. FY23 funding transferred to UN7.	-	0.899	-
Title: 3) MOD MED (NGDS 1) - System Upgrades & Support ***Description:*** System Upgrades & Support ***FY 2022 Plans:*** Continue development of additional assays and sample validation protocols. Continue annual cyber security updates and management of hardware and software configurations. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** Funding transferred to a new Project due to budget restructure. FY23 funding transferred to UN7.	-	2.934	-
Accomplishments/Planned Programs Subtotals	1.578	3.833	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• MB5: *Medical Biological Defense (SDD)*	117.157	137.348	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	254.505
• MC5: *Medical Chemical Defense (SDD)*	52.505	50.362	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	102.867
• MT5: *Mitigate (SDD)*	0.000	0.000	74.225	-	74.225	61.861	68.280	39.819	22.062	Continuing	Continuing
• UN5: *Understand (SDD)*	0.000	0.000	127.671	-	127.671	101.933	98.742	98.122	72.699	Continuing	Continuing
• UN7: *Understand (Op Sys Dev)*	0.000	0.000	42.856	-	42.856	35.884	42.602	42.603	44.196	Continuing	Continuing
• JM8788: *NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)*	0.325	1.290	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.615

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MB7 / *Medical Biological Defense (Op Sys Dev)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• SA0044: *NEXT GEN DIAG 2 MAN PORTABLE DIAGNOSTIC SYSTEM (NGDS 2 MPDS)*	0.000	4.624	3.126	-	3.126	4.915	5.374	3.006	0.538	Continuing	Continuing

Remarks

D. Acquisition Strategy

NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)

The NGDS 1: an existing Indefinite Delivery/Indefinite Quantity (IDIQ) Delivery Order contract will be utilized for any required system upgrades.

MODERNIZATION MEDICAL (MOD MED)

MOD MED, for NGDS will ensure system upgrades for both hardware and software track to latest updates, including cybersecurity, for the commercial devices from the original equipment manufacturer. MOD MED will also fund development of additional assays (i.e. tests), for fielded systems, to address emerging biological threats and diseases. For NGDS 1, an existing Indefinite Delivery/Indefinite Quantity (IDIQ) Delivery Order contract will be utilized for any required system upgrades. For NGDS 2 MPDS, an Other Transaction Authority (OTA) Project Agreement (PA) is planned, separate from the OTA PA utilized for Technology Maturation/Risk Reduction (TMRR) and Engineering and Manufacturing Development (EMD) phases of advanced development, to conduct system upgrades and assay development.

MOD MED, for AUTOINJ will ensure postmarketing commitments and requirements are anticipated as a result of the FDA approval and will be the responsibility of the performer and the government. AUTOINJ uses contracts and Other Transactional Agreements (OTAs) in which the performer shall be responsible for conducting post-approval FDA requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MB7 / *Medical Biological Defense (Op Sys Dev)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS - NGDS 1 - HW C - Assay Development/Cyber	C/CPFF	BioFire Dx : Salt Lake City, UT	17.533	0.267	Dec 2020	0.000		0.000		0.000		0.000	0.000	17.800	0.000
NGDS - HW C - NGDS 1 Product Management	Various	Various : Various	0.000	0.835	Nov 2020	0.000		0.000		0.000		0.000	0.000	0.835	0.000
MOD MED - MOD MED - Next Generation Diagnostic System 1 (NGDS 1)	C/CPFF	BioFire Dx : Salt Lake City, UT	0.000	0.000		0.519	Dec 2021	0.000		0.000		0.000	0.000	0.519	0.000
MOD MED - MOD MED - Alternative Autoinjector Manufacturer Capability (AUTOINJ)	C/CPFF	Emergent Biosolutions : Gaithersburg/ Rockville, MD	0.000	0.000		0.899	Jun 2023	0.000		0.000		0.000	0.000	0.899	0.000
MOD MED - MOD MED - Product Management	Various	Various : Various	0.000	0.000		1.061	Dec 2021	0.000		0.000		0.000	0.000	1.061	0.000
		Subtotal	17.533	1.102		2.479		0.000		0.000		0.000	0.000	21.114	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MOD MED - ES S - NGDS 1 - Technical Support	Allot	Defense Technical Information Center (DTIC) : Fort Belvoir, VA	0.000	0.000		0.150	Apr 2022	0.000		0.000		0.000	0.000	0.150	0.000
MOD MED - ES S - NGDS 1 - Technical Analysis	Allot	TBD : N/A	0.000	0.000		0.500	May 2022	0.000		0.000		0.000	0.000	0.500	0.000
		Subtotal	0.000	0.000		0.650		0.000		0.000		0.000	0.000	0.650	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) MB7 / *Medical Biological Defense (Op Sys Dev)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS - DTE S - Test & Evaluation Support	MIPR	Various : Various	6.114	0.038	May 2021	0.000		0.000		0.000		0.000	0.000	6.152	0.000
		Subtotal	6.114	0.038		0.000		0.000		0.000		0.000	0.000	6.152	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS - PM/MS S - JPM/ JPEO Management Services	Various	Various : Various	7.177	0.438	Dec 2020	0.000		0.000		0.000		0.000	0.000	7.615	0.000
MOD MED - PM/MS C - JPM/JPEO Management Services	Various	Various : Various	0.000	0.000		0.704	Dec 2021	0.000		0.000		0.000	0.000	0.704	0.000
		Subtotal	7.177	0.438		0.704		0.000		0.000		0.000	0.000	8.319	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	30.824	1.578		3.833		0.000		0.000		0.000	0.000	36.235	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MB7 / *Medical Biological Defense (Op Sys Dev)*

