Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Chemical and Biological Defense Program	Date: February 2020
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	344.745	385.047	319.976	-	319.976	211.037	137.895	141.740	157.648	Continuing	Continuing
CA5: *Contamination Avoidance (SDD)*	-	102.827	127.833	128.954	-	128.954	64.217	32.247	28.065	29.730	Continuing	Continuing
CM5: *Homeland Defense (SDD)*	-	4.775	10.146	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.921
CO5: *Collective Protection (SDD)*	-	8.781	7.272	7.885	-	7.885	2.983	0.000	0.000	0.000	0.000	26.921
DE5: *Decontamination (SDD)*	-	15.399	7.989	16.954	-	16.954	9.729	5.074	9.793	9.317	Continuing	Continuing
IP5: *Individual Protection (SDD)*	-	10.597	12.663	12.960	-	12.960	12.858	12.796	8.963	8.436	Continuing	Continuing
IS5: *Information Systems (SDD)*	-	21.993	21.166	6.019	-	6.019	5.691	5.232	5.232	5.493	Continuing	Continuing
MB5: *Medical Biological Defense (SDD)*	-	127.933	130.074	86.460	-	86.460	56.868	45.226	68.593	83.282	Continuing	Continuing
MC5: *Medical Chemical Defense (SDD)*	-	43.648	60.220	54.392	-	54.392	52.813	31.441	15.215	15.019	Continuing	Continuing
TE5: *Test & Evaluation (SDD)*	-	8.792	7.684	6.352	-	6.352	5.878	5.879	5.879	6.371	Continuing	Continuing

A. Mission Description and Budget Item Justification

The projects in this program element (PE) support the development, build, and test of products to verify that all operational and derived requirements have been met, and to support production or deployment decisions. The activities include mature system development, integration, and demonstration to support Milestone C decisions, and conducting operational test and evaluation of production representative articles.

Individual projects include:
- Contamination Avoidance (CA5): system development of reconnaissance, detection, identification, and warning systems that minimize chemical, biological, and radiological (CBR) contamination and prevent further cross-contamination during operations.

- Homeland Defense (CM5): system development of common analytical laboratory system capabilities to conduct on-site analysis of any unknown sample and test potential life-threatening substances.

- Collective Protection. (CO5): system development of collectively protected 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.

- Decontamination (DE5): system development of Contamination Mitigation (ConMit) systems utilizing solutions that will remove/eliminate and/or detoxify contaminated material without damaging combat equipment, personnel, or the environment.

- Individual Protection (IP5): system development of the next generation protective ensembles (e.g., suits, boots, and gloves) and respiratory and ocular protection equipment (e.g., protective masks) which enable the Joint Force to operate in a contaminated CBR environment with little or no degradation to his/her performance.

- Information Systems (IS5): system development of information architectures, applications, and cybersecurity hardening for shaping the battlespace against CBR threats.

- Medical Biological Defense (MB5): product development of medical biological countermeasure platform technologies, medical biological countermeasures (vaccines and therapeutics), reagents, assays, and diagnostic equipment to provide an effective capability for medical defense against biological warfare agent threats facing U.S. Forces in the field.

- Medical Chemical Defense (MC5): product development of medical materiel and other medical equipment items (e.g., diagnostic equipment, prophylactic, pre-treatment, and therapeutic drugs, and individual/casualty decontamination compounds) necessary to provide an effective capability for medical defense against chemical warfare agent threats facing U.S. Forces in the field.

- Test and Evaluation (TE5): critical test capabilities, planning, and infrastructure improvements/modifications necessary to evaluate CBRN Defense systems in realistic operating environments.

The projects in this PE support the engineering and manufacturing development phase of the Department of Defense (DoD) acquisition system and are therefore correctly placed in Budget Activity 5.

B. Program Change Summary ($ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	358.608	384.047	293.026	-	293.026
Current President's Budget	344.745	385.047	319.976	-	319.976
Total Adjustments	-13.863	1.000	26.950	-	26.950
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	0.000	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	11.000			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	-4.750	-			
• SBIR/STTR Transfer	-9.113	-			
• Other Adjustments	0.000	-	26.950	-	26.950

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Chemical and Biological Defense Program	Date: February 2020
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*

Change Summary Explanation

Funding: FY19 (-$4.750 Million): Reprogrammings to (-$2.750 Million) support CBDP Defense Finance and Accounting System transactions and Financial Improvement & Audit Readiness and (-$2.000 Million) align filtration systems efforts to advanced technology development.
FY19 (-$9.113 Million): Transfer of funding to support Small Business Innovative Research/Small Business Technology Transfer efforts.

FY20 (+$11.000 Million): Congressional Add for Smallpox antiviral post-exposure prophylaxis.
FY20 (-$10.000 Million): Congressional Directed Reductions to the Mounted Manned Platform Radiological Detection System, the Common Analytical Laboratory System, the Software Support Activity and other system development & demonstration programs.

FY21 (+$26.950 Million): The FY21 funding request was reduced during the Defense-Wide Review (DWR) to account for programs being terminated or restructured (-$80.081 Million); Departmental economic adjustments (-$0.281 Million); and program increases to mitigate risk in the areas of detection, protection and hazard mitigation; to chemical agent detection and biological detection programs, next generation diagnostic programs, and protection programs (+$107.312 Million).

Schedule: N/A

Technical: Provides for critical new start program Forward Area Mobility Spray - System (FAMS-S).

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program			Date: February 2020
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) CA5 / *Contamination Avoidance (SDD)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
CA5: *Contamination Avoidance (SDD)*	-	102.827	127.833	128.954	-	128.954	64.217	32.247	28.065	29.730	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Engineering and Manufacturing Development and Low Rate Initial Production (EMD/LRIP) of an array of reconnaissance, detection and identification equipment, and warning systems.

Efforts included in this Project are:
(1) Mounted Manned Platform Radiological Detection System (MMPRDS)
(2) Mounted Enhanced Radiac Long Range Imaging Networkable (MERLIN)
(3) Aerosol & Vapor Chemical Agent Detector (AVCAD)
(4) Multi-Phase Chemical Agent Detector (MPCAD)
(5) Proximate Chemical Agent Detector (PCAD)
(6) CBRN Sensor Integration on Robotics Platforms (CSIRP)
(7) Enhanced Maritime Biological Detection (EMBD)
(8) the Global Biosurveillance Technology Initiatives (GBTI)
(9) Joint Biological Tactical Detection System (JBTDS)
(10) Joint Handheld Bio-Agent Identifier (JHBI)
(11) Joint Nuclear Biological Chemical Radiological System (JNBCRS) 1, also known as Stryker Nuclear Biological Chemical Reconnaissance Vehicle Sensor Suite (NBCRV SS)
(12) Non-Traditional Agent (NTA) Defense Support, and
(13) the Reactive Chemistry Orthogonal Surface and Environmental Threat Ticket Array (ROSETTA)

The MMPRDS program includes two sets of mounted radiological and nuclear sensors: the MERLIN and the Vehicle Integrated Platform Enhanced Radiac (VIPER), both of which originate with technology transitions from the Defense Threat Reduction Agency (DTRA). MMPRDS will sunset at the end of FY20. In FY21 and beyond, the Defense-Wide Review (DWR) reduced this program for higher priorities, resulting in only the MERLIN program (Project Number CA5) being pursued.

MERLIN is a set of externally mounted sensors used in joint operations on the Stryker NBCRV Sensor Suite Upgrade with the potential for integration on other Army platforms within the formation. The system supports manned and unmanned platform-mounted reconnaissance and surveillance of radiological and nuclear hazards at standoff distances. It is the first and only standoff radiological and nuclear detection capability for the Army; all previously fielded detectors require platforms to travel dangerously close to hazardous areas to detect radiological threats, which puts manned platform crews at risk of radiation exposure and presents contamination issues for the vehicle (be it manned or unmanned). The MERLIN funding lines in FY21 and beyond support integration of the MERLIN system designed for the NBCRV.

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AVCAD will fill critical gaps in current chemical sensor capabilities in the areas of aerosol Chemical Warfare Agent detection, and detection of specific advanced threat agents/Non-Traditional Agents (NTAs). The AVCAD will also detect residual vapors to prevent/mitigate health effects associated with low concentration exposures. The U.S. Military Departments view the AVCAD as a high-priority program and will use the system to support their missions, which include monitoring, collective protection, base defense, decontamination, unmasking, reconnaissance, and shipboard and aviation platform chemical detection.

The MPCAD is two-man portable system that will conduct near real-time, near-laboratory grade analysis of solid, liquid, and vapor samples collected by the operator in a presumptively contaminated area. The MPCAD results will support the Commander's tactical and operational decisions regarding maneuver, protection, decontamination, and treatment measures. The Army and Marine Corp will employ MPCAD in Dismounted Reconnaissance and Site Assessment missions to substantiate presumptive detector results. The Air Force will employ the MPCAD to support Post-Event Reconnaissance in support of Reconnaissance and Surveillance missions by monitoring the environment at airbases after a chemical release. The Air Force will continuously monitor contaminated areas for chronic health effects levels through analysis of samples from collectors deployed at the contamination site and brought back to the analyzer for identification and quantification. This information will support commander decisions to determine Mission Oriented Protective Posture (MOPP) levels and eventual termination of cordon restrictions. In FY20, MPCAD is continuing testing to support EMD development. In FY21, MPCAD will complete the EMD phase and prepare for Milestone C / LRIP decision in FY22.

The PCAD provides the Joint Services a handheld capability to locate and detect trace amounts of NTA liquids and a chemical capability for solid surface detection. Efforts to mature technologies during Technology Maturation Risk Reduction (TMRR) phase resulted in systems that were too heavy and cumbersome to use. Program office is working with users and JSTO to identify technologies to mature that may meet the users' needs for a hand held, non-contact, areal detection system. Concurrently with the PCAD TMRR efforts, Combat Capabilities Development Command (CCDC) Chemical Biological Center (CBC) was exploring the use of adapting the Joint Chemical Agent Detector (JCAD) to detect explosives. A JCAD is inserted into a cradle that has a heated inlet and modified library to detect explosives. The effort was expanded for the system to detect NTAs, and Pharmaceutical Based Agents (PBAs) and is called JCAD Solid/Liquid Adapter (SLA). The JCAD SLA kit is planned to be added to the M4A1 JCAD program as an Additional Authorized List (AAL) item. In FY20 the JCAD SLA will use the JCAD BA7 line.

CSIRP is a prototyping and fielding effort that will miniaturize and integrate modular CBRN sensors with Unmanned Air Systems (UAS) and Unmanned Ground Vehicles (UGV) Programs of Record (PORs). CSIRP will provide situational awareness across the echelons of command in order to enable freedom of maneuver and action on the battlefield. An integrated CSIRP capability will exploit advances in machine learning and autonomy. Additional capabilities include sensing and communication, timely and accurate detection, warning and reporting of CBRN hazards. This reduces risk at tactical and operational echelons in mounted and dismounted configurations. CSIRP gives the Joint Force an opportunity to enhance capabilities and maintain operational advantage in multi domain operations.

The EMBD is the Navy's automated biological point detection, collection and identification system. EMBD replaces/upgrades the 135 Joint Biological Point Detection Systems (JBPDS) currently fielded to the Navy and provides 40 systems for new construction ships. EMBD improves detection sensitivity providing the Navy the ability to "detect to inform" reducing the number of contaminated ships during a biological warfare agent attack and minimizing sailor casualties. EMBD reduces false alarm rates, modernizes the computing architecture and increases reliability and sailors confidence in the system. These improvements decrease fleet O&S costs, and reduces the obsolescence issues with current biological detection capability. The EMBD program will test, produce, integrate and field a lower cost biological point

detection system. In FY20, EMBD will complete EMD (Engineering and Manufacturing Development) DT/OT (Developmental Testing/Operational Testing) and move to Milestone C.

GBTI will research and characterize laboratory networks and develop algorithms to identify key nodes, having the greatest potential to compress the time between disease event initiation and the production of actionable data. In FY19, GBTI will close. The Targeted Acquisition of Reference Materials Augmenting Capabilities (TARMAC) will track projects of mutual interest, formerly under GBTI, with the Chemical Biological Defense Program. The Targeted Acquisition of Reference Materials Augmenting Capabilities (TARMAC) an initiative under Defense Biological Product Assurance Program (DBPAO) will leverage the investments made under GBTI. The (TARMAC) effort will transition to the Defense Biological Products Assurance Program (DBPAP) project MB5 line in FY20.

The JBTDS is the first tactical lightweight, low-cost biological surveillance system to detect, collect, and identify Biological Warfare Agent (BWA) aerosols. JBTDS components are man-portable, battery-operable and easy to employ by any military user. JBTDS provides notification of a hazard and enhances battle space awareness to protect and preserve the forces and is capable of archiving a sample for follow up analysis. When networked, JBTDS augments existing biological detection systems providing a theater-wide array capable of biological detection, identification and warning to support time sensitive force protection decisions. The JBTDS provides surface sampling capability which interfaces with the JBTDS identifier to support sensitive site exploitation missions. In FY20, JBTDS will complete development of components and deliver systems for record test and evaluation.

The JHBI program is a Joint Service Acquisition Category (ACAT) III program consisting of two increments to address an existing United States Special Operations Command (USSOCOM) requirement for handheld, multiplexed, environmental, bio-agent identification. The JHBI program was initiated under the JBTDS program and transitioned to its own funding line in FY18. JHBI will provide two different handheld bio-identification systems for the rapid and accurate identification of organisms at the point of contact for multiple mission types. The proposed JHBI systems will be handheld, Polymerase Chain Reaction-based, multiplexed devices for the analysis of powder or liquid environmental biological samples. JHBI capabilities will provide Special Operations Forces with timely and accurate identification of eight or more bio-agents at the point of need. JHBI 1 is anticipated to serve as a supplemental capability to the BioFire RAZOR with JHBI 2 fielding the complete replacement of the RAZOR by FY20.

The JNBCRS 1, including the Styker NBCRV SSU, provides maneuver formations the ability to conduct mounted reconnaissance and surveillance missions of CBRN named areas of interest (NAIs). The NBCRV SSU will answer the commander's priority intelligence requirements (PIR), and facilitate proactive risk-based decisions to ensure freedom of action and survivability. A modern and capable NBCRV SSU is a critical component for Joint Force success when operating in the complex CBRN environment. Operating with combat vehicles fighting against increasingly capable and determined enemies requires like capability with regard to protection, mobility, and lethality. The NBCRV SSU will accomplish this by integrating the capability for command and control of unmanned systems with CBRN payload. The NBCRV SSU will provide a CBRN detection, tipping and queuing system to accomplish desired standoff distances to keep the warfighter out of harm's way and reduce sustainment costs over the current system. A Chemical Surface Detector (CSD) will be developed to replace the Dual Wheel Sampling System to increase maneuver speed when conducting NBC missions and increase reliability. This schedule was accelerated from the previous schedule based on the maturity of the sensor and guidance from the Chief of Staff of the Army. In FY20, NBCRV SSU program will develop a prototype of integrated sensors for demonstration in Joint Warfighter Assessment 2020.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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The NTA Defense program is the lead for DoD, Interagency, and international work pertaining to Pharmaceutical Based Agents (PBAs) and other emerging threats. The NTA Defense program assesses existing and new portfolio capabilities against PBAs and other emerging threats to develop dedicated initiatives and projects to transition information, technologies, and capabilities into acquisition programs across all non-medical commodity areas. System prototyping, modification, and integration efforts serve to advance capabilities, reduce risk, and provide improved knowledge for decision making.

The ROSETTA is a modernization effort to provide a higher confidence chemical liquid hazard detection ticket in the currently fielded M256A2 kit for the Warfighter to make timely decisions. These decisions will reduce casualties and improve the combat effectiveness of troops engaged in conflicts involving the use of chemical warfare agents. ROSETTA is based on colorimetric technology and will be eye-readable and ease the Warfighter from current training and operational burden. In addition, the ROSETTA ticket will provide improved hazard detection performance with reduced false alarm rate, potential for increased number of chemicals detected, reduced detection time especially for certain compounds of interest, and potential for integration onto unmanned platforms. The ROSETTA funding will complete the development and testing of the new ROSETTA ticket as well as update the currently fielded M256A2 technical data package via an engineering change proposal (ECP) to create a new M256A3 kit that will be available to all Services. In FY20, ROSETTA will award contract(s) for technical data package testing.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 1) Mounted Manned Platform Radiological Detection System (MMPRDS)	2.743	6.031	-
Description: Capability Development (Vehicle Integrated Platform Enhanced Radiac (VIPER) and Mounted Enhanced Radiac Long Range Imaging Networkable (MERLIN)) ***FY 2020 Plans:*** Continue system development via industry/contracts with a focus on NBCRV integration. Conduct sensor-level production qualification testing for VIPER and MERLIN, which covers: radiation detection performance, environmental survivability (MIL-STD-810, -461, -464), CBRN survivability, cybersecurity, and human factors. For VIPER, execute operational assessment using Stryker NBCRVs. Conduct production verification testing for both VIPER and MERLIN. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being restructured, resulting in only the MERLIN program being pursued under Project Number CA5. MMPRDS will sunset at the end of FY20.			
Title: 2) Mounted Enhanced Radiac Long Range Imaging Networkable (MERLIN)	-	-	1.294
Description: Risk reduction efforts for integration onto Army platforms. ***FY 2021 Plans:*** Release contract to begin design of an integration kit used to mount MERLIN onto Army platforms in the formation. ***FY 2020 to FY 2021 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Program/project funding transferred from another funding line. MERLIN will transition from MMPRDS in FY21.			
Title: 3) Aerosol & Vapor Chemical Agent Detector (AVCAD) ***Description:*** Product Development ***FY 2020 Plans:*** Continue EMD development and support various EMD test events to include: Chemical Chamber, Explosive Atmosphere, Maintenance Demonstration, shipboard false alarm, shipboard verification operation, platform integrations, ship shock and vibration, rotary and fixed wing, battlefield contaminant, physical characteristics, MIL-STD 4061, Stryker on the move, coastal operational service life and MIL-STD 810G. ***FY 2021 Plans:*** Continue EMD development contracts, Systems Engineering, and other IPTs for product development of AVCAD and award LRIP long lead items. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters. Increase for contract support to complete EMD DT, OA and purchase LRIP Long Leads in FY21	8.269	13.802	19.052
Title: 4) Aerosol & Vapor Chemical Agent Detector (AVCAD) ***Description:*** Test and Evaluation ***FY 2020 Plans:*** Continue and complete testing for: chemical chamber, explosive atmosphere, maintenance demonstration, shipboard false alarm, shipboard verification operations, platform integration, ship shock and vibration, rotatory and fixed wing integration, battlefield contaminants, physical characteristics, MIL-STD 461. Initiate tests for: Stryker on the move, coastal operational service life, and MIL-STD 810G. ***FY 2021 Plans:*** Complete chemical chamber testing, conduct multiple test requirements to support operational assessment in support of Milestone C decision. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters. Increase to complete remainder of EMD Record DT, and execute OA.	1.319	3.980	8.840
Title: 5) Aerosol & Vapor Chemical Agent Detector (AVCAD)	1.239	4.027	3.155

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Description: Program Management Support ***FY 2020 Plans:*** Continue Program Management including Government system engineering, program/financial management, costing, personnel support, travel and overhead. ***FY 2021 Plans:*** Continue Program Management including program/financial management, costing, travel and overhead ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Decrease due to FY21 labor reallocation to appropriate cost category item under Product Development.			
Title: 6) Multi-Phase Chemical Agent Detector (MPCAD) ***Description:*** Product Development ***FY 2020 Plans:*** Continue up to two EMD contract(s), Government and contracted Integrated Product Development team, systems engineering and IPT Support. Incorporate fixes and purchase 26 test articles at $150 thousand each to conduct testing and operational assessment to support Milestone C decision. ***FY 2021 Plans:*** Continue two EMD contract(s), Government and contracted Integrated Product Development team, systems engineering and IPT Support. Conduct Milestone C / Low Rate Initial Production (LRIP) and purchase 15 test articles to conduct LRIP testing and operational testing in FY22. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	18.359	17.477	18.525
Title: 7) Multi-Phase Chemical Agent Detector (MPCAD) ***Description:*** Testing ***FY 2020 Plans:*** Complete Library Build and system verification. Initiate and conduct DT Interoperability Test, Cyber Security Vulnerability Test, Chemical Biological Radiological Contamination Survivability (CBRCS) Test, DT Environmental (MIL-STD-810G) Test, DT Explosive Atmosphere Test, DT False (Positive) Alarm Test, DT Natural Desert Environmental Storage Test, DT Electromagnetic Survivability Test, DT/OT Chemicals Test, DT Chemical Chamber Test, DT Maintenance Demonstration, DT Post Field Test,	2.436	13.166	9.931

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
and OT Limited User Test. Continue Other Government Agency (OGA) support of development and testing of MPCAD systems including development of logistics product, test plans, and conducting tradeoff discussions. ***FY 2021 Plans:*** Complete EMD testing started in FY20. Prepare for Milestone C / Low Rate Initial Production (LRIP) and purchase 15 test articles to conduct LRIP testing and operational testing in FY22. Continue OGA support of development and testing of MPCAD systems including development of logistics products, test plans, and reports. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. FY20 funds majority of EMD testing; with FY21 funding completion of testing.			
Title: 8) Multi-Phase Chemical Agent Detector (MPCAD) ***Description:*** Program Management Support ***FY 2020 Plans:*** Continue Program Management including Government system engineering, program/financial management, costing, personnel support, travel and overhead. ***FY 2021 Plans:*** Continue Program Management including Government system engineering, program/financial management, costing, personnel support, travel and overhead. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	2.119	5.189	5.501
Title: 9) Proximate Chemical Agent Detector (PCAD) ***Description:*** EMD Contract & Test and Evaluation	8.296	-	-
Title: 10) CBRN Sensor Integration onto Robotic Platforms (CSIRP) ***Description:*** Product Development, Program Management, Support, Testing and Evaluation ***FY 2021 Plans:*** Continue multiple sensor integration efforts for unmanned ground and air platforms. Continue coordination of demonstrations and test events for end users evaluating the capabilities of the integrated sensors onto the Unmanned Air Systems (UAS)	-	-	11.251

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
and Unmanned Ground Vehicles (UGV). Program management including government system engineering, program/financial management, costing, personnel support, travel and overheard. Initiate evaluation of capability and development of CONOPS. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project transitioned to Advanced Development.			
Title: 11) EMBD ***Description:*** Product Development ***FY 2020 Plans:*** Continue Government system engineering, program/financial management, and costing in support of the EMBD program. Complete acquisition of systems support for contractor developmental testing (DT) and government DT/ Operational Assessment (OA). Finalize Software (SW) support for test and OA, and finalize SW support and transition to Prime Contractor. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase. EMD completes in FY20	10.452	5.947	-
Title: 12) EMBD ***Description:*** Program management support and Test & Evaluation ***FY 2020 Plans:*** Continue combat developer, test community and service representation during EMD Phase. Continue program management support including Government system engineering, program/financial management, costing, personnel support, travel and overhead. Initiate and complete logistics demonstration and record testing. Initiate and complete Operation Assessment, Cooperative Vulnerability and Penetration Assessment(CVPA) and Operational Testing. Initiate and complete whole system live agent aerosol testing. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase. OT is only being conducted in FY20	4.123	7.220	-
Title: 13) GBTI ***Description:*** The Global Biosurveillance Technology Initiative (GBTI) will research and characterize laboratory networks and develop algorithms to identify key nodes, having the greatest potential to compress the time between disease event initiation and the production of actionable data. In FY19, GBTI will close. The Targeted Acquisition of Reference Materials Augmenting Capabilities (TARMAC) will track projects of mutual interest, formerly under GBTI, with the Chemical Biological Defense Program. The Targeted Acquisition of Reference Materials Augmenting Capabilities (TARMAC) an initiative under Defense Biological	1.100	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Product Assurance Program (DBPAO) will leverage the investments made under GBTI. The (TARMAC) effort will transition to the Defense Biological Products Assurance Program (DBPAP) project MB5 line in FY20			
Title: 14) JBTDS: Product Development ***Description:*** EMD Contract & Program Management ***FY 2020 Plans:*** Continue Government system engineering, program/financial management, and costing in support of the JBTDS program. Complete EMD contract for product development, on-the-move capability testing and development, networking solution, program management support, and product team support. ***FY 2021 Plans:*** Continue Government systems engineering, program/financial management, and costing in support of the JBTDS program. Continue EMD contract to support testing events. Complete EMD testing and prepare for milestone C decision. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	9.820	6.319	6.610
Title: 15) JBTDS: Program Support ***Description:*** Test & Evaluation ***FY 2020 Plans:*** Complete sensor calibration. Complete the verification and validation of military utility model/Chemical Biological Attack Consequence Estimator (CBACE). Continue combat developer and test community support. Continue program management support including Government system engineering, program/financial management, costing, personnel support, travel and overhead. Complete production of Biological Warfare Agent (BWA) for testing. Complete live agent and collector characterization developmental testing. ***FY 2021 Plans:*** Continue combat developer and test support. Complete EMD testing which include Detector/Collector aerosol agent testing, agent identification testing, collector characterization, false alarm testing, Mil-STD, interoperability, outdoor simulant testing, logistics demonstration, operational assessment, cyber adversarial assessment, and modeling and simulation. Continue updates to the JBTDS Test & Evaluation Master Plan (TEMP) to prepare for milestone C decision. ***FY 2020 to FY 2021 Increase/Decrease Statement:***	8.069	8.033	7.452