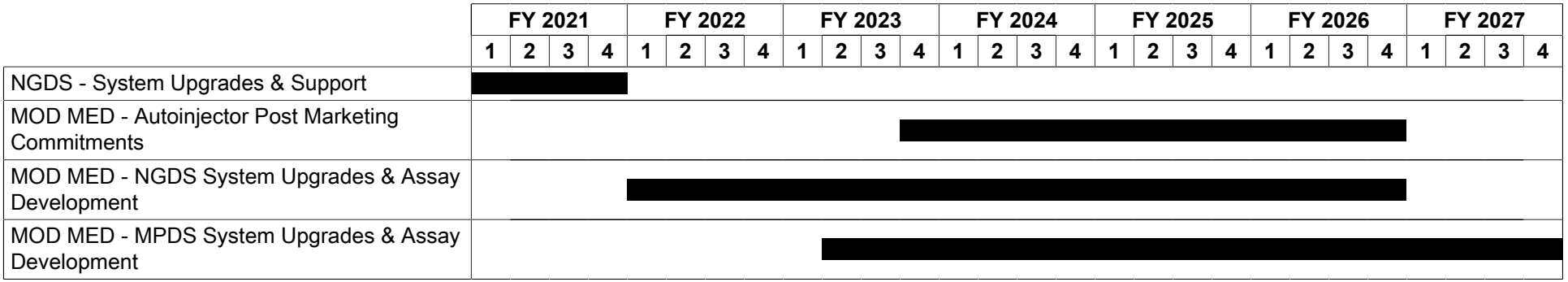

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MB7 / *Medical Biological Defense (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NGDS - System Upgrades & Support	1	2021	4	2021
MOD MED - Autoinjector Post Marketing Commitments	4	2023	4	2026
MOD MED - NGDS System Upgrades & Assay Development	1	2022	4	2026
MOD MED - MPDS System Upgrades & Assay Development	2	2023	4	2027

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program			Date: April 2022
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	Project (Number/Name) MC7 / *Medical Chemical Defense (Op Sys Dev)*	

COST ($ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
MC7: *Medical Chemical Defense (Op Sys Dev)*	-	1.754	1.336	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.090
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for the upgrade and modernization of fielded medical nerve agent treatment system that contribute to the layered medical defenses against chemical warfare agent threats facing U.S. Forces in the field. In FY2023, the CBDP RDT&E Projects have been restructured to align to the CBDP portfolio. MC7 efforts in FY2022 progress to the Mitigate (MT7) portfolio. This restructuring is intended to provide standardization and alignment across CBDP research, development and acquisition efforts.

The effort included in this project is:

(1) Improved Nerve Agent Treatment System Centrally Acting (INATS CA) **Progresses to MT7 in FY2023**

The INATS CA program provides a centrally-acting anticholinergic agent to increase survivability and decrease morbidity after exposure to toxic nerve agent threats. Scopolamine was selected for development after an extensive analysis of alternatives and review of data by the Science and Technology community. Added to the currently fielded system, the INATS-CA program will improve overall medical outcomes and will be utilized as both a vial for use at definitive care and a stand-alone auto-injector for use in the field. In FY23 INATS CA continues studies on the FDA-approved Soman Nerve Agent Pretreatment Pyridostigmine (SNAPP), a medical pre-treatment against nerve agent poisoning to upgrade its joint service utility and ensure its continued safety and efficacy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: 1) INATS - CA ***Description:*** SNAPP Shelf Life Modernization: Studies required by the FDA and/or users to modernize or upgrade medical chemical defense countermeasures.	0.532	-	-
Title: 2) INATS - CA ***Description:*** Pyridostigmine Bromide (PB) Extended Release Tablet Development ***FY 2022 Plans:*** Continued Pyridostigmine Bromide (PB) Extended Release Tablet Development. ***FY 2022 to FY 2023 Increase/Decrease Statement:***	1.222	1.336	-