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Minor change due to routine program adjustments.			
Title: 16) JHBI ***Description:*** JHBI three9-Integrated Sample Prep (ISP) system development, developmental testing, and operational assessment.	1.632	-	-
Title: 17) JNBCRS 1 (NBCRV SSU) ***Description:*** CBRN Sensor Development and Integration ***FY 2020 Plans:*** Continue CBRN sensor and integrated sensor suite prototype development, maturation, and procurement. Continued government strategic planning, systems engineering, logistics, training, test and evaluation, technical support, and the bulk of integration product development for the acceleration of the program. ***FY 2021 Plans:*** Continue CBRN sensor and integrated sensor suite prototype development, maturation, and procurement. Continue government strategic planning, systems engineering, logistics, training, test and evaluation, technical support, and the bulk of integration product development for the acceleration of the program. Will also perform system level development testing. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	18.677	24.587	22.144
Title: 18) JNBCRS 1 (NBCRV SSU) ***Description:*** Program Management Support ***FY 2020 Plans:*** Continue Program Management including Government system engineering, program/financial management, costing, personnel support, travel and overhead. ***FY 2021 Plans:*** Continue Program Management including Government system engineering, program/financial management, costing, personnel support, travel and overhead. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	1.374	4.340	4.718
Title: 19) NTA Defense	1.054	2.900	3.679

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Description: Non-Traditional Agent (NTA) Defense program provides assessment, modification, and testing of detection, protection, and decontamination capabilities to protect the Joint Services against emerging threats, with current focus on Pharmaceutical Based Agents (PBAs). Specific efforts include: purchase, test, and assessment of Commercial Off the Shelf/ Government Off the Shelf (COTS/GOTS) equipment; development of prototype equipment for rapid fielding to the Joint Services; update detection equipment survey to include current devices and a web interface for information sharing; and survey equipment and techniques to provide improved sample collection and decontamination of PBAs. ***FY 2020 Plans:*** Continue COTS detection market survey with new technologies and conduct user evaluation of web interface to provide improved customer usability. Purchase, test, and assess emerging COTS detection equipment and protective equipment materials against PBAs in many forms (solid/liquid/vapor/aerosol/dusty). Test prototype sampling device to allow users to safely handle and test chemical compounds in the field. Modify and test lightweight prototype detector that meets detection requirements while reducing burden on users. ***FY 2021 Plans:*** Continue purchase of detection prototypes for user assessment. Continue performance assessment of existing capabilities against PBAs. Finalize development of prototype decontamination system. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters. FY21 program management funds reallocated within NTA Defense CA5 to this line to align with the appropriate planned funds.			
Title: 20) NTA Defense ***Description:*** Government Integrated Product Team program management and IPT Support. ***FY 2020 Plans:*** Continue Program Management including Government system engineering, program/financial management, costing, personnel support, travel and overhead. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease due to change in program/project technical parameters. FY21 program management funds reallocated within NTA Defense CA5 from this line to align with the appropriate planned funds.	-	0.751	-
Title: 21) ROSETTA ***Description:*** Product Development	1.746	4.064	6.802

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: Continue award of OTA to complete the development and testing of prototype effort. ***FY 2021 Plans:*** Continue OTA contract and complete testing of ROSETTA prototypes, support operational demonstrations of prototypes and development of technical data package for transition to production. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to change in program/project schedule. ECP to existing M256A2 kit			
Accomplishments/Planned Programs Subtotals	102.827	127.833	128.954

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• CA4: *Contamination Avoidance (ACD&P)*	30.879	19.074	10.326	-	10.326	9.853	17.868	14.727	14.294	Continuing	Continuing
• JF0100: *JOINT CHEMICAL AGENT DETECTOR (JCAD)*	1.698	2.246	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.944
• MC0100: *JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)*	0.000	0.300	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.300
• MC0101: *CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)*	98.231	58.020	47.393	-	47.393	47.009	66.488	85.905	87.775	Continuing	Continuing
• MX0001: *JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)*	0.000	0.000	0.000	-	0.000	17.492	52.290	69.255	84.824	Continuing	Continuing

Remarks

D. Acquisition Strategy

MOUNTED MANNED PLATFORM RADIOLOGICAL DETECTION SYSTEM (MMPRDS)

The MMPRDS program transitioned the VIPER and MERLIN radiological/nuclear sensor technologies from the Defense Threat Reduction Agency (DTRA), rapidly mature the systems with industry, and begin fielding via modification work orders (MWOs) to directly replace legacy mounted capabilities for the Army. Sensor development and testing will continue in FY19-20 using separate Countering Weapons of Mass Destruction (CWMD) Other Transaction Authority (OTA) for VIPER and

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MERLIN. The program plans to award production contracts in FY20 to support production verification testing and initial/rapid fielding to the Joint Nuclear Biological and Chemical Reconnaissance Systems (JNBCRS) sensor suite upgrade platform under conditional materiel release. MMPRDS will sunset at the end of FY20 and transition to a separate line of effort for MERLIN. In FY21 and beyond, the Defense-Wide Review (DWR) reduced this program for higher priorities, resulting in only the MERLIN program being pursued.

MOUNTED ENHANCED RADIAC LONG RANGE IMAGING NETWORKABLE (MMPRDS MERLIN)

The MERLIN BA5 line covers risk reduction efforts for the possible integration of the MERLIN system onto other Army platforms within the formation. The work will be accomplished through competition using an Other Transaction Authority (OTA) utilizing the Countering Weapons of Mass Destruction (CWMD) OTA.

AEROSOL VAPOR CHEMICAL AGENT DETECTOR (AVCAD)

Aerosol & Vapor Chemical Agent Detector (AVCAD) awarded two MS B Engineering and Manufacturing Development (EMD) contracts with production options. The AVCAD program is conducting risk reduction testing with prototypes prior to full EMD DT Record Testing in support of the Milestone C decision. The program intends to conduct P&D phase testing with LRIP units from both vendors if supported by EMD Record Test Data, to promote FRP price competition.

MULTI-PHASE CHEMICAL AGENT DETECTOR (MPCAD)

The Multi-Phase Chemical Agent Detector (MPCAD) (formerly NGCD 3) is using a streamlined acquisition strategy. The MPCAD EMD contract(s) are utilizing the Countering Weapons of Mass Destruction (CWMD) Other Transaction Authority (OTA) for EMD and LRIP items. The MPCAD will procure production items through a follow-on CWMD OTA or Federal Acquisition Regulation based contract. The program will develop and validate the systems during EMD utilizing two contractors to increase competition.

PROXIMATE CHEMICAL AGENT DETECTOR (PCAD)

The Proximate Chemical Agent Detector (PCAD) (formerly NGCD 2) Analysis of Alternatives (AoA) reassessed the PCAD Capability requirement with each of the Joint Services and determined the state of technologies necessary to meet the user's capability needs are not yet mature. The program will transition back to S&T to further mature technology via a competitive contract in FY21. In the interim, the program office will support the operational test of the JCAD SLA kit and complete the logistical analysis to incorporate the JCAD SLA kit as an Additional Authorized List (AAL) item to the M4A1 JCAD.

CBRN SENSOR INTEGRATION ON ROBOTIC PLATFORMS (CSIRP)

CSIRP is a streamlined acquisition effort to rapidly prototype and field capabilities distinct from the traditional acquisition system. CSIRP will provide unmanned CBRN payload prototypes in 2 year prototyping plan cycles based on service requirements. The prototyping plans will utilize a streamlined acquisition process in order to keep pace with industry and the rapid advancement of technologies. The CSIRP strategy is to utilize the rapid prototyping process enabled by the Other Transactional

Agreements (OTA) contract vehicle. Upon award, the awardees will have up to two years to produce prototype CBRN sensors that are integrated onto service chosen (air and/or ground) platforms. These prototypes will be demonstrated, evaluated and tested by the services as well as laboratories and academia. The most successful will be transitioned to the services for the next steps in acquisition, production and eventual fielding across the services. BA4 funding will provide market research to support the refinement and the building of technologically mature prototypes. BA5 funding will provide demonstrations, testing and operational assessments to support transition decisions to POR or sustained capability of the prototypes.

ENHANCED MARITIME BIOLOGICAL DETECTION (EMBD)

The Enhanced Maritime Biological Detection (EMBD) program uses a streamlined acquisition strategy and acquired a Milestone B decision in June 2018. EMBD will replace/upgrade 135 Joint Biological Point Detection Systems (JBPDS) in the Navy and provide 40 systems for new construction ships. In July 2018 EMBD awarded a contract through Joint Enterprise Research, Development, Acquisition and Production/Procurement (JE-RDAP) contract for Engineering and Manufacturing Development (EMD) with options for Low Rate Initial Production (LRIP) in FY20.

GLOBAL BIO TECH INITIATIVE (GBTI)

The Global Biosurveillance Technology Initiative (GBTI) strategy establishes a robust data stream that directly supports existing programs of record in their development of biological defense countermeasures through the characterization of laboratory networks and augmentation of key nodes within those networks. This will be accomplished through the use of a University of Affiliated Research Center (Johns Hopkins University) to characterize laboratory networks and develop decision-making tools for evaluating potential augmentation of key nodes prior to investment. The GBTI program is sun-setting. FY19 will be the last year of funding.

JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)

The Joint Biological Tactical Detection System (JBTDS) program awarded a full and open contract to Chemring Sensors and Electronic Systems (CSES) in the 3rd Quarter of FY15 for Engineering and Manufacturing Development (EMD) with options for Low Rate Initial Production (LRIP) and Full Rate Production (FRP). Based on the results at Biological Point System Assessment (BPSA), JBTDS will integrate TacBio II as the detector and Joint Handheld Biological Identifier (JHBI) as the identification capability. These technologies will offer significant production and O&S cost savings.

JOINT HANDHELD BIO-AGENT IDENTIFIER (JHBI)

The JHBI program will pursue a collaborative accelerated acquisition strategy. JHBI will use commercial items to procure candidate systems from two vendors for further development and fielding. The JHBI program acquired test-articles of a single commercial-off-the-shelf (COTS) platform with relevant assays for the JHBI Combat Evaluation (CV), which served as the decision gate for the completion of the Technology Maturation and Risk Reduction (TMRR) phase. To mitigate risk, additional technologies were identified and inserted into the JHBI program. JHBI transitioned to production in FY20.

JOINT NBC RECONNAISSANCE SYSTEM - STRYKER (JNBCRS)

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Joint Nuclear Biological Chemical Radiological System (JNBCRS), includes the Stryker Nuclear Biological Chemical Reconnaissance Vehicle Sensor Suite Upgrade (NBCRV SSU). The acquisition strategy for the Stryker NBCRV SSU is to integrate mature sensors into the Stryker NBCRV to support Joint Warfighter Assessment 2020 and system level testing. Following the testing and demonstration, the hardware and software will be fixed and updated for government developmental and operational testing. The Joint Warfighter Assessments will provide user feedback and operational data to support programmatic and technical decisions. An In Progress Review will be held after Joint Warfighter Assessment 2020 and system testing to approve a Modification Work Order for fielding. This schedule was accelerated from the previous schedule based on the maturity of the sensor and guidance from the Chief of Staff of the Army.

NON TRADITIONAL AGENT DEFENSE (NTA DEFENSE)

The NTA Defense program will transition information, technologies, and capabilities associated with Pharmaceutical Based Agents (PBAs) and other emerging threats into existing and future acquisition programs utilizing a variety of contract mechanisms.

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

ROSETTA will use a streamlined approach. This approach is based on technology that will transition from Science and Technology Efforts and industry. It will be developed using the Countering Weapons of Mass Destruction (CWMD) OTA to award multiple development contracts. The M256A3 Production Contract will use Army Working Capital Funds (AWCF) to purchase the new kits. The ROSETTA funding will complete the development and testing of the new ROSETTA ticket as well as update the currently fielded M256A2 technical data package via an engineering change proposal (ECP) to create a new M256A3 kit that will be available to all Services. The M256A3 kit will replace the M256A2 kit by attrition.

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MMPRDS - HW C MERLIN System Refinement	C/CPFF	H3D INC : Ann Arbor, MI	0.000	0.793	Feb 2019	3.532	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
MMPRDS - HW C - VIPER System Refinement	C/CPFF	Spectral Labs Inc. : San Diego, CA	0.000	0.750	Oct 2018	0.826	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
MERLIN - HW C - Army Platform Integration Kit Development	C/CPFF	TBD : N/A	0.000	0.000		0.000		1.087	Nov 2020	-		1.087	Continuing	Continuing	0.000
AVCAD - HW S - Aerosol & Vapor Chemical Agent Detector EMD Contract	C/CPIF	Chemring Detection Systems : Inc., Charlotte, NC	0.000	1.719	Jan 2019	6.901	Oct 2019	6.476	Jan 2021	-		6.476	Continuing	Continuing	0.000
AVCAD - HW S - Aerosol & Vapor Chemical Agent Detector EMD Contract #2	C/CPIF	Smiths Detection : Edgewood, MD	0.000	4.801	Jan 2019	6.901	Oct 2019	10.415	Jan 2021	-		10.415	Continuing	Continuing	0.000
AVCAD - HW C - Government SE & Technical Management Team	MIPR	Various : Various	0.000	1.657	Jan 2019	0.000		2.759	Nov 2020	-		2.759	Continuing	Continuing	0.000
AVCAD - HW C - Verification & Validation of RAM Model	MIPR	Army Materiel Systems Analysis Activity : Aberdeen Proving Ground, MD	0.000	0.065	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
AVCAD - HW C - Chemical Biological Radiological and Nuclear Contamination Survivability Assessment (CBRCSA) Paper Study	MIPR	West Desert Test Center : Dugway, UT	0.000	0.025	Feb 2019	0.000		0.100	Jan 2021	-		0.100	Continuing	Continuing	0.000
AVCAD - HW C - Shipping chemicals for V&V	MIPR	Combat Capabilities Development Command (CCDC) Chemical Biological Center : Aberdeen Proving Ground, MD	0.000	0.002	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
MPCAD - HW S - EMD Contract - FLIR	C/CPFF	FLIR Systems : Inc., West Lafayette, IN	0.000	4.678	Jan 2019	8.442	Mar 2020	7.868	Dec 2020	-		7.868	Continuing	Continuing	0.000

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MPCAD - PM/MS S - Government SE &Technical Management Team	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	1.686	Dec 2018	3.041	Jan 2020	2.014	Nov 2020	-		2.014	Continuing	Continuing	0.000
MPCAD - HW S - EMD Contract - Sig Sci	C/CPFF	Signature Science : Austin, TX	0.000	11.995	Dec 2018	5.994	Mar 2020	8.443	Dec 2020	-		8.443	Continuing	Continuing	0.000
MPCAD - HW C - OPETS Contract Support	C/FFP	Kalman & Company Inc. : Virginia Beach, VA	0.000	0.000		0.000		0.200	Feb 2021	-		0.200	Continuing	Continuing	0.000
PCAD - HW S - JCAD SLA Kit finalization	SS/CPIF	Smiths Detection : Edgewood, MD	0.000	4.492	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PCAD - HW C - PM/MS S - Government SE & Technical Management Team	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.764	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PCAD - HW C - Calibration Implementation and JCAD SLA Algorithms Expansion	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.635	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CSIRP - HW C - Prototype Integration	C/FFP	TBD : N/A	0.000	0.000		0.000		0.500	Feb 2021	-		0.500	Continuing	Continuing	0.000
CSIRP - HW C - Government Matrix and Core Labor	Various	Various : Various	0.000	0.000		0.000		1.701	Mar 2021	-		1.701	Continuing	Continuing	0.000
CSIRP - HW C - OTA Funding for Prototype Plan #1	Various	TBD : N/A	0.000	0.000		0.000		2.100	Nov 2020	-		2.100	Continuing	Continuing	0.000
CSIRP - HW C - OTA Funding for Prototype Plan #2	Various	TBD : N/A	0.000	0.000		0.000		4.900	Feb 2021	-		4.900	Continuing	Continuing	0.000
EMBD - Product Development Support	MIPR	Various : Various	1.680	1.277	Nov 2018	1.152	Mar 2020	0.000		-		0.000	Continuing	Continuing	0.000

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - OPETS contractor team	C/FFP	Patricio Enterprises : Inc., Woodbridge, VA	0.081	0.135	Mar 2019	0.130	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - Prototype Development	SS/FFP	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	1.780	1.200	Nov 2018	1.000	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - HW - Prototype Development and Manufacturing	C/CPIF	Chemring Detection Systems : Inc., Charlotte, NC	5.557	7.840	Feb 2019	3.665	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - HW SB - Prototype Development	C/CPFF	ATI Solutions : Inc., Tysons Corner, VA	0.000	3.500	Mar 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - HW - EMD Contract Award	C/CPIF	Chemring Detection Systems : Inc., Charlotte, NC	28.739	2.875	Feb 2019	1.850	Nov 2019	2.360	Feb 2021	-		2.360	Continuing	Continuing	0.000
JBTDS - Product Cotractor Support Team	C/FFP	Patricio Enterprises : Inc., Woodbridge, VA	1.198	0.254	Feb 2019	0.280	Feb 2020	0.308	Feb 2021	-		0.308	Continuing	Continuing	0.000
JBTDS - Product Contractor Cost Support Team	C/FFP	Tecolote Research Inc : Arlington, VA	0.616	0.008	Feb 2019	0.157	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - Product Development Support - Labor, Travel, & GPC	MIPR	Various : Various	19.130	3.183	Nov 2018	4.032	Nov 2019	3.954	Nov 2020	-		3.954	Continuing	Continuing	0.000
JHBI - HW S - JHBI BIOMEME three9 Handheld Diagnostics System	C/CPFF	Advanced Technologies International : Summerville, SC	0.000	1.577	Feb 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JNBCRS 1 - HW-Sensor Suite Development	C/CPIF	Various : Various	6.282	1.563	Mar 2019	12.075	Nov 2019	3.600	Nov 2020	-		3.600	Continuing	Continuing	0.000
JNBCRS 1 - HW C - Contractor and Product Support	SS/CPFF	Various : Various	0.000	0.000		0.000		1.322	Nov 2020	-		1.322	Continuing	Continuing	0.000
JNBCRS 1 - HW C - Platform	C/FFP	General Dynamics Land Systems : Detroit, MI	0.800	0.058	May 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JNBCRS 1 - HW C - VIPER / MERLIN	C/CPFF	Advanced Technologies International : Summerville, SC	2.570	1.500	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JNBCRS 1 - HW C - Government Team Labor	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	1.592	0.904	Nov 2018	2.292	Nov 2019	1.869	Nov 2020	-		1.869	Continuing	Continuing	0.000
JNBCRS 1 - HW C - CSD Contract	C/CPFF	AGENTASE : LLC, Elkridge, MD	1.978	2.096	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JNBCRS 1 - HW C - CSD Contract #2	C/CPFF	L-3 Communications : Santa Rosa, CA	1.959	1.322	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JNBCRS 1 - SW C Integration	C/CPFF	FLIR Systems Inc. : Elkridge, MD	0.000	7.957	Mar 2019	0.000		11.438	Nov 2020	-		11.438	Continuing	Continuing	0.000
JNBCRS 1 - HW C - CSD Contract #3	C/CPFF	Hamilton Sundstrand Corp. : Pomona, CA	1.058	0.272	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW C - Information Management/ Strategic Coordination	Various	TBD : N/A	0.000	0.000		0.000		0.176	Dec 2020	-		0.176	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Capabilities Assessments	C/CPFF	MRIGlobal : Kansas City, MO	0.301	0.000		0.300	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Capabilities Assessments #2	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		0.400	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Capabilities Assessment	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.047	0.095	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - System Protoype and Modification	C/CPFF	Various : Various	0.000	0.000		1.500	Dec 2019	0.495	Dec 2020	-		0.495	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Government SE &	MIPR	Edgewood Chemical Biological Center	0.097	0.200	Apr 2019	0.197	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Management Team		(ECBC) : Aberdeen Proving Ground, MD													
ROSETTA - HW C - Government Team Labor	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.128	Jan 2019	0.000		0.700	Nov 2020	-		0.700	Continuing	Continuing	0.000
ROSETTA - Technical Manuals	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.000		0.400	Apr 2020	0.000		-		0.000	Continuing	Continuing	0.000
ROSETTA - Technical Data Package	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.000		0.400	Apr 2020	0.000		-		0.000	Continuing	Continuing	0.000
ROSETTA - HW C-Contract Award	C/FFP	ATI Solutions : Inc., Tysons Corner, VA	0.000	1.512	Jul 2019	0.400	Jul 2020	3.418	Dec 2020	-		3.418	Continuing	Continuing	0.000
		Subtotal	75.465	73.518		65.867		78.203		-		78.203	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MMPRDS - ES C - SEPM Support	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.387	Nov 2018	0.456	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
MERLIN - ES S - SEPM support	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.100	Nov 2020	-		0.100	Continuing	Continuing	0.000
AVCAD - Non-test OGA support	MIPR	Various : Various	0.000	0.000		4.027	Nov 2019	3.527	Jan 2021	-		3.527	Continuing	Continuing	0.000
PCAD - ES C - OGA Support PCAD - Test Planning	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.000	0.050	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PCAD - ES C - Test Oversight Support for the JCAD SLA	MIPR	Indian Head : Indian Head, MD	0.000	0.026	Mar 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
EMBD - ES - OTA/OGA USN Variant Support	MIPR	Various : Various	0.000	0.000		0.025	Mar 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - ES S - Test Planning Support	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.100	Mar 2019	0.100	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - ES S - Software support	MIPR	Armament Research : Development and Engineering Center, Piccatinny, NJ	0.093	0.075	Feb 2019	0.075	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - ES S - Test Planning Support #2	MIPR	Navy Operational Test and Eval Force (OPTEVFOR) : Norfolk, VA	0.208	0.181	Nov 2018	0.200	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - ILS S - Logistics Support	MIPR	U.S. Army Tank-automotive & Armaments Command (TACOM) : Warren, MI	0.000	0.100	Feb 2019	0.100	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - ES C - Navy Service Support	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.859	0.662	Oct 2018	0.606	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - ES - CBC - DPG	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.594	Jan 2019	0.750	Nov 2019	0.682	Jan 2021	-		0.682	Continuing	Continuing	0.000
JBTDS - ES - Engineering Support	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	2.425	0.210	Jan 2019	0.170	Nov 2019	0.197	Jan 2021	-		0.197	Continuing	Continuing	0.000

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBTDS - ES - Biosensor Calibration Effort	MIPR	Naval Research Lab (NRL) : Washington, DC	2.622	0.159	Jan 2019	0.150	Nov 2019	0.154	Mar 2021	-		0.154	Continuing	Continuing	0.000
JBTDS - ES - OTA/OGA Service Representation	MIPR	Various : Various	9.038	2.111	Jan 2019	2.735	Nov 2019	2.078	Jan 2021	-		2.078	Continuing	Continuing	0.000
JNBCRS 1 - ES - Engineering Support	MIPR	Various : Various	2.222	0.223	Nov 2018	2.750	Nov 2019	0.250	Nov 2020	-		0.250	Continuing	Continuing	0.000
JNBCRS 1 - ILS C	C/CPFF	Various : Various	0.000	0.000		0.000		1.638	Nov 2020	-		1.638	Continuing	Continuing	0.000
ROSETTA - ES C - Engineering and technical services for ROSETTA	MIPR	Various : Various	0.000	0.000		0.000		0.500	Nov 2020	-		0.500	Continuing	Continuing	0.000
		Subtotal	17.467	4.878		12.144		9.126		-		9.126	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MMPRDS - DTE -S - MERLIN DTRA Design Testing	MIPR	White Sands Missile Range (WSMR) : Mesa, AZ	0.000	0.223	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
MMPRDS - DTE S - MERLIN Production Qualification Testing	MIPR	White Sands Missile Range (WSMR) : Mesa, AZ	0.000	0.000		0.760	Mar 2020	0.000		-		0.000	Continuing	Continuing	0.000
MMPRDS - DTE S - VIPER - DTRA Design Testing	MIPR	White Sands Missile Range (WSMR) : Mesa, AZ	0.000	0.167	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
MERLIN - PM Program Management	MIPR	JPM Guardian : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.107	Nov 2020	-		0.107	Continuing	Continuing	0.000
AVCAD - DTE C - Risk Reduction Chamber Testing	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.764	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AVCAD - DTE C - T&E support	MIPR	Various : Various	0.000	0.555	Dec 2018	0.600	Nov 2020	1.395	Jan 2021	-		1.395	Continuing	Continuing	0.000
AVCAD - DTE C - Operational Assessment	MIPR	TBD : N/A	0.000	0.000		0.000		0.797	Jan 2021	-		0.797	Continuing	Continuing	0.000
AVCAD - DTE C - DT/ OT Chemical Chamber, Post Field Chamber, MOT&E, Environmental (MIL-STD-810G)	MIPR	Various : Various	0.000	0.000		1.118	Feb 2020	1.030	Mar 2021	-		1.030	Continuing	Continuing	0.000
AVCAD - DTE C - DT/ OT Cyber Security Vulnerability	MIPR	Armament Research : Development and Engineering Center, Piccatinny, NJ	0.000	0.000		0.400	May 2020	0.000		-		0.000	Continuing	Continuing	0.000
AVCAD - DTE C - DT False (Positive) Alarm, Interoperability, Platform Integration	MIPR	Various : Various	0.000	0.000		0.790	Dec 2019	0.218	Jan 2021	-		0.218	Continuing	Continuing	0.000
AVCAD - DTE C - DT Coastal Operational Service Life	MIPR	U.S. Naval Research Lab (NRL) : Key West, FL	0.000	0.000		0.210	Apr 2020	0.100	Jan 2021	-		0.100	Continuing	Continuing	0.000
AVCAD - DTE C - DT Explosive Atmosphere Test	MIPR	Electronic Proving Ground : Fort Huachuca, AZ	0.000	0.000		0.053	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
AVCAD - DTE C - DT Rotary Wing Compatibility Test	MIPR	Naval Air Warfare Center (Aircraft Division) : Patuxent River, MD	0.000	0.000		0.053	Jan 2020	0.028	Jan 2021	-		0.028	Continuing	Continuing	0.000
AVCAD - DTE C - DT Shipboard Operation Verification	MIPR	Potomac Test Range : Potomac Mills, VA	0.000	0.000		0.315	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
AVCAD - DTE C - DT MIL-STD 901D - Ship Shock; MIL-STD 167-1 Vibration	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren	0.000	0.000		0.053	Feb 2020	0.025	Jan 2021	-		0.025	Continuing	Continuing	0.000

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Center : Dahlgren, VA													
AVCAD - DTE C - DT Battlefield Contaminant/ Maintenance Demo	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.000		0.183	Feb 2020	0.028	Jan 2021	-		0.028	Continuing	Continuing	0.000
AVCAD - DTE C - DT Electromagnetic Survivability	MIPR	White Sands Missile Range (WSMR) : Mesa, AZ	0.000	0.000		0.180	Feb 2020	0.075	Mar 2021	-		0.075	Continuing	Continuing	0.000
AVCAD - DTE C - DT Fixed Wing Compatibility	MIPR	Edwards Air Force Base : Lancaster, CA	0.000	0.000		0.025	Feb 2020	0.011	Jan 2021	-		0.011	Continuing	Continuing	0.000
MPCAD - DTE C - OGA Program Support	MIPR	Various : Various	0.000	0.000		0.000		0.095	Dec 2020	-		0.095	Continuing	Continuing	0.000
MPCAD - DTE C - OGA Test Support	MIPR	Various : Various	0.000	0.326	Dec 2018	0.797	Feb 2020	0.658	Jan 2021	-		0.658	Continuing	Continuing	0.000
MPCAD - DTE C - DT Interoperability	MIPR	Eglin AFB : Eglin Air Force Base, FL	0.000	0.000		0.400	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
MPCAD - DTE C - DT Cyber Security Vulnerability	MIPR	Army Research Lab (ARL) : Adelphi, MD	0.000	0.000		0.100	Feb 2020	0.100	Feb 2021	-		0.100	Continuing	Continuing	0.000
MPCAD - DTE C - Chemcial Biological Radiological Contamination Survivability (CBRCS)	MIPR	West Desert Test Center : Dugway, UT	0.000	0.000		0.000		0.175	Jan 2021	-		0.175	Continuing	Continuing	0.000
MPCAD - DTE C - Physical Characteristics and Signature	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.000		0.000		0.005	Dec 2020	-		0.005	Continuing	Continuing	0.000
MPCAD - DTE C - Environmental (MIL-STD-810G)	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.755	Dec 2020	-		0.755	Continuing	Continuing	0.000
MPCAD - DTE C - DT Explosive Atmosphere	MIPR	Aberdeen Test Center (ATC) :	0.000	0.000		0.050	Feb 2020	0.012	Feb 2021	-		0.012	Continuing	Continuing	0.000

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Aberdeen Proving Ground, MD													
MPCAD - DTE C - DT False (Positive) Alarm, DT Logistics Demonstration	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.000		0.300	Feb 2020	0.285	Feb 2021	-		0.285	Continuing	Continuing	0.000
MPCAD - DTE C - DT Natural Desert Environmental Storage	MIPR	Yuma Proving Ground : Yuma, AZ	0.000	0.000		0.100	Mar 2020	0.050	Jan 2021	-		0.050	Continuing	Continuing	0.000
MPCAD - DTE C - DT Electromagnetic Survivability	MIPR	White Sands Missile Range (WSMR) : Mesa, AZ	0.000	0.000		0.400	Jan 2020	0.711	Jan 2021	-		0.711	Continuing	Continuing	0.000
MPCAD - DTE C - DT/OT Chemical Chamber Event	MIPR	West Desert Test Center : Dugway, UT	0.000	0.000		0.000		3.892	Dec 2020	-		3.892	Continuing	Continuing	0.000
MPCAD - DTE C - DT/OT Post Field Chamber	MIPR	West Desert Test Center : Dugway, UT	0.000	0.000		0.000		0.493	Jan 2021	-		0.493	Continuing	Continuing	0.000
MPCAD - DTE C - OT Limited Users Test	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.000		1.800	Jun 2020	2.700	Mar 2021	-		2.700	Continuing	Continuing	0.000
MPCAD - DTE C - Contractor Development Testing	MIPR	West Desert Test Center : Dugway, UT	0.000	1.374	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
MPCAD - DTE C - Program Management Evaluation for Solid/Liquid Vapor Testing	MIPR	West Desert Test Center : Dugway, UT	0.000	0.736	May 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
MPCAD - DTE - DT Library Build and System Verification	MIPR	West Desert Test Center : Dugway, UT	0.000	0.000		9.219	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
PCAD - DTE C - JCAD SLA Comparative PBA Testing in COTS/GOTS Testing	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.055	Apr 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PCAD - DTE C - Sieve Packs for JCAD	C/CPIF	Smiths Detection : Watford Hertfordshire, UK	0.000	0.037	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PCAD - DTE S - Agent Chamber Testing	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.722	Jun 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PCAD - DTE C - MIL Standard Testing Report	MIPR	West Desert Test Center : Dugway, UT	0.000	0.020	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PCAD - DTE C - Evaluate JCAD SLA against EMI	MIPR	White Sands Missile Range (WSMR) : Mesa, AZ	0.000	0.075	Jul 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PCAD - DTE C - Military Standard Testing	MIPR	Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD	0.000	0.175	Jul 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PCAD - DTE C - Evaluate FGA Library Response	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.036	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CSIRP - Prototype Testing and Evaluation	Various	TBD : N/A	0.000	0.000		0.000		0.229	Feb 2021	-		0.229	Continuing	Continuing	0.000
EMBD - DTE S - DT/OT Live Agent Aerosol Testing	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.000		1.000	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - DTE S - DT LOG DEMO	MIPR	Design West Technologies : Inc, Tustin, CA	0.000	0.000		0.050	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - DTE C - DT/OT - OA/CVPA/RAM	MIPR	Navy Operational Test and Eval Force (OPTEVFOR) : Norfolk, VA	0.000	0.030	Aug 2019	0.720	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - OTE S - Operational Test &	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren	0.000	0.000		0.750	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Evaluation & Adverserial Assessment		Center : Dahlgren, VA													
EMBD - OTE S - DT - MIL-STD	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.000		0.250	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - DTE - Live Agent Testing	C/CPFF	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.323	0.520	May 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
EMBD - DTE - Consumable Procurement	MIPR	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.163	0.367	Jan 2019	0.600	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - DTE - DT Testing - False Alarm	MIPR	Various : Various	0.000	0.259	Jan 2019	0.350	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - DTE - Developmental Testing	MIPR	Various : Various	5.171	1.065	Jan 2019	0.675	Nov 2019	0.771	Jan 2021	-		0.771	Continuing	Continuing	0.000
JBTDS - DTE - ARCA Chamber and Record Test Support	C/FFP	Battelle Memorial Institute : Columbus, OH	0.000	0.877	Nov 2019	0.850	Nov 2019	0.863	Jan 2021	-		0.863	Continuing	Continuing	0.000
JBTDS - DTE - V&V of JBTDS Military Utility Model	FFRDC	Institute for Defense Analysis (IDA) : Alexandria, VA	0.000	0.000		0.125	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - DTE - Operational Assessment	MIPR	Various : Various	0.000	0.592	Jan 2019	0.000		0.494	Jan 2021	-		0.494	Continuing	Continuing	0.000
JBTDS - JHU SOLITUDE	C/FFP	Johns Hopkins University - Applied Physics Lab : Laurel, MD	2.642	0.990	May 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JHBI - DTE S - Test and Evaluation Support	MIPR	Johns Hopkins University - Applied	0.203	0.055	Jul 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Physics Lab : Laurel, MD													
JNBCRS 1 - DTE - Test and Evaluation	MIPR	Various : Various	1.174	2.849	Nov 2018	7.470	Nov 2019	2.000	Nov 2020	-		2.000	Continuing	Continuing	0.000
NTA DEFENSE - DTE C - Field-forward PBA Detection	Various	TBD : N/A	0.000	0.000		0.000		1.416	Nov 2020	-		1.416	Continuing	Continuing	0.000
NTA DEFENSE - DTE C - System Prototype Development	Various	TBD : N/A	0.000	0.000		0.000		1.000	Apr 2021	-		1.000	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Capability Assessments	MIPR	Various : Various	0.602	0.759	Dec 2018	0.700	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
ROSETTA - DTE C - Development Testing	MIPR	Various : Various	0.000	0.000		2.300	Oct 2019	1.100	Nov 2020	-		1.100	Continuing	Continuing	0.000
		Subtotal	10.278	13.628		33.746		21.618		-		21.618	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MMPRDS - Program Management Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.423	Nov 2018	0.457	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
AVCAD - PM/MS C - Management Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	1.239	Jan 2019	0.000		4.063	Jan 2021	-		4.063	Continuing	Continuing	0.000
MPCAD - PM/MS S - JPEO CBRN and JPM	MIPR	JPM NBC Contamination	0.000	2.119	Nov 2018	5.189	Dec 2019	5.501	Dec 2020	-		5.501	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *Contamination Avoidance (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NBC CA Management Support		Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD													
PCAD - PM/MS S - JPEO CBRN and JPM NBC CA Management Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	1.209	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CSIRP - Project Management	Various	TBD : N/A	0.000	0.000		0.000		1.821	Jan 2021	-		1.821	Continuing	Continuing	0.000
EMBD - JPEO Program Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.878	1.329	Feb 2019	1.659	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
EMBD - JPM CA Program Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	2.600	0.500	Oct 2018	0.735	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
GBTI - PM/MS C - Program Management Support	Allot	JPM Guardian : Aberdeen Proving Ground, MD	1.855	1.100	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - JPEO Program Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	14.217	0.756	Nov 2018	1.808	Nov 2019	1.282	Nov 2020	-		1.282	Continuing	Continuing	0.000
JBTDS - JPM CA Program Support & Core Labor	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	3.326	0.715	Jan 2019	0.770	Jan 2020	0.919	Jan 2021	-		0.919	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *Contamination Avoidance (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JNBCRS 1 - PM - Program Management	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	3.273	1.307	Nov 2018	4.340	Nov 2019	4.745	Nov 2020	-		4.745	Continuing	Continuing	0.000
NTA DEFENSE - PM/MS S - IPT Support/Program Management	MIPR	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	6.263	0.000		0.554	Dec 2019	0.592	Nov 2020	-		0.592	Continuing	Continuing	0.000
ROSETTA - PM/MS C - Program Management	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.106	Jan 2019	0.564	Oct 2019	1.084	Jan 2021	-		1.084	Continuing	Continuing	0.000
		Subtotal	32.412	10.803		16.076		20.007		-		20.007	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	135.622	102.827		127.833		128.954		-		128.954	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *Contamination Avoidance (SDD)*

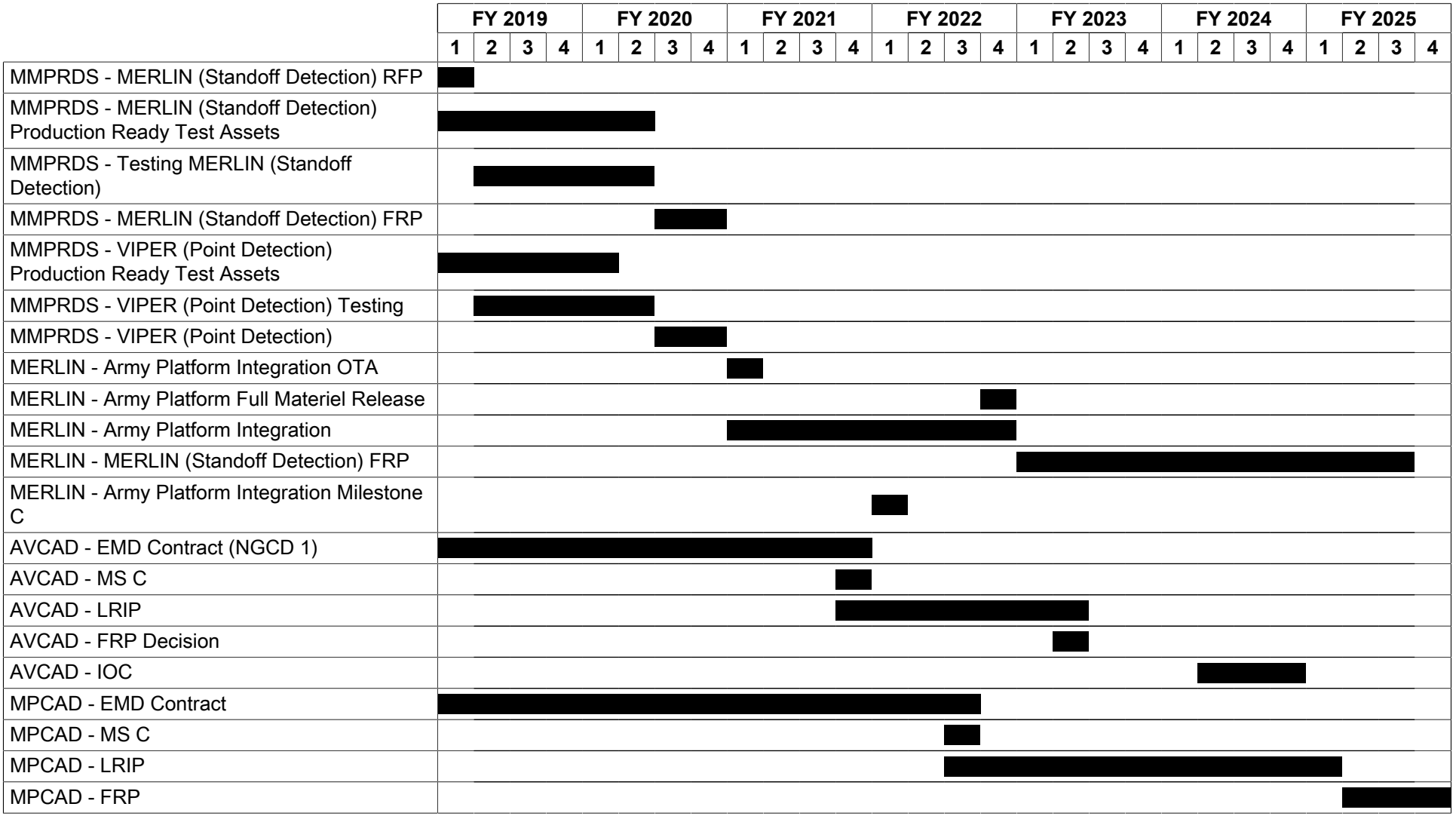

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *Contamination Avoidance (SDD)*

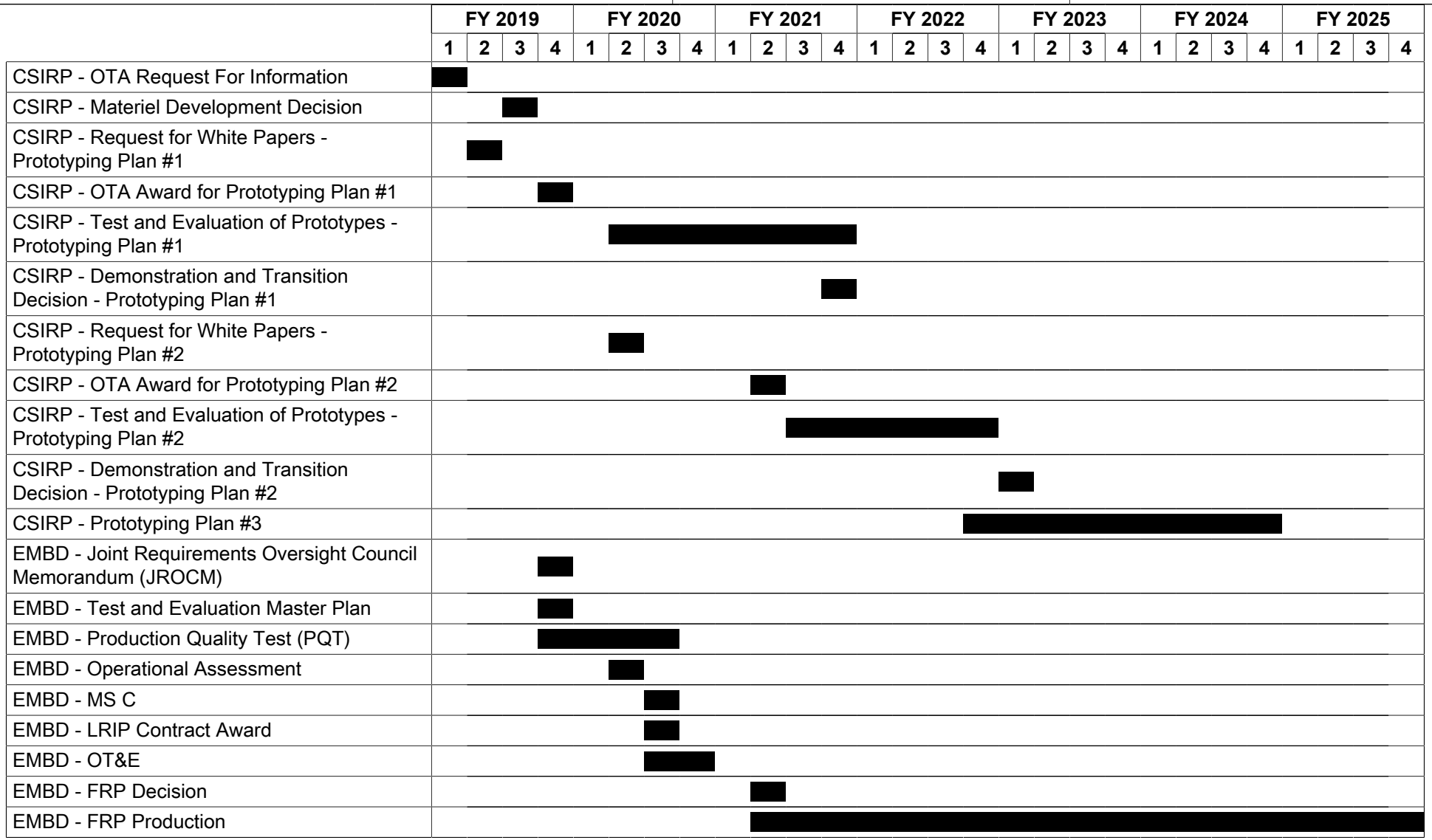

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *Contamination Avoidance (SDD)*

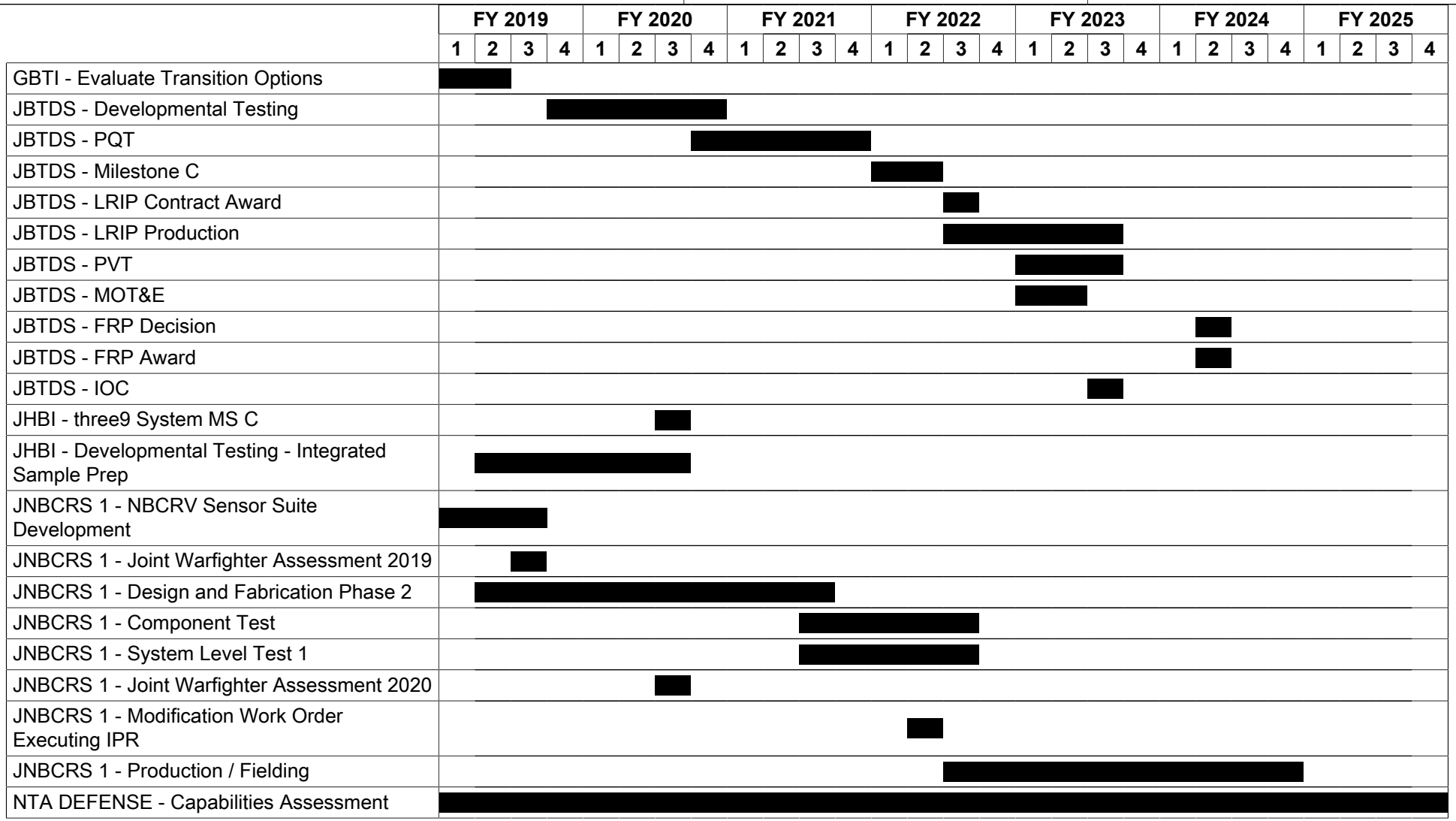

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *Contamination Avoidance (SDD)*