Exhibit R-2A, RDT&E Project Justification: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MC7 / *Medical Chemical Defense (Op Sys Dev)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Program/project funding transferred to another funding line. FY23 funding ($3.664M) transferred to MT7			
Accomplishments/Planned Programs Subtotals	1.754	1.336	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
• MC5: *Medical Chemical Defense (SDD)*	52.505	50.362	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	102.867
• MT5: *Mitigate (SDD)*	0.000	0.000	74.225	-	74.225	61.861	68.280	39.819	22.062	Continuing	Continuing
• MT7: *Mitigate (Op Sys Dev)*	0.000	0.000	5.098	-	5.098	3.879	6.747	4.360	3.419	Continuing	Continuing
• PHM040: *IMPROVED NERVE AGENT TREATMENT CENTRALLY ACTING (INATS CA)*	0.000	0.000	0.000	-	0.000	0.000	0.000	31.888	33.051	Continuing	Continuing

Remarks

D. Acquisition Strategy

IMPROVED NERVE AGENT TREATMENT CENTRALLY ACTING (INATS CA)

For scopolamine autoinjector development INATS CA uses contracts and Other Transactional Agreements (OTAs) in which the performer shall be responsible for conducting development and testing activities consistent with current FDA regulations. The contractor shall sponsor the combination product to the FDA and hold all approvals and/or licenses. Upon FDA approval, a follow-on procurement agreement will be used to procure initial operational capability (IOC) / full operational capability (FOC).

The Soman Nerve Agent Pre-Treatment Pyridostigmine (SNAPP) effort under INATS CA is a modernization effort for pyridostigmine bromide (PB) tablet requirements from the joint service users for the FDA approved SNAPP product. The effort uses OTAs for conducting development and testing activities consistent with current FDA regulations.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MC7 / *Medical Chemical Defense (Op Sys Dev)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INATS CA - PB Extended Release	C/FFP	Amneal Pharmaceuticals : Hauppauge, NY	0.000	1.179	Sep 2021	1.148	Nov 2021	0.000		0.000		0.000	0.000	2.327	0.000
INATS CA - Shelf Life Modernization (SNAPP)	C/CPFF	CMC Pharma : Cleveland, OH	0.000	0.449	Apr 2021	0.000		0.000		0.000		0.000	0.000	0.449	0.000
		Subtotal	0.000	1.628		1.148		0.000		0.000		0.000	0.000	2.776	N/A

Remarks

AUTOINJ: In FY21, realigned $200K to INATS CA.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INATS CA - JPM/JPEO Management Services	Various	Various : Various	0.000	0.126	Dec 2020	0.116	Dec 2021	0.000		0.000		0.000	0.000	0.242	0.000
INATS CA - Program Management (MCS) Support	Various	JPM CBRN Medical : Ft. Detrick, MD	0.000	0.000		0.072	Dec 2021	0.000		0.000		0.000	0.000	0.072	0.000
		Subtotal	0.000	0.126		0.188		0.000		0.000		0.000	0.000	0.314	N/A

	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	1.754		1.336		0.000		0.000		0.000	0.000	3.090	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MC7 / *Medical Chemical Defense (Op Sys Dev)*

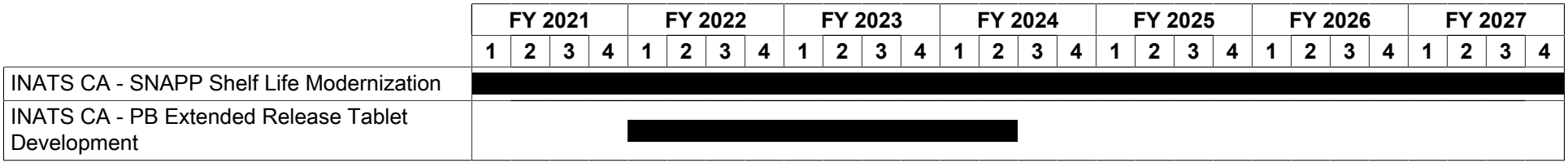

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Chemical and Biological Defense Program		Date: April 2022
Appropriation/Budget Activity 0400 / 7	**R-1 Program Element (Number/Name)** PE 0607384BP / *CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)*	**Project (Number/Name)** MC7 / *Medical Chemical Defense (Op Sys Dev)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
INATS CA - SNAPP Shelf Life Modernization	1	2021	4	2027
INATS CA - PB Extended Release Tablet Development	1	2022	2	2024