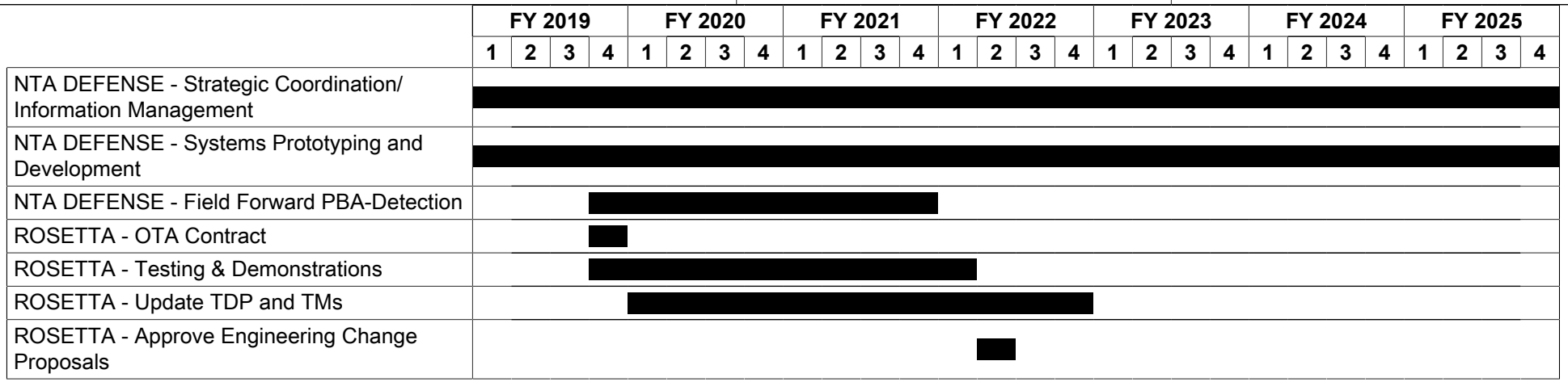

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *Contamination Avoidance (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MMPRDS - MERLIN (Standoff Detection) RFP	1	2019	1	2019
MMPRDS - MERLIN (Standoff Detection) Production Ready Test Assets	1	2019	2	2020
MMPRDS - Testing MERLIN (Standoff Detection)	2	2019	2	2020
MMPRDS - MERLIN (Standoff Detection) FRP	3	2020	4	2020
MMPRDS - VIPER (Point Detection) Production Ready Test Assets	1	2019	1	2020
MMPRDS - VIPER (Point Detection) Testing	2	2019	2	2020
MMPRDS - VIPER (Point Detection)	3	2020	4	2020
MERLIN - Army Platform Integration OTA	1	2021	1	2021
MERLIN - Army Platform Full Materiel Release	4	2022	4	2022
MERLIN - Army Platform Integration	1	2021	4	2022
MERLIN - MERLIN (Standoff Detection) FRP	1	2023	3	2025
MERLIN - Army Platform Integration Milestone C	1	2022	1	2022
AVCAD - EMD Contract (NGCD 1)	1	2019	4	2021
AVCAD - MS C	4	2021	4	2021
AVCAD - LRIP	4	2021	2	2023
AVCAD - FRP Decision	2	2023	2	2023
AVCAD - IOC	2	2024	4	2024
MPCAD - EMD Contract	1	2019	3	2022
MPCAD - MS C	3	2022	3	2022
MPCAD - LRIP	3	2022	1	2025
MPCAD - FRP	2	2025	4	2025
CSIRP - OTA Request For Information	1	2019	1	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CSIRP - Materiel Development Decision	3	2019	3	2019
CSIRP - Request for White Papers - Prototyping Plan #1	2	2019	2	2019
CSIRP - OTA Award for Prototyping Plan #1	4	2019	4	2019
CSIRP - Test and Evaluation of Prototypes - Prototyping Plan #1	2	2020	4	2021
CSIRP - Demonstration and Transition Decision - Prototyping Plan #1	4	2021	4	2021
CSIRP - Request for White Papers - Prototyping Plan #2	2	2020	2	2020
CSIRP - OTA Award for Prototyping Plan #2	2	2021	2	2021
CSIRP - Test and Evaluation of Prototypes - Prototyping Plan #2	3	2021	4	2022
CSIRP - Demonstration and Transition Decision - Prototyping Plan #2	1	2023	1	2023
CSIRP - Prototyping Plan #3	4	2022	4	2024
EMBD - Joint Requirements Oversight Council Memorandum (JROCM)	4	2019	4	2019
EMBD - Test and Evaluation Master Plan	4	2019	4	2019
EMBD - Production Quality Test (PQT)	4	2019	3	2020
EMBD - Operational Assessment	2	2020	2	2020
EMBD - MS C	3	2020	3	2020
EMBD - LRIP Contract Award	3	2020	3	2020
EMBD - OT&E	3	2020	4	2020
EMBD - FRP Decision	2	2021	2	2021
EMBD - FRP Production	2	2021	4	2025
GBTI - Evaluate Transition Options	1	2019	2	2019
JBTDS - Developmental Testing	4	2019	4	2020
JBTDS - PQT	4	2020	4	2021
JBTDS - Milestone C	1	2022	2	2022
JBTDS - LRIP Contract Award	3	2022	3	2022
JBTDS - LRIP Production	3	2022	3	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *Contamination Avoidance (SDD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JBTDS - PVT	1	2023	3	2023
JBTDS - MOT&E	1	2023	2	2023
JBTDS - FRP Decision	2	2024	2	2024
JBTDS - FRP Award	2	2024	2	2024
JBTDS - IOC	3	2023	3	2023
JHBI - three9 System MS C	3	2020	3	2020
JHBI - Developmental Testing - Integrated Sample Prep	2	2019	3	2020
JNBCRS 1 - NBCRV Sensor Suite Development	1	2019	3	2019
JNBCRS 1 - Joint Warfighter Assessment 2019	3	2019	3	2019
JNBCRS 1 - Design and Fabrication Phase 2	2	2019	3	2021
JNBCRS 1 - Component Test	3	2021	3	2022
JNBCRS 1 - System Level Test 1	3	2021	3	2022
JNBCRS 1 - Joint Warfighter Assessment 2020	3	2020	3	2020
JNBCRS 1 - Modification Work Order Executing IPR	2	2022	2	2022
JNBCRS 1 - Production / Fielding	3	2022	4	2024
NTA DEFENSE - Capabilities Assessment	1	2019	4	2025
NTA DEFENSE - Strategic Coordination/Information Management	1	2019	4	2025
NTA DEFENSE - Systems Prototyping and Development	1	2019	4	2025
NTA DEFENSE - Field Forward PBA-Detection	4	2019	4	2021
ROSETTA - OTA Contract	4	2019	4	2019
ROSETTA - Testing & Demonstrations	4	2019	1	2022
ROSETTA - Update TDP and TMs	1	2020	4	2022
ROSETTA - Approve Engineering Change Proposals	2	2022	2	2022

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program			Date: February 2020
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COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
CM5: *Homeland Defense (SDD)*	-	4.775	10.146	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.921
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Engineering and Manufacturing Development of common analytical laboratory system capabilities to conduct on-site analysis of any unknown sample and test potential life-threatening substances.

The effort included in this project is:
(1) Common Analytical Laboratory System capability (CALS)

The CALS will provide common analytical capabilities packaged to meet the specific CONOPS and mission of the gaining unit to detect and identify Chemical Warfare Agents (CWAs), Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs) and Biological Warfare Agents (BWAs). Users of the system will include the National Guard Bureau, the Army 20th Support Command, the Army Medical Laboratory, the Air Force, and the Navy. There will be two variants of CALS, the Theater Validation Integrated System (TV-IS) and the Field Confirmatory Analytical Capability Sets (FC-ACS). TV-IS is currently in the EMD phase, with proto-types built and EMD testing that began in February 2019 and concludes in 2QFY2020.

Theater Validation Integrated System (TV-IS) Variant - Army User - A lab with a high level of confidence in analytical results through the use of orthogonal (complimentary) technologies and an expanded analytical suite that employs multiple standardized ISO containers, which will be integrated onto one Family of Medium Tactical Vehicles (FMTV) and two trailers. TV-IS is currently in the EMD phase, with EMD testing that concludes in early FY2020. The TV-IS Milestone C decision is currently scheduled for Mid FY2020 to enter into the Production & Deployment Phase.

Field Confirmatory Analytical Capability Sets (FC-ACS) Variant - Army, Navy, Air Force and NGB User - A transportable equipment subset that allows them to be loaded into transport cases and palletized if required. FC-ACS is post Milestone C and is not a RDTE funded part of CALS, it is in the production phase.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 1) CALS	4.775	10.146	-
Description: Theater Validation Integrated System (TV-IS) Variant - Army User - A lab with a high level of confidence in analytical results through the use of orthogonal (complimentary) technologies and an expanded analytical suite that employs multiple standardized ISO containers, which will be integrated onto one Family of Medium Tactical Vehicles (FMTV) and two trailers.			
FY 2020 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Complete Operational Test and Logistics Demonstration for the theater validation variant. Develop Next Generation Diagnostic System (NGDS) food and water assay panel associated with Bio Detection capability to include sample processing protocols. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase.			
Accomplishments/Planned Programs Subtotals	4.775	10.146	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• JS0005: *COMMON ANALYTICAL LABORATORY SYSTEM (CALS)*	48.317	4.293	37.173	-	37.173	27.370	33.556	34.930	28.769	Continuing	Continuing

Remarks

D. Acquisition Strategy

COMMON ANALYTICAL LABORATORY SYSTEM (CALS)

The Common Analytical Laboratory System (CALS) will be developed leveraging both Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) analytical components to support the identification of Chemical, Biological, Radiological and Nuclear (CBRN) agent materials in environmental samples. CALS will consist of (2) variants which will be fielded, in accordance with mission need, to components of the Air Force, Army, Marines, Navy and National Guard Bureau requiring CBRN field confirmatory analytical detection capability. A theatre validation variant will be designed and built for a longer duration mission and for semi-permanent applications. An analytical capability suite variant will be designed for shorter duration field confirmatory missions. JPdM CBRNE A&RS awarded one contract during the EMD Phase. The contract was awarded to Battelle Memorial Institute (BMI) (prime) to develop, deliver, manage, and maintain a CALS Technical Data Package (TDP) throughout the EMD Phase. The TDP to be delivered to the Government at the end of the EMD Phase is to include all product data required by the Production Level specifications outlined in Military Standard (MIL-STD)-31000A, and will reflect the tested baseline configuration incorporating all approved changes. As part of the common acquisition strategy, CALS is incorporating the NGDS platform to meet this threshold requirement; specifically to identify various bacterial and viral agents in the CALS integrated systems. This platform provides the ability to analyze for bacterial and viral agents in various environmental, food, and water matrices (sample types).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - HW S Prototype System Manufacturing	C/CPIF	Battelle Memorial Institute : Columbus, OH	33.551	2.168	Nov 2018	0.000		0.000		-		0.000	0.000	35.719	0.000
CALS - HW S - NGDS Tactical Variant Alpha Prototype	SS/CPFF	BioFire Dx : Salt Lake City, UT	1.855	0.000		1.396	Nov 2019	0.000		-		0.000	0.000	3.251	0.000
		Subtotal	35.406	2.168		1.396		0.000		-		0.000	0.000	38.970	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - ES S - Engineering Support System	C/FFP	Various : Various	13.229	0.000		1.221	Feb 2020	0.000		-		0.000	0.000	14.450	0.000
CALS - ES C - Other Government Agencies Services	MIPR	Various : Various	0.946	0.237	Jan 2019	0.902	Jan 2020	0.000		-		0.000	0.000	2.085	0.000
CALS - TD/D S - Safety Internal Review Board	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.282	0.100	Mar 2019	0.100	Mar 2020	0.000		-		0.000	0.000	0.482	0.000
		Subtotal	14.457	0.337		2.223		0.000		-		0.000	0.000	17.017	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - OTHT C - Operation Test Agency	MIPR	Operational Test Command (OTC) : Ft. Hood, TX	0.000	0.000		1.808	Apr 2020	0.000		-		0.000	0.000	1.808	0.000
CALS - DTE C - Other Government Agencies	MIPR	Various : Various	0.000	0.000		2.361	Apr 2020	0.000		-		0.000	0.000	2.361	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(Test Support) PVT & LOGDEMO															
CALS - DTE C - BMI Test Support	C/CPIF	Battelle Memorial Institute : Columbus, OH	0.000	0.150	Jan 2019	0.802	Dec 2019	0.000		-		0.000	0.000	0.952	0.000
CALS - DTE S - System DT/OT and LOGDEMO	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	5.000	0.675	Jul 2019	0.000		0.000		-		0.000	0.000	5.675	0.000
		Subtotal	5.000	0.825		4.971		0.000		-		0.000	0.000	10.796	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - PM/MS HW - Program Office - Planning and Programming	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	8.910	1.445	Nov 2018	1.556	Nov 2019	0.000		-		0.000	0.000	11.911	0.000
		Subtotal	8.910	1.445		1.556		0.000		-		0.000	0.000	11.911	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	63.773	4.775		10.146		0.000		-		0.000	0.000	78.694	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *Homeland Defense (SDD)*

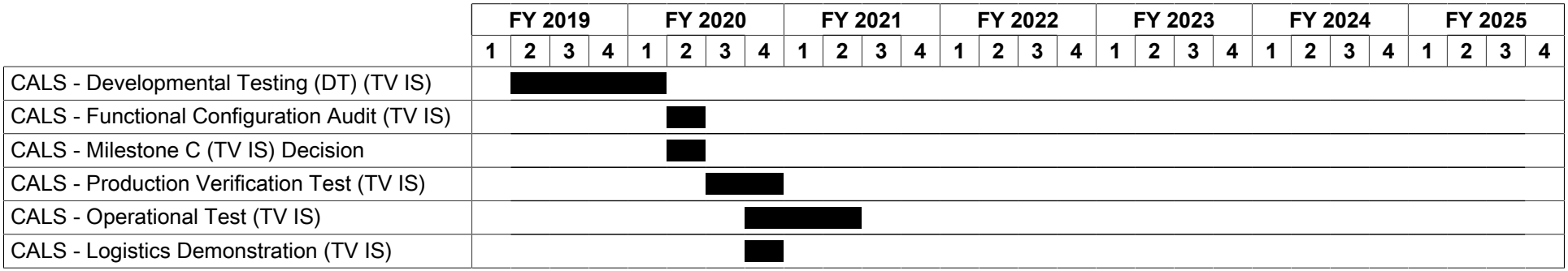

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *Homeland Defense (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CALS - Developmental Testing (DT) (TV IS)	2	2019	1	2020
CALS - Functional Configuration Audit (TV IS)	2	2020	2	2020
CALS - Milestone C (TV IS) Decision	2	2020	2	2020
CALS - Production Verification Test (TV IS)	3	2020	4	2020
CALS - Operational Test (TV IS)	4	2020	2	2021
CALS - Logistics Demonstration (TV IS)	4	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program			Date: February 2020
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COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
CO5: *Collective Protection (SDD)*	-	8.781	7.272	7.885	-	7.885	2.983	0.000	0.000	0.000	0.000	26.921
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Engineering and Manufacturing Development and Low Rate Initial Production of Joint Service Chemical, Biological, and Radiological (CBR) Collective Protection (CP) systems that are smaller, lighter, less costly to produce and maintain, and more logistically supportable enabling mission accomplishment in CBR environments. This allows for a more resilient force posture, sustaining Joint Force military advantages and building a more lethal Force, efforts that align with the National Defense Strategy.

The systems included in this project are:
(1) Chemical Biological Aircraft Survivability Barrier (CASB)
(2) Joint Expeditionary Collective Protection (JECP) Family of Systems

The CASB will provide a lightweight, low-cost, expendable, negative-pressure enclosure that will protect the interior of DoD multi-service aircraft assets (MH-47, CV22, MC-130) capable of airlifting/exfiltrating chemically or biologically contaminated personnel, equipment, and cargos while preserving the aircraft for continued unrestricted operations without the need for extensive decontamination. CASB will field a capability that supports the overall intent of the Aircraft chemical, biological, radiological and nuclear (CBRN) Contamination Survivability (ACCS) Initial Capabilities Development (ICD) in the areas of barriers, aircraft containment systems, modular Collective Protection (ColPro) for aircraft interiors, and disposable ColPro. CASB is one member of a family of systems that will support the ICD. It will protect the interior from incidental cross-contamination by chemical and biological (CB)-contaminated personnel and equipment and cargos under transport.

JECP provides the Joint Expeditionary Forces a collective protection capability that is lightweight, compact, modular, and affordable. JECP is a family of systems, developed in two phases, that will allow the application of collective protection to transportable soft-side shelters, enclosed spaces of opportunity, and in remote austere locations as a standalone resource. Phase 1 includes standalone collective protection systems and kits that provide existing host platforms and structures with CBRN protection. Phase 2 includes kits that provide CBRN protection to other host platforms and structures that were not explicitly designed in Phase 1. JECP will be capable of protecting personnel groups of varying size, unencumbered by Individual Protective Equipment (IPE), from the effects of CB agents, Toxic Industrial Materials (TIMs), radiological particles, heat, dust, and sand. The employment of JECP will reduce the need for personnel and equipment decontamination and is a strategic deterrence against state adversaries and non-state actors from using weapons of mass destruction, a National Defense Strategy objective.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 1) Chemical and Biological Aircraft Survivability Barrier (CASB)	2.809	0.877	-
Description: CASB prototype development and testing through the EMD Phase.			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *Collective Protection (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: Complete testing and prepare all required documentation in support of MS C. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase.			
Title: 2) JECP ***Description:*** Phase 2 system Development and Demonstration Events ***FY 2020 Plans:*** Continue updates/development of logistics products. Conduct Logistics Demonstration, provisioning conference and begin logistics assessment. Complete Phase 2 test article manufacturing for Government developmental and operational testing (OT). (Qty 4 - Tent Kit Single Skin, Qty 3 - Tent Kit 1, Qty 1 - Tent Kit 3, Qty 4 - Structure Kit Unimproved). Continue Government DT and begin detailed planning for Multi Operational Test and Evaluation (MOT&E) event and Technical Manual verification. Conduct physical configuration audit, manufacturing readiness and production readiness assessments. ***FY 2021 Plans:*** Complete DT testing and reporting. Complete LRIP manufacturing for OT (Qty 2 - Tent Kit Single Skin, Qty 3 - Tent Kit 1, Qty 1 - Tent Kit 3, Qty 1 - Structure Kit Unimproved). Conduct MOT&E, Logistics Demonstration and TM verification events. Finalize technical data, logistics products and update/draft program acquisition documentation. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to change in program/project schedule. Increase is due to program plans. Program will be completing DT and conducting OT in FY21.	5.972	6.395	7.885
Accomplishments/Planned Programs Subtotals	8.781	7.272	7.885

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• JP1111: *JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)*	24.552	13.570	14.496	-	14.496	24.135	32.490	39.038	25.193	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *Collective Protection (SDD)*

D. Acquisition Strategy

CHEMICAL BIOLOGICAL AIRCRAFT SURVIVABILITY BARRIER (CASB)

The Chemical Biological Aircraft Survivability Barrier (CASB) overall strategy is to utilize primary materials (air filtration and flexible barrier material) currently in use by other programs in the CB defense portfolio. CASB reviewed existing materials and technology as well as designs, configurations, and test data from legacy systems developed for ColPro applications. Using this information, systems are being developed to meet the broader range of airframes and airframe specific requirements, chemical biological protection, and logistic supportability that are now required. Based on commonality between the requirements of the CASB and the requirements of similar programs (i.e. Joint Expeditionary Collective Protection, TIS, and Aeromedical Biological Containment System), CASB initiated at MS B EMD phase to meet these expanded requirements within the various airframes. CASB is leveraging an IDIQ contract to pursue a Commercial-of-the-Shelf (COTS) development strategy using full and open competition for awards following MS C. During the EMD phase, CASB awarded a Cost Plus Incentive Fee (CPIF) delivery order for the development and delivery of prototypes for airworthiness certification within two years.

JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)

JECP Family of Systems (FoS) (Phase 1 and Phase 2) involves multiple contract types throughout the Engineering and Manufacturing Development (EMD) and Production and Deployment Phases of the program. Having achieved a Full Rate Production (FRP) decision for Phase 1 Systems in December 2016, the program exercised Fixed Price Incentive (FPI) production options in FY17 & FY18 through the now expired contract with Leidos in support of Initial Operational Capability (IOC). A competitive build-to print follow-on production delivery order contract was awarded June 2019 to Production Products Manufacturing and will support the remaining production of Phase 1 Systems to meet Full Operational Capability (FOC). Phase 2 systems will be developed as engineering changes to the Phase 1 systems under a separate competitive delivery order awarded March 2019 to Leidos and undergo limited developmental and operational testing in pursuit of a FRP decision. Production options are included in the delivery order to meet FOC for Phase 2 systems. Additionally, BA7 funding will develop incremental improvements to fielded JECP FoS. BA7 efforts include a range of improvements intended to enhance filtration protection, provide a field leakage test capability and update various fielded Environmental Control Unit (ECU) interface types for use with collective protection. These efforts involve development of designs and prototyping under the Other Transaction Authority (OTA) through the Countering Weapons Mass Destruction (CWMD) Consortium contract as well as exploitation of commercial off-the-shelf items.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *Collective Protection (SDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CASB - HW S - Prototype Development, TRA, MRA	C/FFP	Integrated Solutions for Systems (IS4S) : Huntsville, AL	1.279	0.352	Feb 2019	0.000		0.000		-		0.000	0.000	1.631	0.000
JECP - HW S - Phase 2 System Product Development/Phase 2 Prototype Manufacturing	C/FPIF	Leidos : Abingdon, MD	0.845	2.506	Mar 2019	2.590	Jan 2020	3.200	Dec 2020	-		3.200	0.000	9.141	0.000
		Subtotal	2.124	2.858		2.590		3.200		-		3.200	0.000	10.772	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CASB - ES S - IPT and Technical Support	MIPR	Various : Various	0.584	0.781	Nov 2018	0.252	Jan 2020	0.000		-		0.000	0.000	1.617	0.000
JECP - ES S/ILS S - Engineering, Logistics, Technical, IPT Support	MIPR	Various : Various	2.036	0.850	Nov 2018	1.188	Nov 2019	1.779	Dec 2020	-		1.779	0.000	5.853	0.000
		Subtotal	2.620	1.631		1.440		1.779		-		1.779	0.000	7.470	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CASB - OTE S - Operational Testing	MIPR	Various : Various	0.000	0.315	Jan 2019	0.520	Apr 2020	0.000		-		0.000	0.000	0.835	0.000
CASB - DTE S - Developmental Testing	MIPR	Various : Various	0.552	0.738	Nov 2018	0.000		0.000		-		0.000	0.000	1.290	0.000
JECP - OTHT SB - Test & Evaluation IPT/OTE S - Operational Testing/DTE S	MIPR	Various : Various	7.839	1.627	Nov 2018	1.309	Nov 2019	1.249	Dec 2020	-		1.249	0.000	12.024	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *Collective Protection (SDD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
- Phase 2 Developmental testing															
		Subtotal	8.391	2.680		1.829		1.249		-		1.249	0.000	14.149	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CASB - PM/MS S - Program Management Support	MIPR	Various : Various	0.335	0.623	Nov 2018	0.105	Nov 2019	0.000		-		0.000	0.000	1.063	0.000
JECP - PM/MS S - Program Management Support	MIPR	Various : Various	11.820	0.989	Nov 2018	1.308	Nov 2019	1.657	Dec 2020	-		1.657	0.000	15.774	0.000
		Subtotal	12.155	1.612		1.413		1.657		-		1.657	0.000	16.837	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.290	8.781		7.272		7.885		-		7.885	0.000	49.228	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *Collective Protection (SDD)*

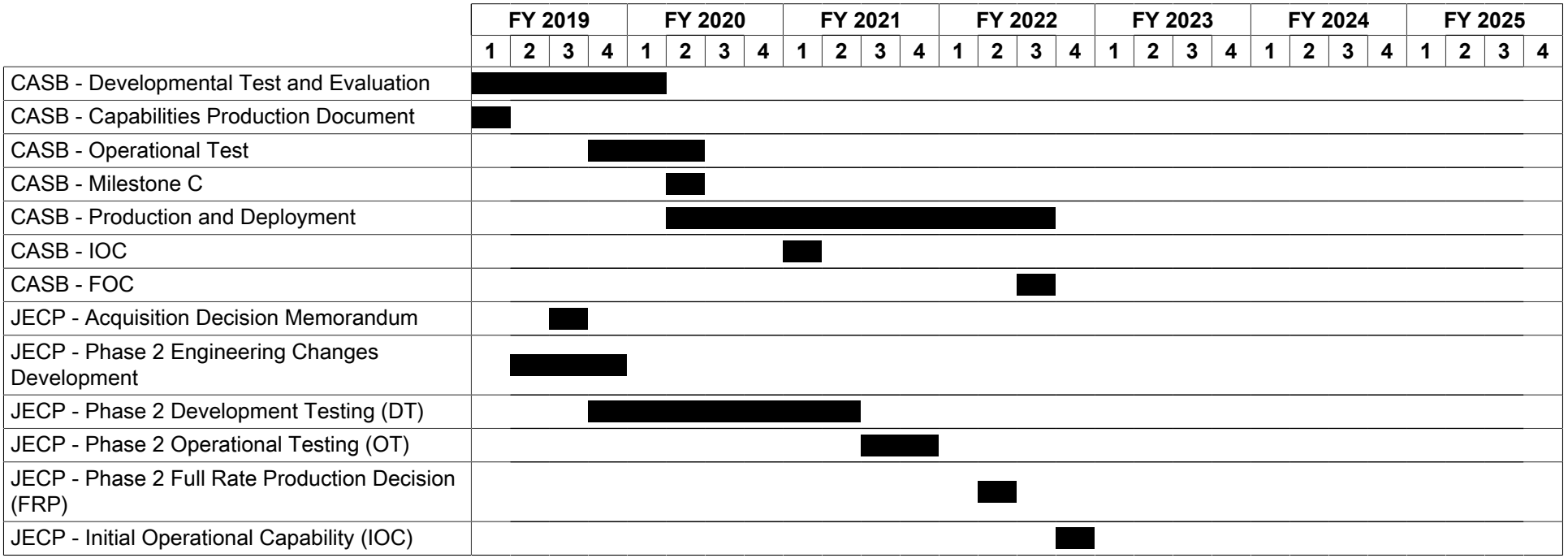

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *Collective Protection (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CASB - Developmental Test and Evaluation	1	2019	1	2020
CASB - Capabilities Production Document	1	2019	1	2019
CASB - Operational Test	4	2019	2	2020
CASB - Milestone C	2	2020	2	2020
CASB - Production and Deployment	2	2020	3	2022
CASB - IOC	1	2021	1	2021
CASB - FOC	3	2022	3	2022
JECP - Acquisition Decision Memorandum	3	2019	3	2019
JECP - Phase 2 Engineering Changes Development	2	2019	4	2019
JECP - Phase 2 Development Testing (DT)	4	2019	2	2021
JECP - Phase 2 Operational Testing (OT)	3	2021	4	2021
JECP - Phase 2 Full Rate Production Decision (FRP)	2	2022	2	2022
JECP - Initial Operational Capability (IOC)	4	2022	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program											Date: February 2020	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*				Project (Number/Name) DE5 / *Decontamination (SDD)*			
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
DE5: *Decontamination (SDD)*	-	15.399	7.989	16.954	-	16.954	9.729	5.074	9.793	9.317	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the development of Contamination Mitigation (ConMit) systems utilizing solutions that remove and/or detoxify contaminated material without damaging combat equipment, personnel, or the environment, helping sustain a resilient force posture, one of the efforts outlined in the National Defense Strategy. ConMit systems provide a force restoration capability for units that become contaminated. Development efforts will provide systems that reduce operational impact and logistics burden, reduce sustainment costs, increase safety, and minimize environmental effects associated with decontamination and contamination mitigation operations. Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, Concept of Operations and Tactics, Techniques & Procedures.

Efforts included in this Project are:
(1) Contaminated Human Remains System (CHRS)
(2) Decontamination Family of Systems (DFoS) Contamination Indicator Decontamination Assurance System (CIDAS)
(3) DFoS CIDAS Blister
(4) Forward Area Mobility Spray - System (FAMS-S)
(5) Major Defense Acquisition Program (MDAP)
(6) Mass Personnel Decontamination (MPD)
(7) Joint Biological Agent Decontamination System (JBADS)

The CHRS program will provide a Contaminated Human Remains Transfer Case (CHRT) packaging solution to safely return chemical, biological, or radiological contaminated human remains to the Continental United States. The CHRT is a containment system that will protect personnel from the hazards associated with transporting human remains that are potentially contaminated with chemical, biological or radiological agents and Toxic Industrial Materials (TIM) without posing additional risk to the handlers or the environment in accordance with federal and international transportation standards. The program addresses capability gaps identified within both the ConMit Initial Capabilities Document (ICD), dated March 2011, and the Mortuary Affairs ICD, dated October 2008.

Decontamination Family of Systems (DFoS) Contamination Indicator Decontamination Assurance System (CIDAS) is a contamination indicator and decontamination assurance technology. The indicator will be sprayed on tactical vehicles, aircraft, ships, crew-served weapons, and individual weapons that may have been exposed to traditional and non- traditional chemical contamination. DFoS CIDAS is a new capability for the Joint Forces that will reduce the logistics burden of decontamination by indicating presence and location of traditional (Nerve and Blister) and non-traditional chemical agents on militarily relevant surfaces pre- and post-decontamination. This helps sustain a resilient force posture, making the Joint Force more adaptable against the uncertainty in a changing global strategic environment, an effort listed in the National Defense Strategy under building a more lethal force. It will consist of an indicator and an applicator, with three applicator configurations -- small-scale, tactical large scale, and reusable large scale applicators -- and three indicator formulations -- nerve training, nerve and blister indicators.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

Starting in FY21, the DFoS CIDAS program is being broken into separate CIDAS Nerve and CIDAS Blister programs as the capabilities are intended to fulfill distinct solutions to meet Warfighter needs. The CIDAS Nerve program will address the visual disclosure of traditional and non-traditional nerve agents while the CIDAS Blister program addresses traditional blister agents, two separate threat scenarios that require different materiel solutions, modernizing a key capability to help build a more lethal force, as outlined in the National Defense Strategy.

DFoS CIDAS Blister is a contamination indicator and decontamination assurance technology. It will consist of a blister indicator and an applicator. The indicator will be sprayed on tactical vehicles, aircraft, ships, crew-served weapons, and individual weapons that may have been exposed to blister agent chemical contamination. DFoS CIDAS Blister is a new capability for the Joint Forces that will reduce the logistics burden of decontamination by indicating presence and location of blister chemical agent on militarily relevant surfaces pre- and post-decontamination.

The FAMS-S program is a new start program in FY21 and transitioning an improved sprayable decontaminate prototype technology being developed under the NTA Defense budget to a dedicated budget line in FY21. FAMS-S will provide Special Operations Forces (SOF) and SOF Task Forces (SOTFs) a man-portable and mobile platform capable of rapidly decontaminating chemical and biological (CB) agents from the exterior of aircraft, helicopters, boats, vehicles, or support equipment to a level that is clean enough for re-use without having to wear CB protective equipment in order to quickly re-equip the force -- maximizing tactical flexibility and fighting strength while minimizing the logistical burden and the cost of conducting Countering Weapons of Mass Destruction (CWMD) and CB operations. FAMS-S system variants envisioned are Large, Small, and Man-Portable configurations that will provide sufficient form factor to enable the SOF tactical forces to push decontamination capability as "far forward as possible" to execute decontamination "as soon as possible" following the tenants of decontamination.

The MDAP Chemical Biological Radiological and Nuclear (CBRN) Survivability Initiative ensures weapon system programs at all Acquisition Category (ACAT) levels, as well as non-DoD agency programs such as those programs at the Department of Homeland Security (DHS), meet their CBRN defense requirements. This effort facilitates and coordinates the research, development, test and evaluation, procurement, delivery, and life cycle sustainment of affordable CBRN defense materiel solutions for each program's documented CBRN requirements.

The Mass Personnel Decontamination (MPD) program will develop an array of rugged and reliable best-of-breed hardware in a manageably sized, easy-to-erect, modular system that can be quickly tailored to different mass casualty events in order to support decontamination of ambulatory and non-ambulatory patients, and allow for the processing of contaminated human remains. The program addresses capability gaps identified within the Consequence Management ICD dated 14 October 2010, the ConMit ICD dated 1 March 2011, and the Mortuary Affairs Operations ICD dated October 2008, modernizing a key capability under the National Defense Strategy?s line of effort of building a more lethal force.

The Joint Biological Agent Decontamination System (JBADS) will provide the capability to conduct biological agent decontamination of the interior and exterior of the C-130 aircraft. The JBADS is a capability set that will include a shelter to encapsulate an airframe, a decontamination delivery system (e.g., hot-humid air-blower), environmental control and monitoring system(s), and other ancillary components required to ensure efficacious biological agent decontamination. It will provide the capability to decontaminate biologically contaminated aircraft to safe levels and allow more rapid return to service, rebuilding military readiness and building a more lethal Joint Force as outlined in the National Defense Strategy. Future capability may address biological decontamination of vehicles and additional aircraft.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 1) Contaminated Human Remains System (CHRS) ***Description:*** Contaminated Human Remains Transfer Case (CHRT) Development and Support ***FY 2020 Plans:*** Complete Operational Test Agency Evaluation Report (OER), and Technology and Manufacturing Readiness Assessments in support of Full Rate Production (FRP). Update Technical Manuals, if required based on Operational Testing (OT) results. Update Life Cycle Sustainment Plan and other documentation in preparation for Milestone C/Full Rate Production decision. Complete Physical Configuration Audit. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase.	-	2.118	-
Title: 2) Decon Family of Sys (DFoS) Contam Indicator Decon Assurance Sys (CIDAS) ***Description:*** Small Scale Applicators (SSA) - Nerve Indicator Kit	0.260	-	-
Title: 3) DFoS CIDAS ***Description:*** Small Scale Applicators (SSA) - Blister Indicator Kit ***FY 2020 Plans:*** Conduct Sustainment Cost Reduction efforts with prime contractor to reduce the sustainment unit cost of the blister indicator by qualifying alternate sources of raw materials and changing manufacturing processes to increase efficiencies. Procure 62 Small Scale Applicator - Blister indicator kits for Developmental Testing (DT) and associated Contract Data Requirements Lists (CDRLs) for Contractor's Progress, Status and Management Report, Program Schedule, etc. Conduct DT to include level of indication (LOI) testing, material and detector compatibility. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred to another funding line. (DFoS CIDAS Blister)	0.419	4.248	-
Title: 4) DFoS CIDAS ***Description:*** Large Scale Applicators (LSA) (Nerve and Blister kits) ***FY 2020 Plans:*** Procure 50 LSAs- Blister Indicator kits for Developmental Testing (DT) and associated Contract Data Requirements Lists (CDRLs). Conduct DT and prepare for LSA production decision and fielding. ***FY 2020 to FY 2021 Increase/Decrease Statement:***	3.367	0.378	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Program/project funding transferred to another funding line. (DFoS CIDAS Blister)			
Title: 5) DFoS CIDAS BLISTER ***Description:*** Blister Indicator Kits and Large Scale Applicators ***FY 2021 Plans:*** Award option on Blister contract to procure 1,500 Small Scale Applicator (SSA) Blister Kits, 250 Large Scale Applicator (LSA) Blister Kits, and associated Contract Data Requirements Lists (CDRLs) to initiate and complete Product Qualification Testing (PQT) (i.e. area of coverage, environmental factors, logistics demonstration), Developmental Testing (DT), and Operational Testing (OT) in support of Full Rate Production (FRP). ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred from another funding line. (DFoS CIDAS)	-	-	5.467
Title: 6) Forward Area Mobility Spray - System ***Description:*** Prototype Development ***FY 2021 Plans:*** Award system development contract to begin prototype build, and initiate early developmental and operational test planning for integration suitability and interoperability effectiveness. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project is new start effort in FY 2021. FAMS-S will utilize efforts conducted under NTA DEFENSE budget, RDT&E Project Contamination Avoidance (CA), for an improved sprayable decontamination slurry, containment system, and delivery mechanism.	-	-	1.828
Title: 7) Major Defense Acquisition Program (MDAP) ***Description:*** CBRN Survivability support ***FY 2020 Plans:*** Continue to ensure CBRN survivability requirements are met for MDAP's by cross-walking requirements documents with program execution plans. Attend meetings to address integration needs and present CBRN system and hardware options. Provide subject matter expertise in the execution of CBRN survivability requirements for both materiel and non-material solutions. Review and assist in document preparation for milestones and programs reviews. Conduct CBRN survivability compliance reviews for Optionally Manned Fighting Vehicle, Robotic Combat Vehicle, Future Long Range Assault Aircraft, Future Attack Reconnaissance	0.435	1.023	1.035

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Aircraft, Littoral Combat Ship, European Reassurance Initiative, and other CBRN survivability system integration in preparation for various program acquisition milestones, system and subsystem test events, design reviews and low rate initial production reviews. ***FY 2021 Plans:*** Continue to ensure CBRN survivability requirements are met for MDAP's by cross-walking requirements documents with program execution plans. Attend meetings to address integration needs and present CBRN system and hardware options. Provide subject matter expertise in the execution of CBRN survivability requirements for both materiel and non-material solutions. Review and assist in document preparation for milestones and programs reviews. Conduct CBRN survivability compliance reviews for Optionally Manned Fighting Vehicle, Robotic Combat Vehicle, Future Long Range Assault Aircraft, Future Attack Reconnaissance Aircraft, Synthetic Training Environment, Precision Navigation and Timing, multiple Soldier Lethality programs, and other CBRN survivability system integration in preparation for various program acquisition milestones, system and subsystem test events, design reviews and low rate initial production reviews. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Title: 8) Mass Personnel Decontamination (MPD) ***Description:*** Engineering and Manufacturing Development (EMD) activities and Product Development ***FY 2021 Plans:*** Award contract for DT systems and conduct DT. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project transitioned to Engineering and Manufacturing Development Phase.	-	-	3.825
Title: 9) Joint Biological Agent Decontamination System (JBADS) ***Description:*** Development and Testing ***FY 2020 Plans:*** Complete Contractor Specification Testing. Continue Future Capabilities Analysis. ***FY 2021 Plans:*** Initiate/Complete Initial Operational Test and Evaluation (IOT&E). Complete Future Capabilities Analysis. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters. (IOT&E being conducted)	10.918	0.222	4.799
Accomplishments/Planned Programs Subtotals	15.399	7.989	16.954

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• JD0050: *DECONTAMINATION FAMILY OF SYSTEMS (DFoS)*	16.384	17.050	10.804	-	10.804	9.022	11.644	16.748	36.588	Continuing	Continuing

Remarks

D. Acquisition Strategy

CONTAMINATED HUMAN REMAINS SYSTEM (CHRS)

The CHRS program will leverage previous efforts under a Joint Urgent Operational Needs Statement (JUONS) which have accelerated the CHRT project. Additional minor design modifications, developmental and operational testing is part of the overall acquisition strategy. Product development consists of the design and prototyping of a CHRT. The contracting strategy will use the Countering Weapons of Mass Destruction Other Transaction Agreement (CWMD OTA) to procure prototype units, followed by Developmental Testing (DT). Following DT completion, an In-Process Review will be conducted. A Logistics Demonstration (LD) and Operational Testing (OT) will be conducted. An Operational Test Agency (OTA) Evaluation Report (OER) will be written, and technical reviews will be conducted, in preparation for a Milestone C/Full Rate Production decision.

DFoS CONTAMINATION INDICATOR DECONTAMINATION ASSURANCE SYSTEM (DFoS CIDAS)

The DFoS CIDAS program will follow an evolutionary acquisition strategy in consonance with user developed capability documents. Following MS A in 2011, the program office collaborated with external efforts, including the Hazard Mitigation, Materiel and Equipment Restoration (HaMMER) Advanced Technology Development (ATD) Operational Demonstration and Extended User Evaluations, and conducted technology demonstrations on candidate indicator and applicator technologies to mitigate risk and identify affordable mature technologies that meet requirements. The DFoS CIDAS program determined the need for and initiated Government designed reusable and tactical large scale applicators to provide affordable solutions to meet specific User requirements. Following MS B in 2015, the program used full and open competition to award a performance based indefinite quantity contract with fixed price incentive successive target contract line items, with options for Low Rate Initial Production (LRIP) and Full Rate Production (FRP) for nerve indicator and small scale applicator systems. The program will integrate the Contractor and Government designed indicator and applicators and conduct developmental and operational testing.

DFoS CONTAMINATION INDICATOR DECON ASSURANCE SPRAY BLISTER (DFoS CIDAS BLISTER)

The DFoS CIDAS Blister program will follow an evolutionary acquisition strategy. The program office coordinated with Science and Technology efforts to identify blister technologies that met Service requirements. After further development, in 4QFY19 a sole-source performance based indefinite delivery indefinite quantity contract was awarded to develop blister indicator and small scale applicator systems with options for Low Rate Initial Production (LRIP) and Full Rate Production (FRP). The program will leverage the contract to procure blister indicator kits and conduct test and evaluation events for the EMD phase in preparation for Milestone C.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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FORWARD AREA MOBILITY SPRAY SYSTEM (FAMS-S)

The FAMS-S will be developed using an incremental acquisition strategy as an enabling technology for future application to include additional tactical and strategic platforms as determined by Special Operations Force (SOF). FAMS-S will reduce technological risk by reviewing existing materials and technology as well as designs, configurations, and test data from legacy systems developed for decontamination applications, including the High Mobility Decontamination System (HMDS), the M26 Joint System Tactical Decontamination System - Small Scale (JSTDS-SS), and multiple commercial systems and components currently at Technology Readiness Level (TRL) 8 and 9.

MAJOR DEFENSE ACQUISITION PROGRAM (MDAP)

The MDAP program provides assistance to non-CBD programs with meeting and or optimizing their Chemical, Biological, Radiological, and Nuclear (CBRN) survivability and force protection capabilities. The MDAP also provides systems engineering analyses to develop CBRN specific operational and technical requirements, identifies performance gaps between existing materiel and technical requirements, develops cost and schedule estimates, conducts preliminary CBRN T&E and logistics planning, develops CBRN defense architectures products, and performs trade space analyses for a number of non-CBD programs.

MASS PERSONNEL DECON (MPD)

The MPD program will develop the equipment, processes and procedures for DoD-affiliated personnel contaminated by chemical, biological, and radiological agents to achieve ambulatory and non-ambulatory throughput requirements as dictated by the needs of the Services, while considering various mission scenarios. As part of the acquisition strategy, key product developmental efforts will begin with the program achieving a MS A in 1QFY20, and includes efforts for the reduction of current MPD System costs by assessing existing Mass Casualty Decontamination (MCD) equipment and processes as well as new technology through the use of Requests For Information (RFI's), Market Research Analyses and Technology Demonstrations. Data collected from prior equipment demonstrations as well as fieldings of commercial MCD systems in support of two validated Operational Needs Statements will inform the program as well. A competitive/sole source contract for prototyping and production units will be awarded, followed by Milestone B. Results of Prototyping will inform developmental and operational testing effort, followed by Milestone C/Full Rate Production Approval. These efforts will additionally support the development of hazardous waste disposal and integration with a Contaminated Human Remains capability.

JOINT BIOLOGICAL AGENT DECONTAMINATION SYSTEM (JBADS)

The JBADS acquisition approach is to leverage information and technology from the JBADS Joint Capability Technology Demonstration (JCTD) to support entry into the Engineering and Manufacturing Development (EMD) phase of the acquisition cycle. Following testing, the JBADS will transition to Full Rate Production. The JBADS will utilize Commercial-off-the-Shelf components for the shelter, the decontamination delivery system, the environmental control and monitoring system(s), and other ancillary components with the award of a competitive delivery order to produce, operate, and sustain the system. The program as a whole utilizes the evolutionary acquisition approach for future increments that may expand JBADS capabilities to include other platforms (aircraft and vehicles) as requirements dictate. The Future

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Capabilities Analysis will conduct studies, analyses, and prototyping based on the current JBADS concept to improve its readiness to meet potential future requirements with minimal impact to the JBADS program.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DFoS CIDAS - HW S - SSA/LSA - Blister/Nerve	SS/FPIF	FLIR Systems : Inc., Stillwater, OK	0.000	0.847	Feb 2019	2.344	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
DFoS CIDAS BLISTER - HW S - Small Scale Applicators	SS/FPIF	FLIR Systems : Inc., Stillwater, OK	0.000	0.000		0.000		2.018	Dec 2020	-		2.018	Continuing	Continuing	0.000
DFoS CIDAS BLISTER - HW S - Large Scale Applicators	MIPR	Various : Various	0.000	0.000		0.000		0.600	Dec 2020	-		0.600	Continuing	Continuing	0.000
FAMS-S - HW S - System Development and Prototype Refinement	C/CPIF	TBD : N/A	0.000	0.000		0.000		1.000	Jan 2021	-		1.000	Continuing	Continuing	0.000
MPD - HW S - Developmental Testing Assets	C/FFP	TBD : N/A	0.000	0.000		0.000		1.526	Dec 2020	-		1.526	Continuing	Continuing	0.000
JBADS - HW C - Aircraft Decontamination Units and Aircraft Enclosure	C/CPIF	AeroClave : LLC, Winter Park, FL	0.000	1.381	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	0.000	2.228		2.344		5.144		-		5.144	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CHRS - TD/D S - IPT CHRT Support and Readiness Assessments	MIPR	Various : Various	0.000	0.000		1.626	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
DFoS CIDAS - TD/D S - Logistics, Engineering, and IPT Support	MIPR	Various : Various	4.621	0.292	Nov 2018	1.149	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
DFoS CIDAS BLISTER - TD/D S - IPT and Technical Support	MIPR	Various : Various	0.000	0.000		0.000		0.950	Dec 2020	-		0.950	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FAMS-S - ES S - Systems Engineer/Technical SME Support	Various	TBD : N/A	0.000	0.000		0.000		0.472	Jan 2021	-		0.472	Continuing	Continuing	0.000
MDAP - TD/D SB - IPT and Technical Support	MIPR	Various : Various	0.475	0.326	Nov 2018	0.819	Nov 2019	0.831	Nov 2020	-		0.831	Continuing	Continuing	0.000
MPD - ES SB S - Logistics, Engineering, and IPT Support	Various	Various : Various	0.000	0.000		0.000		0.417	Jan 2021	-		0.417	Continuing	Continuing	0.000
JBADS - TD/D S - Logistics, Engineering, and IPT Support	MIPR	Various : Various	3.829	0.625	Dec 2018	0.000		0.308	Dec 2020	-		0.308	Continuing	Continuing	0.000
		Subtotal	8.925	1.243		3.594		2.978		-		2.978	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CHRS - DTE S IPT Test & Evaluation Reporting	MIPR	Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD	0.000	0.000		0.075	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
DFoS CIDAS - OTHT S - Live Agent / Lab, Developmental, and Operational Testing	Various	Various : Various	5.039	2.204	Nov 2018	0.169	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
DFoS CIDAS BLISTER - OTHT S - PQT/DT/OT	MIPR	Various : Various	0.000	0.000		0.000		0.750	Dec 2020	-		0.750	Continuing	Continuing	0.000
FAMS-S - DTE SB - Decon Solution Analysis	Various	TBD : N/A	0.000	0.000		0.000		0.100	Jan 2021	-		0.100	Continuing	Continuing	0.000
MPD - DTE SB - Developmental Testing	Various	TBD : N/A	0.000	0.000		0.000		1.080	Mar 2021	-		1.080	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBADS - OTE S - Initial Operational Test and Evaluation	C/CPIF	AeroClave : LLC, Winter Park, FL	0.000	0.000		0.000		3.183	Dec 2020	-		3.183	Continuing	Continuing	0.000
JBADS - Future Capability Analysis/MIL-STD 810-G Test Planning/Testing/ other T&E activities	Various	Various : Various	0.000	1.157	May 2019	0.078	Dec 2019	0.300	Dec 2020	-		0.300	Continuing	Continuing	0.000
JBADS - Contractor Specification Testing/MIL-STD 810-G support	C/CPIF	AeroClave : LLC, Winter Park, FL	0.000	4.998	Jan 2019	0.100	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
JBADS - OTHT S - Prototype Testbed Capability Development	C/CPFF	Advanced Technologies International : Summerville, SC	0.000	1.381	Jul 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	5.039	9.740		0.422		5.413		-		5.413	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CHRS - PM/MS S - Program Management and Technical Support	MIPR	Various : Various	0.000	0.000		0.417	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
DFoS CIDAS - PM/MS S - Program Management Support	MIPR	Various : Various	2.360	0.703	Nov 2018	0.964	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
DFoS CIDAS BLISTER - PM/MS S - Program Management Support	MIPR	Various : Various	0.000	0.000		0.000		1.149	Dec 2020	-		1.149	Continuing	Continuing	0.000
FAMS-S - PM/MS S - Indirect Program Management	Various	TBD : N/A	0.000	0.000		0.000		0.256	Jan 2021	-		0.256	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MDAP - PM/MS SB - Program Management and Technical Support	MIPR	Various : Various	0.052	0.109	Nov 2018	0.204	Nov 2019	0.204	Nov 2020	-		0.204	Continuing	Continuing	0.000
MPD - PM/MS S - Program Management Support	MIPR	Various : Various	0.000	0.000		0.000		0.802	Jan 2021	-		0.802	Continuing	Continuing	0.000
JBADS - PM/MS S - Program Management Support	MIPR	Various : Various	3.331	1.376	Dec 2018	0.044	Feb 2020	1.008	Dec 2020	-		1.008	Continuing	Continuing	0.000
		Subtotal	5.743	2.188		1.629		3.419		-		3.419	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	19.707	15.399		7.989		16.954		-		16.954	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

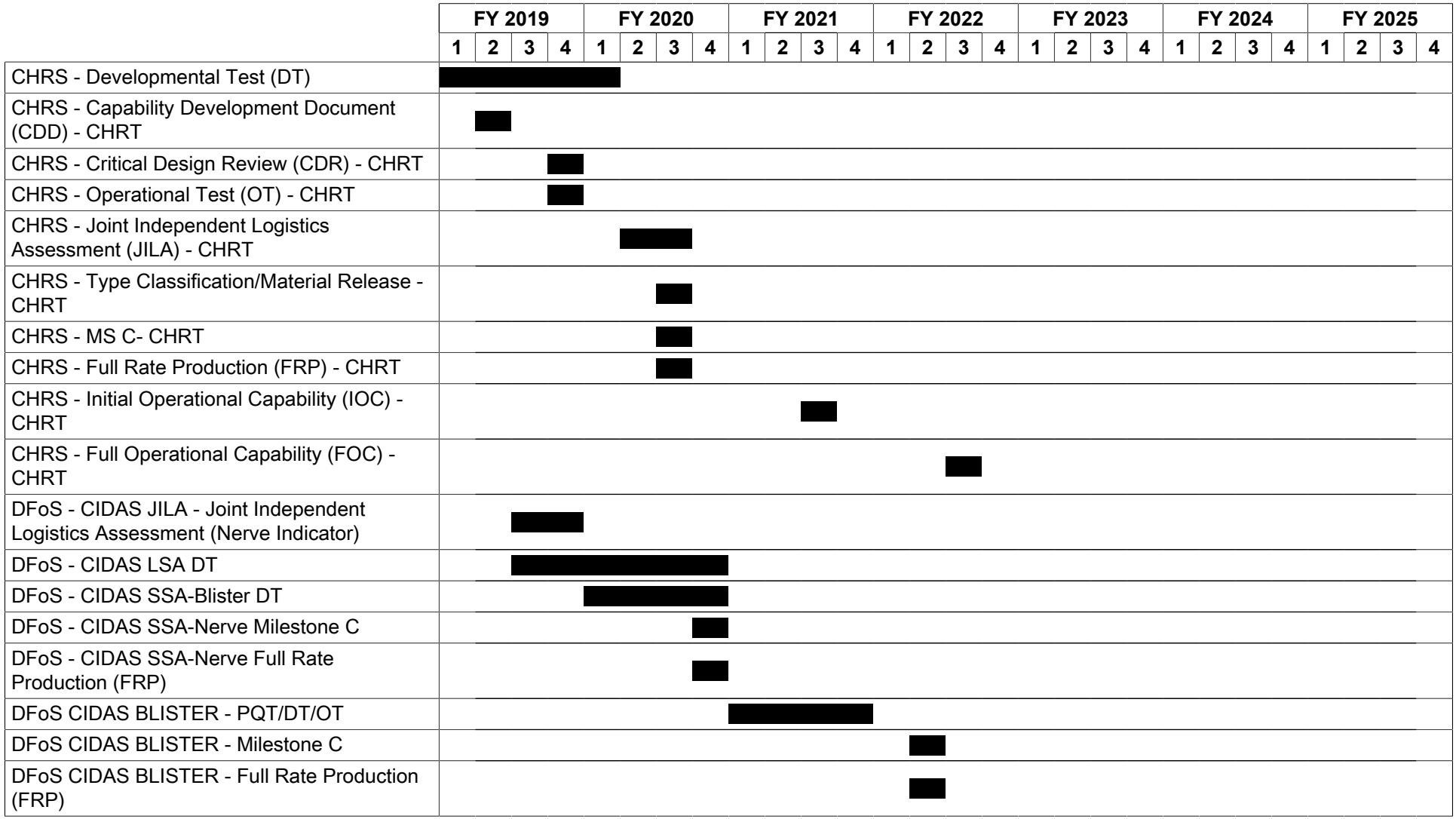

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

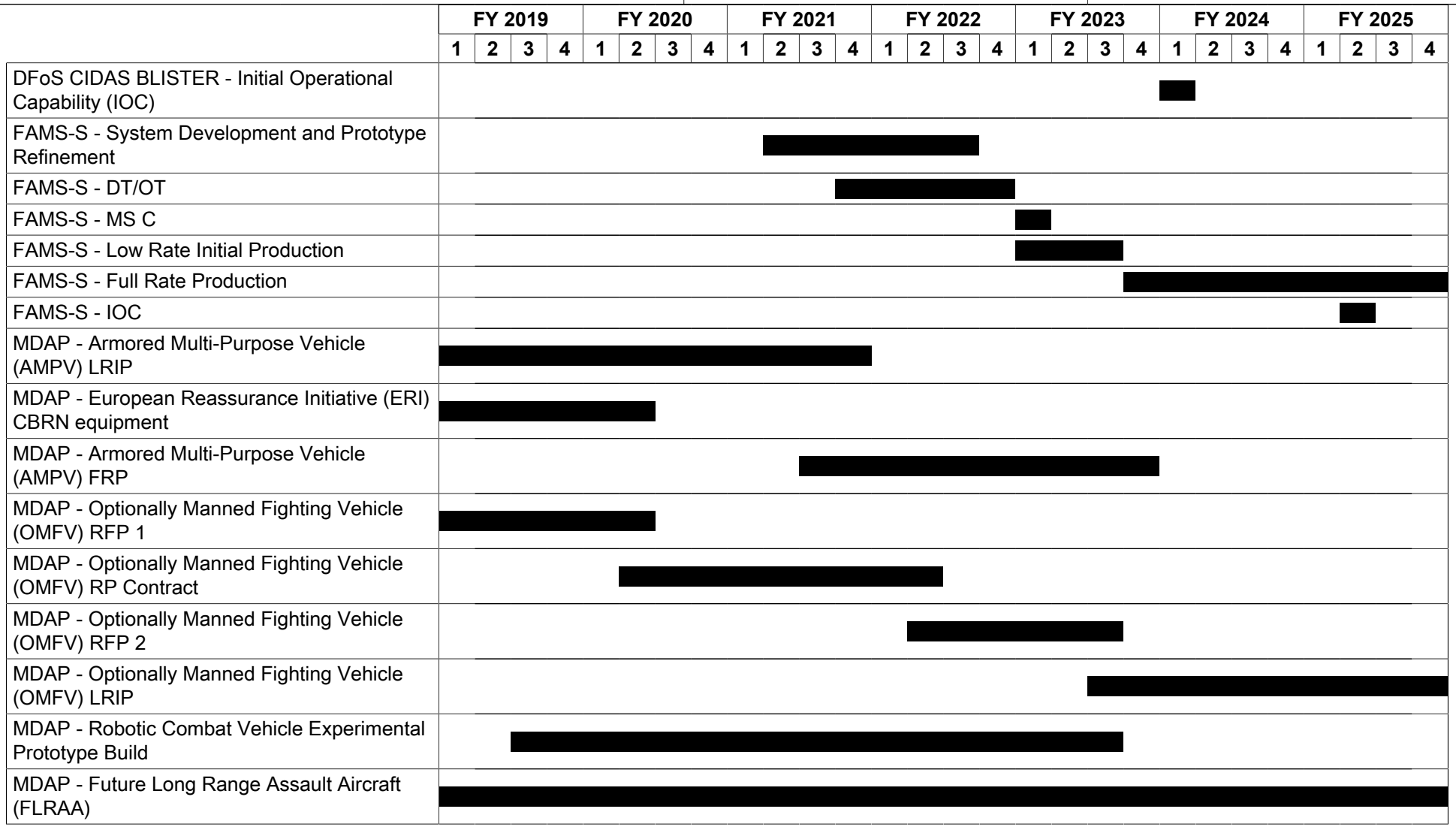

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

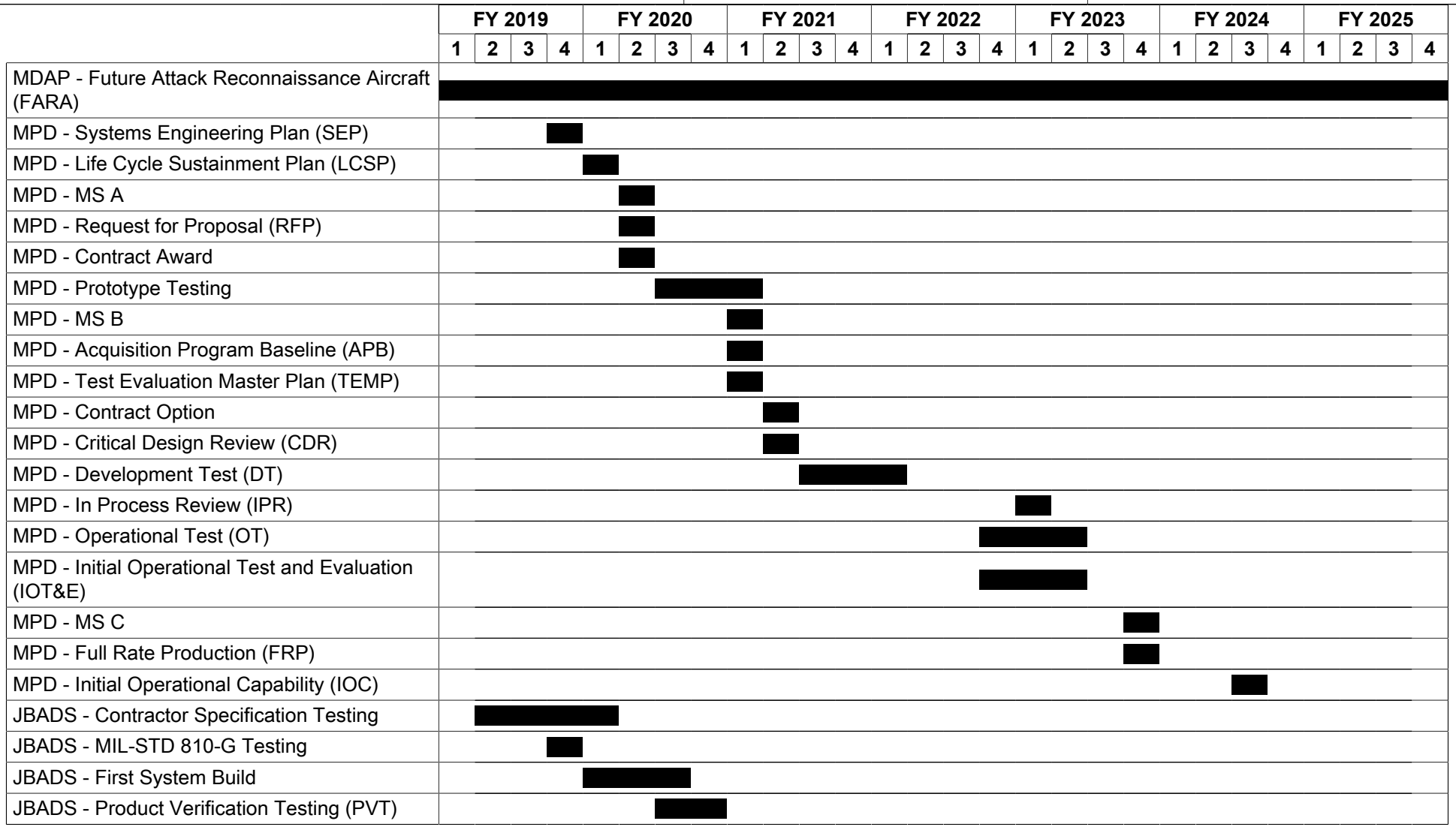

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

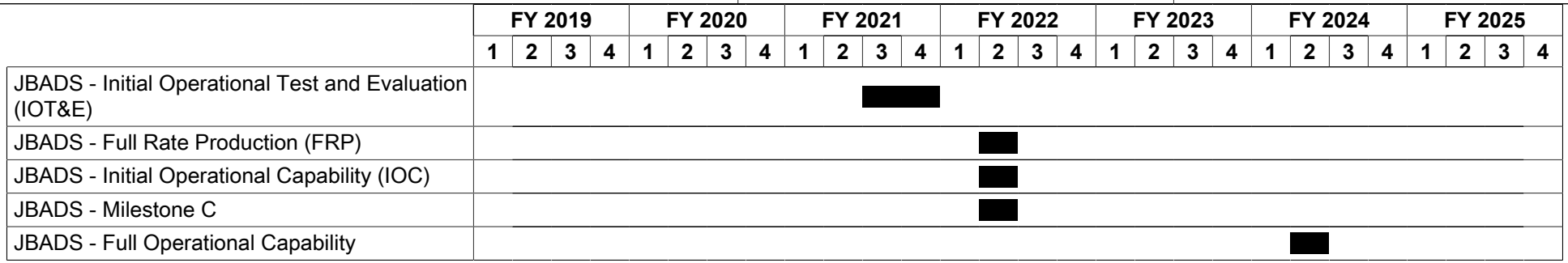

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CHRS - Developmental Test (DT)	1	2019	1	2020
CHRS - Capability Development Document (CDD) - CHRT	2	2019	2	2019
CHRS - Critical Design Review (CDR) - CHRT	4	2019	4	2019
CHRS - Operational Test (OT) - CHRT	4	2019	4	2019
CHRS - Joint Independent Logistics Assessment (JILA) - CHRT	2	2020	3	2020
CHRS - Type Classification/Material Release - CHRT	3	2020	3	2020
CHRS - MS C- CHRT	3	2020	3	2020
CHRS - Full Rate Production (FRP) - CHRT	3	2020	3	2020
CHRS - Initial Operational Capability (IOC) - CHRT	3	2021	3	2021
CHRS - Full Operational Capability (FOC) - CHRT	3	2022	3	2022
DFoS - CIDAS JILA - Joint Independent Logistics Assessment (Nerve Indicator)	3	2019	4	2019
DFoS - CIDAS LSA DT	3	2019	4	2020
DFoS - CIDAS SSA-Blister DT	1	2020	4	2020
DFoS - CIDAS SSA-Nerve Milestone C	4	2020	4	2020
DFoS - CIDAS SSA-Nerve Full Rate Production (FRP)	4	2020	4	2020
DFoS CIDAS BLISTER - PQT/DT/OT	1	2021	4	2021
DFoS CIDAS BLISTER - Milestone C	2	2022	2	2022
DFoS CIDAS BLISTER - Full Rate Production (FRP)	2	2022	2	2022
DFoS CIDAS BLISTER - Initial Operational Capability (IOC)	1	2024	1	2024
FAMS-S - System Development and Prototype Refinement	2	2021	3	2022
FAMS-S - DT/OT	4	2021	4	2022
FAMS-S - MS C	1	2023	1	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
FAMS-S - Low Rate Initial Production	1	2023	3	2023
FAMS-S - Full Rate Production	4	2023	4	2025
FAMS-S - IOC	2	2025	2	2025
MDAP - Armored Multi-Purpose Vehicle (AMPV) LRIP	1	2019	4	2021
MDAP - European Reassurance Initiative (ERI) CBRN equipment	1	2019	2	2020
MDAP - Armored Multi-Purpose Vehicle (AMPV) FRP	3	2021	4	2023
MDAP - Optionally Manned Fighting Vehicle (OMFV) RFP 1	1	2019	2	2020
MDAP - Optionally Manned Fighting Vehicle (OMFV) RP Contract	2	2020	2	2022
MDAP - Optionally Manned Fighting Vehicle (OMFV) RFP 2	2	2022	3	2023
MDAP - Optionally Manned Fighting Vehicle (OMFV) LRIP	3	2023	4	2025
MDAP - Robotic Combat Vehicle Experimental Prototype Build	3	2019	3	2023
MDAP - Future Long Range Assault Aircraft (FLRAA)	1	2019	4	2025
MDAP - Future Attack Reconnaissance Aircraft (FARA)	1	2019	4	2025
MPD - Systems Engineering Plan (SEP)	4	2019	4	2019
MPD - Life Cycle Sustainment Plan (LCSP)	1	2020	1	2020
MPD - MS A	2	2020	2	2020
MPD - Request for Proposal (RFP)	2	2020	2	2020
MPD - Contract Award	2	2020	2	2020
MPD - Prototype Testing	3	2020	1	2021
MPD - MS B	1	2021	1	2021
MPD - Acquisition Program Baseline (APB)	1	2021	1	2021
MPD - Test Evaluation Master Plan (TEMP)	1	2021	1	2021
MPD - Contract Option	2	2021	2	2021
MPD - Critical Design Review (CDR)	2	2021	2	2021
MPD - Development Test (DT)	3	2021	1	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *Decontamination (SDD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MPD - In Process Review (IPR)	1	2023	1	2023
MPD - Operational Test (OT)	4	2022	2	2023
MPD - Initial Operational Test and Evaluation (IOT&E)	4	2022	2	2023
MPD - MS C	4	2023	4	2023
MPD - Full Rate Production (FRP)	4	2023	4	2023
MPD - Initial Operational Capability (IOC)	3	2024	3	2024
JBADS - Contractor Specification Testing	2	2019	1	2020
JBADS - MIL-STD 810-G Testing	4	2019	4	2019
JBADS - First System Build	1	2020	3	2020
JBADS - Product Verification Testing (PVT)	3	2020	4	2020
JBADS - Initial Operational Test and Evaluation (IOT&E)	3	2021	4	2021
JBADS - Full Rate Production (FRP)	2	2022	2	2022
JBADS - Initial Operational Capability (IOC)	2	2022	2	2022
JBADS - Milestone C	2	2022	2	2022
JBADS - Full Operational Capability	2	2024	2	2024

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program											Date: February 2020	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*				Project (Number/Name) IP5 / *Individual Protection (SDD)*			
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
IP5: *Individual Protection (SDD)*	-	10.597	12.663	12.960	-	12.960	12.858	12.796	8.963	8.436	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides Engineering & Manufacturing Development Phase and Low Rate Initial Production (EMD/LRIP) for individual protection equipment, with the goal of providing equipment that allows the individual Soldier, Sailor, Airman, or Marine to operate in a contaminated Nuclear, Biological and Chemical (NBC) environment with little or no degradation of his/her performance.

Efforts included in this project are:
(1) Special Purpose Unit Rapid Capability Development and Deployment (SPU RCDD)
(2) Uniform Integrated Protective Ensemble (UIPE) Family of Systems (FoS)
(3) UIPE FoS General Purpose (GP)
(4) Joint Service Aircrew Mask for Strategic Aircraft (JSAM SA)
(5) JSAM for Tactical Aircraft (JSAM TA)

SPU RCDD will facilitate rapid response to near-term and emergent chemical-biological defensive capability requirements from elements of the Joint Special Operations Command (JSOC), 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 chemical and biological (CB) capabilities that can be quickly transitioned to needed elements and formations of the joint force, in whole or part, 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) from the Joint Science and Technology Office (JSTO) and the Defense Advanced Research Projects Agency (DARPA) among others; 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) products along with novel redesign approaches to optimize existing solutions to new challenges supported by "buy-try-decide-acquire" acquisition strategies. Projects being initiated or continued in FY21 include 1) modular and micro Powered Air Purifying Respirators (PAPR) that will provide users an improved form-fit over the existing C420 PAPR configuration, be of smaller size and weight than the C420, and extend the filter and battery life beyond current capability so users may continue operating in a CB-contaminated environment unencumbered, and 2) CBRND protective equipment in response to new and emerging threats and opportunities.

UIPE FoS will develop a family of systems that will provide the broad spectrum of users with individual percutaneous protective equipment allowing the ability to operate in a contaminated environment with no or minimal degradation in performance. UIPE FoS will provide protection from operationally relevant traditional and non-traditional CBRN threats likely to be encountered during joint force operations.

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In FY21, UIPE FoS transitions to UIPE FoS General Purpose (GP), UIPE FoS Air and UIPE FoS Gloves. In order to reflect the structure of the program, UIPE FoS will meet Mission Area needs, not individual Service needs. The four Mission Areas are: Land, Air, Sea, and Homeland Defense. Each of the Mission Areas have unique mission requirements that the UIPE FoS GP, Air and Gloves solutions will fulfill.

UIPE FoS GP will provide a family of systems that will give the Warfighter percutaneous protection from operationally relevant traditional, non-traditional, and advanced CBRN/Toxic Industrial Material (TIM) threats likely to be encountered during joint force operations. The family of systems is being developed based on agreed upon Service Mission Areas of which there are four: Land, Sea, Air, and Homeland Defense. Each of the Mission Areas have unique mission requirements that the combined UIPE FoS solutions will fulfill. The overarching goal of each of the four Mission Areas is to minimize operational burden and provide improved form, fit, function, and integration with the current Warfighter kits compared to legacy systems. The Tactical All-Hazards Threat Protective Ensemble (TATPE) will be a subset to the UIPE FoS GP and capitalize on the protection factor of commercial Level A with design modifications to align with the necessary operational requirements. This suit serves as an additional tool in the arsenal until technology matures to the point of delivering a similar capability applied against the range of military operations in all environments under all conditions.

The JSAM SA and JSAM TA are Acquisition Category (ACAT) III programs developed to provide respiratory and ocular protection. The JSAM family is a lightweight Chemical, Biological, Radiological and Nuclear (CBRN) protective mask for most United States Army (USA), Navy (USN), Air Force (USAF), and Marine Corps (USMC) rotary wing and fixed wing aircrew. All JSAM variants will be compatible with most Below-The-Neck (BTN) CB protection ensembles and existing Aircrew Life Support Equipment (ALSE). They will include a protective hood assembly, CB filter, blower assembly (except JSAM SA), and an intercom for ground communication. They will also provide flame protection, demist/emergency demist (except JSAM SA), and anti-drowning features. The goal of the JSAM programs is to develop, manufacture, field, and sustain an aircrew respirator system that, in conjunction with BTN clothing ensembles. These masks posture all aircrew to operate in an actual or perceived CB domain as directed in the 2018 National Defense Strategy.

The JSAM SA mask components will be optimized to minimize their impact on the wearer's performance and maximize its ability to interface with aircrew protective clothing. JSAM SA will provide pressure breathing for altitude for aircraft that do not require pressure breathing for gravity. JSAM SA will integrate with aircraft subsystems which include aviation life support equipment, aircrew flight equipment, aircraft seating, portable aircrew systems, communications systems, and aircraft oxygen systems. The JSAM SA mask will provide individual respiratory, ocular, and percutaneous protection of chemical and biological warfare agents, and select Toxic Industrial Chemicals (TICs) for USAF (E-3, E-8, C-135s, C-17, C-145, C-146, C-130s, C-5), Aeromedical personnel (C-130s, KC-10, U-18, KC-135, C-12s, KC-46), USN (P-8, E-6, C-40, C-12, C-20), USMC (C-9, C-12, C-20, UC-35), and USA (RC-7, C-12s, C-20, C-26, UC-35, C-37) strategic aircrew.

The JSAM TA will provide chemical biological protection for aircrew of high performance, ejection seat tactical aircraft. The mask components will be optimized to minimize their impact on the wearer's performance and maximize its ability to interface with aircrew protective clothing. JSAM TA will be compatible with anti-G systems, providing Chemical, Biological, Radiological (CBR) protection without degrading protection against Gravity Induced Loss of Consciousness (GLOC) up to 9 Gz. JSAM TA will integrate with essential aircraft subsystems. The JSAM TA mask will provide individual respiratory, ocular, and percutaneous protection of chemical and biological warfare agents, and select Toxic Industrial Chemicals (TICs) for USAF (F-22 A), USN (E-2 C/D, E/A-18G, F/A-18 A/C/E/F), and USMC (F/A-18 A/C/D, AV-8B, KC-130J and MV-22) tactical aircrew members. The mask components will be optimized to minimize their impact on the wearer's performance and maximize its ability to

interface with aircrew protective clothing. JSAM TA will be compatible with anti-G systems, providing Chemical, Biological, Radiological (CBR) protection without degrading protection against Gravity Induced Loss of Consciousness (GLOC) up to 9 Gz. JSAM TA will integrate with essential aircraft subsystems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 1) Special Purpose Unit Rapid Capability Development & Deployment (SPU RCDD) ***Description:*** Development of specialized equipment for agent specific threats. ***FY 2020 Plans:*** Initiate rapid development and acquisition initiatives utilizing emergent chemical-biological defensive capabilities, decision support tools, and respiratory/ocular enhancements to support Special Operations Force (SOF) counter-proliferation efforts and development of decontamination of SOF specialized equipment. ***FY 2021 Plans:*** Continue developing, prototyping, and maturing CBRND technologies to rapidly equip users with capabilities in response to new and emerging threats and opportunities. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters.	-	3.399	4.537
Title: 2) Uniform Integrated Protective Ensemble (UIPE) Family of Systems (FoS) ***Description:*** Engineering and Manufacturing Development (EMD) ***FY 2020 Plans:*** Receive Contract Award for production, receive USN/USMC Fielding Decision Point Conduct Initial Operational Test and Evaluation (IOT&E) for the Navy/Marine Corps, receive Operational Test Agency Evaluation Report (OER). ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred to another funding line. (UIPE FoS GP)	5.852	4.737	-
Title: 3) UIPE FoS ***Description:*** System Development and Demonstration/Engineering and Manufacturing Development of Tactical All-Hazards Threat Protective Ensemble (TATPE) ***FY 2020 Plans:***	1.100	3.400	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Continue prototype refinement based on user input/feedback, complete entrance criteria for a MS B decision, and initiate combined DT/OT. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project transitioned to Advanced Development.			
Title: 4) UIPE FoS General Purpose (GP) ***Description:*** Development of the next generation protective ensembles (e.g., suits, boots, and gloves) and respiratory and ocular protection equipment (e.g., protective masks) ***FY 2021 Plans:*** Achieve Milestone B and award a contract for the Engineering and Manufacturing Development (EMD) phase; conduct a Manufacturing Readiness Assessment(MRA); and begin Developmental/Operational Testing (DT/OT). ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred from another funding line. (UIPE FoS)	-	-	4.328
Title: 5) UIPE FoS Tactical All-Hazards Threat Protective Ensemble (TATPE) ***Description:*** TATPE system development, developmental testing, and operational assessment. ***FY 2021 Plans:*** Complete EMD phase to include system level testing and user evaluations. Complete MS C documentation to include final assessment, analysis and system documentation. Mission area focus includes: Land, Sea, and Homeland Defense. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred from another funding line. (UIPE FoS)	-	-	2.950
Title: 6) Joint Service Aircrew Mask for Strategic Aircraft (JSAM SA) ***Description:*** Operational Testing and Evaluation (OT&E) ***FY 2020 Plans:*** Continue Operational Testing (OT), Integration Testing and Safe-to-Fly on various Service aircraft. Continue engineering studies to assess communication system adaptors and oxygen system adaptors for various Service aircraft. Continue updates to the Technical Manual (TM) to include specialized procedures for the various aircraft tested. ***FY 2021 Plans:***	1.627	1.127	1.145

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Continue OT, Integration Testing and Safe-to-Fly on various Service aircraft. Continue updates to the TM to include specialized procedures for the various aircraft based on testing results. Continue engineering studies to assess communication system adaptors and oxygen system adaptors for remaining aircraft. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Title: 7) Joint Service Aircrew Mask for Tactical Aircraft (JSAM TA) ***Description:*** Integration Testing Events and Milestone C Preparation	2.018	-	-
Accomplishments/Planned Programs Subtotals	10.597	12.663	12.960

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• JI0002: *JS AIRCREW MASK (JSAM)*	50.214	56.846	72.550	-	72.550	67.325	50.412	8.247	0.000	0.000	305.594
• MA0401: *CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)*	12.264	14.984	1.492	-	1.492	0.457	0.000	0.000	0.000	0.000	29.197

Remarks

D. Acquisition Strategy

SPU RAPID CAPABILITY DEVELOPMENT AND DEPLOYMENT (SPU RCDD)

Non-traditional projects will be executed for capabilities identified by Joint Special Operations Command (JSOC), select elements from across the Special Operations Forces (SOF) Enterprise, and other Joint Force enabling units. The SPU RCDD BA5 acquisition strategy for developmental efforts will allow rapid prototyping and testing of mission critical capabilities needed to enhance mission success. The SPU RCDD BA7 modernization effort will use technical and functional evaluations of currently-fielded items to introduce and incorporate operationally-relevant system developments. Both efforts will be accomplished by awarding an agreement through the Countering Weapons of Mass Destruction Other Transaction Authority (CWMD OTA) for the procurement of test assets. An OTA contracting approach will be used to procure test prototypes and test articles of possible solutions. The OTA consists of a consortium of all potential industry, research institutions, and non-traditional government that could be potential solvers for the program. Procurement will be through either the OTAs, a Small Business Innovative Research contract, or a more traditional contracting vehicle.

CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE FAMILY OF SYSTEMS (UIPE FOS)

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The UIPE FoS program will conduct market research through both Requests For Information (RFIs) and a call for White Papers through an Other Transaction Authority (OTA) contracting approach. Candidate technologies will follow the same acquisition strategy employed for the suit: Early User Tests/Wear events and material and system level testing to identify available capabilities followed by a Trade Space Analysis to determine the most suitable glove(s). The UIPE FoS GP program will monitor S&T activities for possible technology transitions.

In FY21, UIPE FoS transitions to UIPE FoS GP, UIPE FoS Air and UIPE FoS Gloves. In order to reflect the structure of the program, UIPE FoS will meet Mission Area needs, not individual Service needs. The four Mission Areas are: Land (i.e. GP), Air, Sea, and Homeland Defense. Each of the Mission Areas has unique mission requirements that the UIPE FoS GP, Air and Gloves solutions will seek to fulfill.

UNIFORM INTEGRATED PROTECTIVE ENSEMBLE GENERAL PURPOSE (UIPE FOS GP)

The UIPE FoS GP program utilized an Other Transaction Authority (OTA) contracting approach to procure informational white papers during the Technology Maturation and Risk Reduction (TMRR) phase, prototypes, and test articles of possible solutions. The OTA consists of a consortium of all potential Industry, research institutions, and non-traditional government that could be potential solvers for the program. The OTA yielded several different prototypes that are undergoing material and system level testing and Early User Tests. Along with the OTA prototypes, the program is exploring the feasibility of a layered concept designed by the government and a manufacturing partner.

JOINT SERVICE AIRCREW MASK STRATEGIC AIRCRAFT (JSAM SA)

The JSAM SA acquisition approach involves modifying the fielded M53 ground mask design in order to add Pressure Breathing for Altitude (PBA), up to 40,000 feet above sea-level, and middle ear equalization capabilities. The JSAM SA mask is intended to be fielded to the United States Air Force (USAF), United States Navy (USN), United States Marine Corps (USMC), and United States Army (USA). The Research Development Test & Evaluation (RDT&E) contract was awarded via sole source to Avon Protection Systems, Cadillac, Michigan to modify and field a commercially available mask (M53).

The overall acquisition strategy is to produce and field the JSAM SA masks incrementally. This approach allows the JSAM SA mask to be fielded to aircrew of the most applicable aircrafts in the shortest amount of time. At the end of all increments, the Services will have achieved their Full Operating Capability (FOC). The first increment will consist of fielding the JSAM SA mask to the USAF E-3 and USN P-8 aircrew. Based on technical difficulty and mission need, the JSAM SA program will work with the Services to determine which aircraft will be addressed in subsequent increments.

The overall test strategy involves four major phases. The first test phase consists of Design Verification Testing (DVT) which will evaluate developmental prototype masks prior to Critical Design Review (CDR). The second test phase is Developmental Testing (DT) to support Milestone C/LRIP. The third test phase is Operational Testing (OT) of assets to support Initial Operating Capability (IOC) fielding to USAF, USN, and USA aircrew. The final test phase will consist of Integration and Airworthiness Certification (I&AC) testing for all remaining aircraft.

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The contract strategy consists of two sole-source contracts with Avon Protection Systems, the manufacturer of the fielded M53 mask. The first contract, which was awarded on 31 July 2013, covers all activities during the Engineering and Manufacturing Development (EMD) phase to include all LRIP builds. The second contract, which was awarded on 4 January 2019 to Avon Protection Systems, will cover the activities during the Production and Deployment (PD) phase including all Full Rate Production (FRP) builds for the Services.

JOINT SERVICE AIRCREW MASK TACTICAL AIRCRAFT (JSAM TA)

The JSAM TA acquisition approach involves modifying the USN/USMC fielded A/P22P-14A series respirator design to meet aircraft integration requirements. The test strategy involves integrated testing (combined DT/OT) completed prior to MS C/FRP. The contract strategy consists of two sole source Firm Fixed Price (FFP) contracts with Cam Lock, Ltd., Aldershot Hampshire, United Kingdom. The first contract, awarded September 2016, covers all activities during the Engineering, Manufacturing, and Development (EMD) phase. The second contract awarded, September 2019, is a sole source FFP Indefinite Delivery/Indefinite Quantity (ID/IQ) that covers the activities during the Production and Deployment phase including Full Rate Production (FRP) builds. The JSAM TA mask is intended to be fielded to the USN and USMC.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SPU RCDD - HW C - Prototype Procurement	Various	Various : Various	0.000	0.000		1.510	Dec 2019	2.016	Dec 2020	-		2.016	Continuing	Continuing	0.000
UIPE FOS - HW S - TATPE system development, fabrication, and swatch and system level technical testing	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.621	Jan 2019	1.640	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
UIPE FOS - HW S - UIPE FoS Prototype Development	Various	Various : Various	0.000	0.000		1.795	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
UIPE FOS GP - HW S - TATPE System Development	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		0.000		2.050	Nov 2020	-		2.050	Continuing	Continuing	0.000
UIPE FOS GP - HW C - Prototype Development	MIPR	TBD : N/A	0.000	0.000		0.000		0.025	Dec 2020	-		0.025	Continuing	Continuing	0.000
		Subtotal	0.000	0.621		4.945		4.091		-		4.091	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SPU RCDD - TD/D C - Technical Support	Various	Various : Various	0.000	0.000		0.342	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
SPU RCDD - ES C - Engineering Support	Various	Various : Various	0.000	0.000		0.335	Dec 2019	0.458	Dec 2020	-		0.458	Continuing	Continuing	0.000
UIPE FOS - ES S - Logistics, Engineering and IPT Support	Various	Various : Various	0.000	1.889	Apr 2019	1.773	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
UIPE FOS - ES S - TATPE Integrated Product Team (IPT) Program, Engineering and Technical Support	MIPR	Various : Various	0.000	0.279	Jan 2019	0.685	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UIPE FOS GP - ES S - TATPE Engineering & Technical IPT Support / SME Support	Various	Various : Various	0.000	0.000		0.000		0.300	Nov 2020	-		0.300	Continuing	Continuing	0.000
UIPE FOS GP - ES C - Engineering & Technical IPT Support / SME Support	Various	Various : Various	0.000	0.000		0.000		1.280	Dec 2020	-		1.280	Continuing	Continuing	0.000
JSAM SA - TD/D S - Logistics, Engineering, and IPT Support	MIPR	Various : Various	0.116	0.674	Dec 2018	0.120	Feb 2020	0.130	Dec 2020	-		0.130	Continuing	Continuing	0.000
JSAM TA - ES S - Logistics, Engineering and IPT Support	MIPR	Various : Various	6.252	1.524	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	6.368	4.366		3.255		2.168		-		2.168	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SPU RCDD - OTE S - Operational Assessment	MIPR	National Assessment Group : Kirkland, NM	0.000	0.000		0.000		0.500	Dec 2020	-		0.500	Continuing	Continuing	0.000
SPU RCDD - DTE C - Testing and Evaluation	MIPR	Combat Capabilities Development Command (CCDC) Chemical Biological Center : Aberdeen Proving Ground, MD	0.000	0.000		0.665	Dec 2019	0.435	Dec 2020	-		0.435	Continuing	Continuing	0.000
UIPE FOS - DTE S - System Level Testing	Various	Various : Various	0.000	3.155	Dec 2018	0.257	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
UIPE FOS - OTHT S - TATPE Testing for chemical warfare agent and toxic industrial	MIPR	CCDC CBC : Aberdeen Proving Ground, MD	0.000	0.200	Jan 2019	1.075	Apr 2020	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
chemical swatch level testing															
UIPE FOS GP - DTE C - DT/OT	Various	Various : Various	0.000	0.000		0.000		1.499	Dec 2020	-		1.499	Continuing	Continuing	0.000
UIPE FOS GP - OTE S - TATPE User Evaluation	Various	Various : Various	0.000	0.000		0.000		0.400	Nov 2020	-		0.400	Continuing	Continuing	0.000
UIPE FOS GP - DTE S - TATPE Technical Testing	Various	Various : Various	0.000	0.000		0.000		0.200	Nov 2020	-		0.200	Continuing	Continuing	0.000
JSAM SA - DTE S - DT/OT	MIPR	Various : Various	2.193	0.513	Nov 2018	0.770	Nov 2019	0.774	Dec 2020	-		0.774	Continuing	Continuing	0.000
JSAM TA - DTE S -Testing and Integration	MIPR	Various : Various	4.179	0.127	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	6.372	3.995		2.767		3.808		-		3.808	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SPU RCDD - PM/MS C - Program Management Support	Various	Various : Various	0.000	0.000		0.547	Nov 2019	1.128	Nov 2020	-		1.128	Continuing	Continuing	0.000
UIPE FOS - MS S - PM/SME Program Management Support	MIPR	Various : Various	0.000	0.808	Dec 2018	0.912	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
UIPE FOS GP - PM/MS C - Program Management Support	Various	Various : Various	0.000	0.000		0.000		1.524	Dec 2020	-		1.524	Continuing	Continuing	0.000
JSAM SA - PM/MS S - Program Management Support	MIPR	Various : Various	0.974	0.440	Nov 2018	0.237	Feb 2020	0.241	Dec 2020	-		0.241	Continuing	Continuing	0.000
JSAM TA - PM/MS S - Program Management Support	MIPR	Various : Various	2.073	0.367	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	3.047	1.615		1.696		2.893		-		2.893	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.787	10.597		12.663		12.960		-		12.960	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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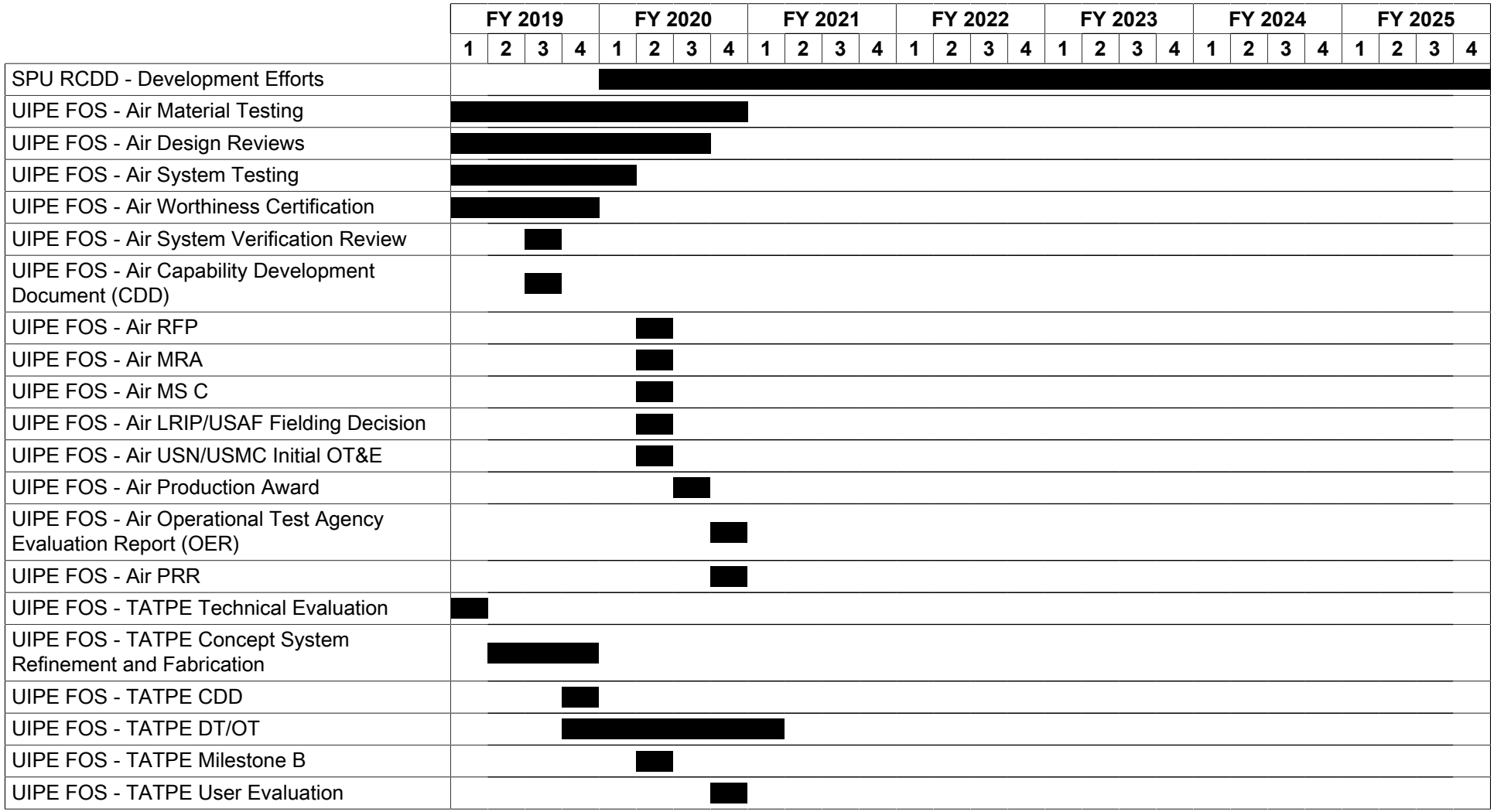

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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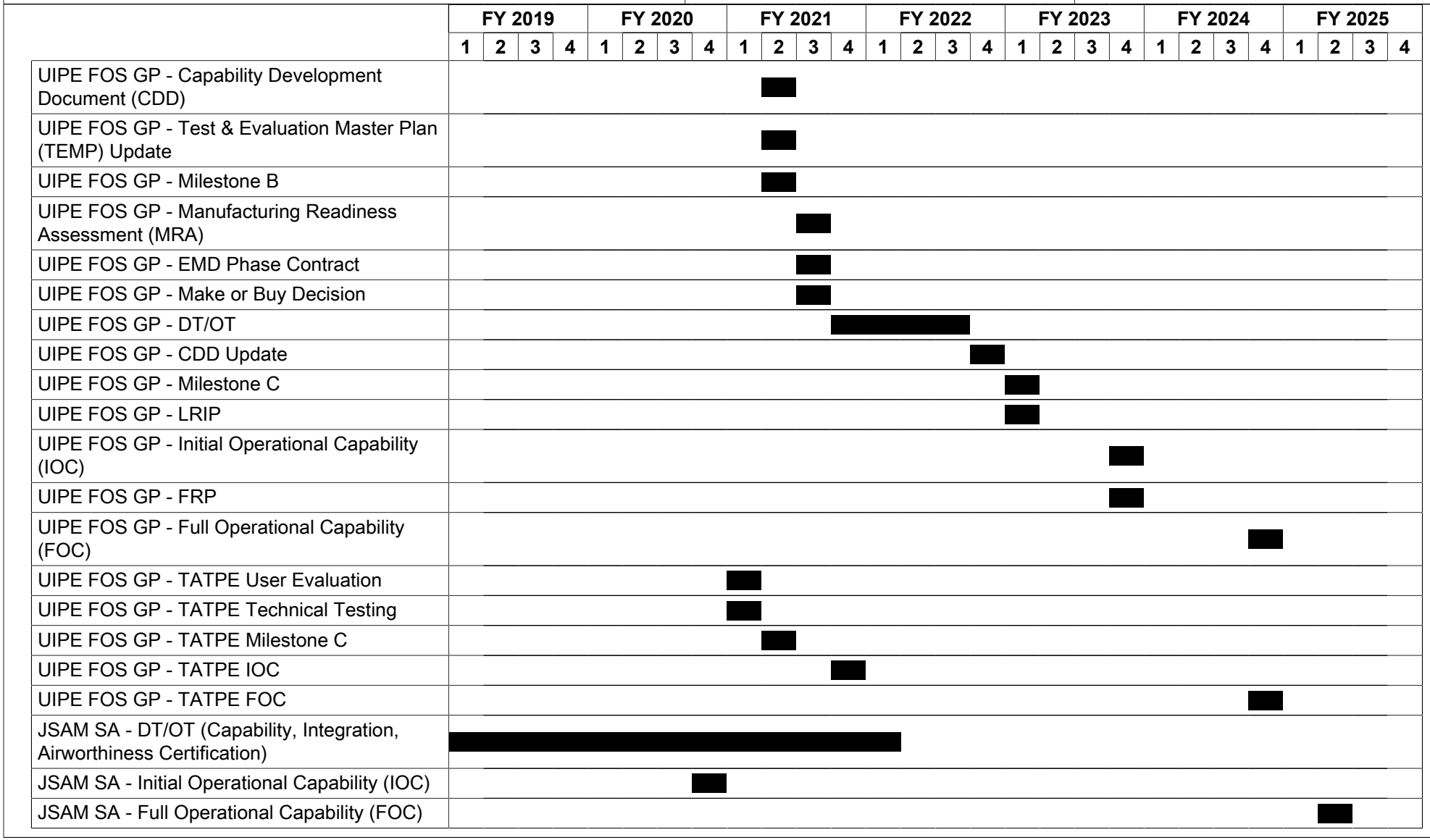

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *Individual Protection (SDD)*

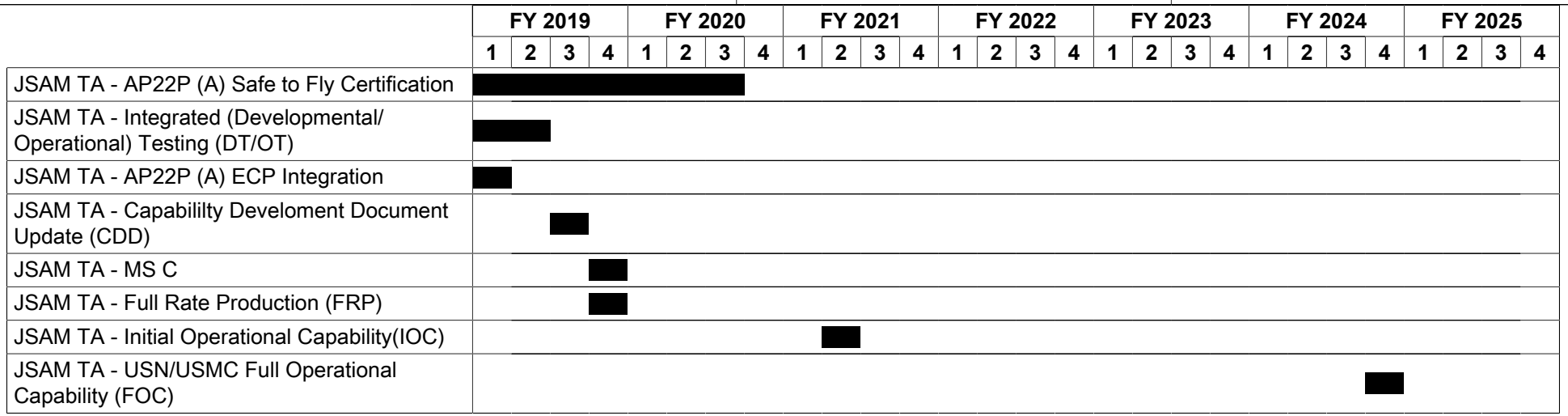

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *Individual Protection (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SPU RCDD - Development Efforts	1	2020	4	2025
UIPE FOS - Air Material Testing	1	2019	4	2020
UIPE FOS - Air Design Reviews	1	2019	3	2020
UIPE FOS - Air System Testing	1	2019	1	2020
UIPE FOS - Air Worthiness Certification	1	2019	4	2019
UIPE FOS - Air System Verification Review	3	2019	3	2019
UIPE FOS - Air Capability Development Document (CDD)	3	2019	3	2019
UIPE FOS - Air RFP	2	2020	2	2020
UIPE FOS - Air MRA	2	2020	2	2020
UIPE FOS - Air MS C	2	2020	2	2020
UIPE FOS - Air LRIP/USAF Fielding Decision	2	2020	2	2020
UIPE FOS - Air USN/USMC Initial OT&E	2	2020	2	2020
UIPE FOS - Air Production Award	3	2020	3	2020
UIPE FOS - Air Operational Test Agency Evaluation Report (OER)	4	2020	4	2020
UIPE FOS - Air PRR	4	2020	4	2020
UIPE FOS - TATPE Technical Evaluation	1	2019	1	2019
UIPE FOS - TATPE Concept System Refinement and Fabrication	2	2019	4	2019
UIPE FOS - TATPE CDD	4	2019	4	2019
UIPE FOS - TATPE DT/OT	4	2019	1	2021
UIPE FOS - TATPE Milestone B	2	2020	2	2020
UIPE FOS - TATPE User Evaluation	4	2020	4	2020
UIPE FOS GP - Capability Development Document (CDD)	2	2021	2	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
UIPE FOS GP - Test & Evaluation Master Plan (TEMP) Update	2	2021	2	2021
UIPE FOS GP - Milestone B	2	2021	2	2021
UIPE FOS GP - Manufacturing Readiness Assessment (MRA)	3	2021	3	2021
UIPE FOS GP - EMD Phase Contract	3	2021	3	2021
UIPE FOS GP - Make or Buy Decision	3	2021	3	2021
UIPE FOS GP - DT/OT	4	2021	3	2022
UIPE FOS GP - CDD Update	4	2022	4	2022
UIPE FOS GP - Milestone C	1	2023	1	2023
UIPE FOS GP - LRIP	1	2023	1	2023
UIPE FOS GP - Initial Operational Capability (IOC)	4	2023	4	2023
UIPE FOS GP - FRP	4	2023	4	2023
UIPE FOS GP - Full Operational Capability (FOC)	4	2024	4	2024
UIPE FOS GP - TATPE User Evaluation	1	2021	1	2021
UIPE FOS GP - TATPE Technical Testing	1	2021	1	2021
UIPE FOS GP - TATPE Milestone C	2	2021	2	2021
UIPE FOS GP - TATPE IOC	4	2021	4	2021
UIPE FOS GP - TATPE FOC	4	2024	4	2024
JSAM SA - DT/OT (Capability, Integration, Airworthiness Certification)	1	2019	1	2022
JSAM SA - Initial Operational Capability (IOC)	4	2020	4	2020
JSAM SA - Full Operational Capability (FOC)	2	2025	2	2025
JSAM TA - AP22P (A) Safe to Fly Certification	1	2019	3	2020
JSAM TA - Integrated (Developmental/Operational) Testing (DT/OT)	1	2019	2	2019
JSAM TA - AP22P (A) ECP Integration	1	2019	1	2019
JSAM TA - Capabililty Develoment Document Update (CDD)	3	2019	3	2019
JSAM TA - MS C	4	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JSAM TA - Full Rate Production (FRP)	4	2019	4	2019
JSAM TA - Initial Operational Capability(IOC)	2	2021	2	2021
JSAM TA - USN/USMC Full Operational Capability (FOC)	4	2024	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program											Date: February 2020	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*				Project (Number/Name) IS5 / *Information Systems (SDD)*			
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
IS5: *Information Systems (SDD)*	-	21.993	21.166	6.019	-	6.019	5.691	5.232	5.232	5.493	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Engineering and Manufacturing Development and Low Rate Initial Production (EMD/LRIP). Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, CONOPS and TTPs.

Efforts included in this project are:
(1) Global Biosurveillance Portal (Global-BSP)
(2) Chemical Biological Radiological and Nuclear Information Systems (CBRN IS)
(3) Joint Effects Model 2 (JEM 2)
(4) Joint Warning and Reporting Network 2 (JWARN 2), and
(5) Software Support Activity (SSA).

The Global-BSP is an unclassified, web-based computer and mobile application which facilitates collaboration, communication, and information sharing in support of the preparedness, detection, management, and mitigation of CBRN, as well as all hazard events. These capabilities enable the use of data visualization, real-time messaging and file sharing, and DoD and USG cooperation to expedite the timely identification and detection of CBRN events in order to minimize operational impacts to the local and global populations.

CBRN IS 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 Integrated Early Warning (IEW) 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 JEM 2 is a software application that provides the Department of Defense (DoD) with the only operationally tested and accredited tool to model and simulate the effects of Chemical, Biological, Radiological and Nuclear (CBRN) weapon strikes and incidents. JEM 2 applies advanced physics using weather, terrain, and agent characteristics to predict the time-phased impact of CBRN and Toxic Industrial Chemical/Material (TIC/TIM). JEM 2 displays hazard information on the Common Operational Picture (COP) and allows commanders to assess risk and take steps mitigate the effects of Weapons of Mass Destruction (WMD) on operational forces.

The JWARN 2 is a software application that provides the Department of Defense warning and reporting system that enables an immediate and integrated response to threats of contamination by WMD, CBRN and TIM incidents. JWARN 2 provides a digital display of CBRN reports on the COP, presented through Service provided

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Command and Control systems resident at all echelons of command. Commanders will be provided with enhanced situational battlespace awareness and support warfighter battle management and continuity of operations in a contaminated environment.

The SSA provides for enterprise services in the areas of software development, network architecture, cybersecurity, technology transition, and information assurance standards and policies to support programs in conducting network architecture integration, technology transition insertion, and continued cybersecurity risk management framework efforts throughout the CBRND portfolio within the EMD/LRIP phase.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 1) Global Biosurveillance Portal (Global-BSP) ***Description:*** Product Development ***FY 2020 Plans:*** Finalize development of FVEY(Five Eyes - US/UK/Canada/Australia/New Zealand)/NATO role-based access capability. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	4.116	3.047	-
Title: 2) Global-BSP ***Description:*** Developmental Test and Evaluation ***FY 2020 Plans:*** Conduct Developmental and Operational T&E events on new FVEY and NATO role-based access capabilities, as well as conduct Final Operational Test in preparation for Full Operational Capability Fielding Decision. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	0.358	0.295	-
Title: 3) Global-BSP ***Description:*** Program Management Support ***FY 2020 Plans:*** Manage and conduct oversight of all aspects of Global-BSP program development and testing. Tasks include planning, budgeting, execution oversight, risk management, test and user feedback coordination, scheduling, training and administration. ***FY 2020 to FY 2021 Increase/Decrease Statement:***	0.793	0.466	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.			
Title: 4) Global-BSP ***Description:*** Operational Testing and Evaluation ***FY 2020 Plans:*** Conduct Final Operational Test & Evaluation (FOT&E) associated with Full Operational Capability. Conduct Operational Testing of Global-BSP with one Production Capability Drop End-to-End test to validate capabilities prior to delivery to the Warfighter. Support will consist of test, engineering, and operational personnel support. Conduct multiple User Feedback Events (UFEs). UFEs provide a crucial link between the Program Managers, Engineers, and Operators. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	0.928	0.655	-
Title: 5) Global-BSP ***Description:*** Training and Logistics Support ***FY 2020 Plans:*** Perform Training Development, Integrated Logistic Support, and Configuration Management. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	-	0.199	-
Title: 6) Chemical Biological Radiological and Nuclear Information Systems (CBRN IS) ***Description:*** Technical Guidance ***FY 2020 Plans:*** Provide the management and systems engineering for Integrated Early Warning, Decision Support/ Consequence and Incident Management, Data Analytics and other situational understanding and awareness tools. Ensure adherence to the Joint Operational Environment standards and Cyber Security requirements. Provide strategy for integration of future capabilities and emerging requirements including advanced technology demonstrations (ATDs) and experimental capability demonstrations (ECDs). ***FY 2020 to FY 2021 Increase/Decrease Statement:***	0.226	0.217	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.			
Title: 7) CBRN IS ***Description:*** Standardization ***FY 2020 Plans:*** Provide guidance and direction to ensure new capabilities meet industry and program standards for integration. Ensure development and integration efforts are compliant and compatible with the Joint Information Environment (JIE) and Service common operational and common computing environments. Comply with DoD and Service specified Cybersecurity and Net Ready Key Performance Parameters. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.	0.362	0.575	-
Title: 8) CBRN IS ***Description:*** Cybersecurity / Information Assurance ***FY 2020 Plans:*** Continue the implementation of ongoing cybersecurity requirements and policies and DoD information assurance vulnerability alerts (IAVAs) to mitigate system vulnerabilities. Continue adversarial and cooperative vulnerability testing. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.	0.210	0.203	-
Title: 9) CBRN IS ***Description:*** Product Development ***FY 2020 Plans:*** Continue to develop additional capabilities, applications and implementations to support the National Defense priorities for combating weapons of mass destruction. Continue to integrate CBRND products into a family-of-systems (FOS) framework. Continue to refine sensor connectivity prototype. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.	1.059	1.025	-
Title: 10) CBRN IS ***Description:*** Operational Assessments	0.620	0.480	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: Continue operational test and evaluations and user feedback events in accordance with product and application test plans to assess and validate capabilities prior to implementing in the production enterprise environment. Tests will assess accessibility, bandwidth/throughput, and reliability to meet program KPPs and KSAs. Continue cyber security and vulnerability testing. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.			
Title: 11) CBRN IS ***Description:*** Product Development, Operational Assessments, Management, Engineering, and Cybersecurity Support ***FY 2021 Plans:*** Continue operational test and user feedback events to assess and validate capabilities prior to implementing in the production environment. Continue operational test and evaluations in order to meet Key Performance Parameters (KPP) and Key System Attributes (KSA). Provide management and system engineering oversight and integration of future capabilities and emerging requirements including advanced technology demonstrations (ATDs) and experimental capability demonstrations (ECDs). Ensure development and integration efforts are compliant and compatible with the Joint Information Environment (JIE) and Service common operational and common computing environments. Continue the implementation of ongoing cybersecurity requirements and policies and DoD information assurance vulnerability alerts (IAVAs) to mitigate system vulnerabilities. Continue adversarial and cooperative vulnerability testing. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.	-	-	3.131
Title: 12) Joint Effects Model 2 (JEM 2) ***Description:*** Developmental Test and Evaluation ***FY 2020 Plans:*** Continue Government Development Test of software deliveries in preparation for Initial Operational Test & Evaluation (IOT&E) for development to C2 systems. Continue to perform VV&A of new hazard prediction models provided by the S&T community as defined in RDP-4. ***FY 2020 to FY 2021 Increase/Decrease Statement:***	0.150	0.420	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.			
Title: 13) JEM 2 ***Description:*** Product Development ***FY 2020 Plans:*** Continue development of JEM 2 software and perform integration into C2 systems. Integrate new hazard prediction models provided by the S&T community into the JEM 2 baseline software and develop/transition new S&T capabilities as defined in Requirements Definition Package RDP-4. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	1.530	1.443	-
Title: 14) JEM 2 ***Description:*** Program Management ***FY 2020 Plans:*** Continue to perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM 2. Continue development and execution of JEM 2 while working within the agile development process, to include performing a Joint Integrated Logistics Assessment (JILA) and Logistics Demonstration (LOG DEMO) in order to deploy JEM 2 to the services and to the Science and Technology Community. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	0.198	0.521	-
Title: 15) JEM 2 ***Description:*** Operational Test and Evaluation ***FY 2020 Plans:*** Develop operational test plans and conduct lab based OT and limited scope service specific IOT&E to support fielding decisions for the JEM 2 software which will allow for additional CDs with added JEM capabilities and functionality to be deployed to the services. ***FY 2020 to FY 2021 Increase/Decrease Statement:***	0.430	0.782	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.			
Title: 16) JEM 2 ***Description:*** Training and Logistics Support ***FY 2020 Plans:*** Perform Training Development, Integrated Logistics Support and Configuration Management for upgraded fielded capabilities. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	0.242	0.842	-
Title: 17) Joint Warning and Reporting Network 2 (JWARN 2) ***Description:*** Management Support ***FY 2020 Plans:*** Provide program/financial management, costing, contracting, scheduling, acquisition and deployment oversight for JWARN. Continue software development, integration, and deployment of JWARN capabilities in the milCloud CBRN IS enterprise environment and Services Command and Control systems. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	0.821	0.834	-
Title: 18) JWARN 2 ***Description:*** Product Development ***FY 2020 Plans:*** Continue JWARN 2 software development and perform integration into Command and Control and integration of CBRN sensor/ detector data/input with JWARN software baseline. Transition False Sensor Alert Reduction prototyping into JWARN software development. Continue Information Assurance Certification and accreditation to support cybersecurity deployment of JWARN 2 in the milCloud CBRN IS enterprise environment and Service Command and Control systems. Continue software development in preparation for Operational Test and Evaluation (OT&E) for USMC and Navy systems. ***FY 2020 to FY 2021 Increase/Decrease Statement:***	4.415	5.002	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.			
Title: 19) JWARN 2 ***Description:*** Developmental Test and Evaluation ***FY 2020 Plans:*** Continue Government development test and evaluation of software deliveries in preparation for annual Multiservice Operational Test and Evaluation (MOT&E) which will allow for Initial Operational Capability of JWARN 2 to be deployed to the services. Conduct development test and evaluation of JWARN 2 in preparation for OT&E for development to COE v3. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	0.300	0.567	-
Title: 20) JWARN 2 ***Description:*** Operational Test and Evaluation ***FY 2020 Plans:*** Conduct Multiservice Operational Test & Evaluation (MOT&E), which will allow for additional capability drops (CDs) with added JWARN capabilities and functionality to be deployed to the services. Conduct IOT&E of JWARN in preparation for deployment to Navy and Marine Corps C2 systems. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	0.625	0.850	-
Title: 21) JWARN 2 ***Description:*** Training and Logistics Support ***FY 2020 Plans:*** Provide New Equipment Training to operational users in US Army, Air Force, Navy, and Marine Corps in accordance with Services' Fielding and Training Plans, as JWARN approaches Full Operational Capability across all services. Continue to coordinate with operational forces for User Feedback Events, improving user interface and creating more efficient operational experience. ***FY 2020 to FY 2021 Increase/Decrease Statement:***	1.604	1.084	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.			
Title: 22) Software Support Activity (SSA) ***Description:*** Policies, Standards and Guidelines ***FY 2020 Plans:*** Provide standards, formats, templates, training and best practices to support practical compliance with laws, regulations, and policy for acquisition, certification, and sustainment of net-centric, interoperable, and spectrum dependent systems and devices. Help programs achieve a mandated net-centric environment by providing enabling tools for data management. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.	0.313	0.064	-
Title: 23) SSA ***Description:*** Integrated Architecture ***FY 2020 Plans:*** Continue to create, implement, validate, maintain, and continually shape a set of standard, enterprise-wide integrated CBRN Family of Systems architectures. Assists in development of acquisition program documents by providing early architecture products for inclusion and assists in the analysis and management of acquisition programs by producing architectural products that visualize system and program interdependencies, which help to expose gaps and requirements. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.	0.373	0.075	-
Title: 24) SSA ***Description:*** Enterprise Support and Services ***FY 2020 Plans:*** Provide technical expertise in managing information-related risks in enterprise architectures, acquisition strategies, testing and evaluation, and in achieving cybersecurity certification and accreditation. SSA cybersecurity SMEs assist with the development of cybersecurity strategies, project plans and required documentation. ***FY 2021 Plans:*** Support the CBRND enterprise through continuous engagement to assist with the development of acquisition products during the Engineering and Manufacturing Development and Low Rate Initial Production (EMD/LRIP) phase to reduce risk; assist with	0.257	0.221	2.888

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
technology transitions, and logistics; plan and execute new equipment training, and program management. Provide subject matter expertise in the areas of software development, network architecture, cybersecurity, technology transition, and information assurance standards and policies. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. In FY21, bullets with similar activities spanning multiple fiscal years were consolidated.			
Title: 25) SSA ***Description:*** Chemical, Biological, Radiological, Nuclear (CBRN) Data Model ***FY 2020 Plans:*** Assist programs and vendors in interpreting and implementing the CCSI standard. This XML-based specification enables standardized and repeatable integration and interoperability between CBRN sensors, network, and C2 systems. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.	0.323	0.446	-
Title: 26) SSA ***Description:*** Cybersecurity / Information Assurance ***FY 2020 Plans:*** Employ Information Systems Security Engineering (Cybersecurity) efforts to develop or modify the CS/IA component of a system architecture to ensure it is in compliance with the IA component of the Global Information Grid architecture, and makes maximum use of enterprise CS/IA capabilities and services. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.	0.743	0.442	-
Title: 27) SSA ***Description:*** Policy and Standards Repository ***FY 2020 Plans:***	0.578	0.127	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Provide standards, formats, templates, training and best practices to support practical compliance with laws, regulations, and policy for acquisition, certification, and sustainment of net-centric, interoperable, and spectrum dependent systems and devices. Help programs achieve a mandated net-centric environment by providing enabling tools for data management. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.			
Title: 28) SSA ***Description:*** Technology Transition Support ***FY 2020 Plans:*** Provide innovation, management and implementation of science and technology initiatives in support of CBRND systems across the enterprise to improve warfighter capability. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Bullets with similar activities spanning multiple fiscal years were consolidated.	0.419	0.284	-
Accomplishments/Planned Programs Subtotals	21.993	21.166	6.019

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• IS7: *Information Systems (Op Sys Dev)*	14.039	16.111	3.234	-	3.234	3.554	15.381	15.383	16.154	Continuing	Continuing
• G47101: *JOINT WARNING & REPORTING NETWORK (JWARN)*	0.502	0.442	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.944
• JC0208: *JOINT EFFECTS MODEL (JEM)*	0.911	0.689	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.600
• JS5230: *SOFTWARE SUPPORT ACTIVITY (SSA)*	0.094	0.081	0.074	-	0.074	0.070	1.187	1.187	1.247	Continuing	Continuing

Remarks

D. Acquisition Strategy

BIOSURVEILLANCE PORTAL (BSP)

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The Global-BSP program is using the SOFCIDS (Special Operations Capabilities Integration and Development System) requirements approach and the JROC's "IT Box" acquisition construct which allows fielding of operational capabilities while continued R&D matures technology required for follow-on versions. IT Box enables programs to tailor the incrementally fielded software program model in the DODI 5000.02 to conduct multiple iterative fielding events in lieu of a single fielding event, and field products to the warfighter utilizing an incremental delivery approach. The Global-BSP will achieve Full Operational Capability, complete resourced capabilities, and commence an orderly transition to sustainment in 2020. In FY21 and beyond, the Defense-Wide Review (DWR) reduced this program for higher priorities.

CBRN INFORMATION SYSTEMS

CBRN IS acquisition strategy 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.

JOINT EFFECTS MODEL (JEM)

The JEM 2 acquisition strategy utilizes Agile software development practices, employing the incrementally fielded software program model in the DODI 5000.02 to conduct multiple, more frequent fieldings in lieu of a single fielding event. As part of the strategy, an over-arching Milestone B and Build Decision for Requirements Definition Package 1 (RDP-1) were approved by the Milestone Decision Authority (MDA) in 4QFY14. Subsequent RDPs have been approved along with Capability Drops (CD) that define capability sets to be developed, tested, and fielded operationally. JEM will prioritize and complete resourced CD's for RDP 1 and 2 to transition into sustainment. In FY21 and beyond, the Defense-Wide Review (DWR) reduced this program for higher priorities.

JOINT WARNING & REPORTING NETWORK (JWARN)

JWARN 2 acquisition utilizes Agile software development practices, employing the incrementally fielded software program model in the DODI 5000.02 to conduct multiple, more frequent fieldings in lieu of a single fielding event. As part of the strategy, an over-arching MS B and Build Decision for Requirements Definition Package 1 (RDP-1) were approved by the Milestone Decision Authority (MDA) in 4QFY14. Subsequent RDPs have been approved along with Capability Drops (CD) that define capability sets to be developed, tested, and fielded operationally. JWARN will prioritize and complete resourced CD's for RDP 1 and 2 to transition into sustainment. In FY21 and beyond, the Defense-Wide Review (DWR) reduced this program for higher priorities.

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,

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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 CBRN capabilities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - SW S - software -Global-BSP software development	FFRDC	Johns Hopkins University - Applied Physics Lab : Laurel, MD	20.700	4.169	Dec 2018	2.797	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
CBRN IS - SW S - software - integration with BSP, JEM, JWARN	MIPR	Various : Various	1.878	1.059	Dec 2018	1.025	Dec 2019	1.339	Dec 2020	-		1.339	Continuing	Continuing	0.000
JEM - SW SB -2 - Hazard Prediction Model Development and Integration	C/CPAF	General Dynamics Information Technologies : Fairfax, VA	13.796	1.530	Jan 2019	1.964	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
JWARN - SW S - Product Dev, Various	Various	Various : Various	0.000	1.315	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JWARN - 2- SW S - Soft Dev Follow-On	C/CPAF	DCS Corps : Alexandria, VA	0.000	3.100	Dec 2018	5.002	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
SSA - SW S - CBRN Data Model	C/CPAF	Various : Various	8.253	0.781	Feb 2019	0.446	Feb 2020	0.778	Feb 2020	-		0.778	Continuing	Continuing	0.000
		Subtotal	44.627	11.954		11.234		2.117		-		2.117	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN IS - ES S - Support Costs - Cybersecurity and IA updates, architecture documentation	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	1.885	0.565	Dec 2018	0.672	Dec 2019	0.715	Dec 2020	-		0.715	Continuing	Continuing	0.000
JEM - ILS C - Training and Logistics Support	Various	Various : Various	0.000	0.242	Dec 2018	0.321	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
JWARN - ILS C - Training and Logistics Support	Various	Various : Various	0.000	1.604	Apr 2019	1.084	Apr 2020	0.000		-		0.000	Continuing	Continuing	0.000
SSA - ES S - Support Costs	MIPR	Space and Naval Warfare (SPAWAR)	9.604	2.105	Feb 2019	1.149	Feb 2020	2.000	Feb 2021	-		2.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program			Date: February 2020
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Systems Center : San Diego, CA													
		Subtotal	11.489	4.516		3.226		2.715		-		2.715	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - DTE S - Software	MIPR	Various : Various	3.225	0.636	Dec 2018	0.488	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
BSP - OTE S - Software - MOT&E	MIPR	Various : Various	3.744	0.597	Dec 2018	0.911	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
CBRN IS - OTE S - Operational Test - service-specific testing, joint test	MIPR	Various : Various	1.304	0.620	Dec 2018	0.675	Dec 2019	0.786	Dec 2020	-		0.786	Continuing	Continuing	0.000
JEM - Test & Evaluation	MIPR	Various : Various	3.653	0.580	Dec 2018	1.202	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
JWARN - 2- DTE S - Completed Development Test and Evaluation of JWARN 2 in support of JWARN 2 IOT&E	MIPR	Various : Various	1.505	0.300	Dec 2018	0.567	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
JWARN - 2 - OTE S - Multi-service Operational Test and Evaluation of JWARN 2 software	MIPR	Various : Various	3.074	0.625	Dec 2018	0.850	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	16.505	3.358		4.693		0.786		-		0.786	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - PM/MS S - Program Management	Various	Various : Various	2.920	0.793	Dec 2018	0.466	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN IS - PM/MS S - Program Management - Planning, Programming, and Budgeting	MIPR	Various : Various	0.549	0.233	Dec 2018	0.128	Dec 2019	0.291	Dec 2020	-		0.291	Continuing	Continuing	0.000
JEM - PM/MS S - Program Office - Planning and Programming	Various	Various : Various	8.722	0.198	Dec 2018	0.521	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
JWARN - 2- PM/MS C - Program Management Support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.030	0.821	Dec 2018	0.834	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
SSA - PM/MS S - Management Services	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	3.353	0.120	Dec 2018	0.064	Dec 2019	0.110	Dec 2020	-		0.110	Continuing	Continuing	0.000
		Subtotal	17.574	2.165		2.013		0.401		-		0.401	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	90.195	21.993		21.166		6.019		-		6.019	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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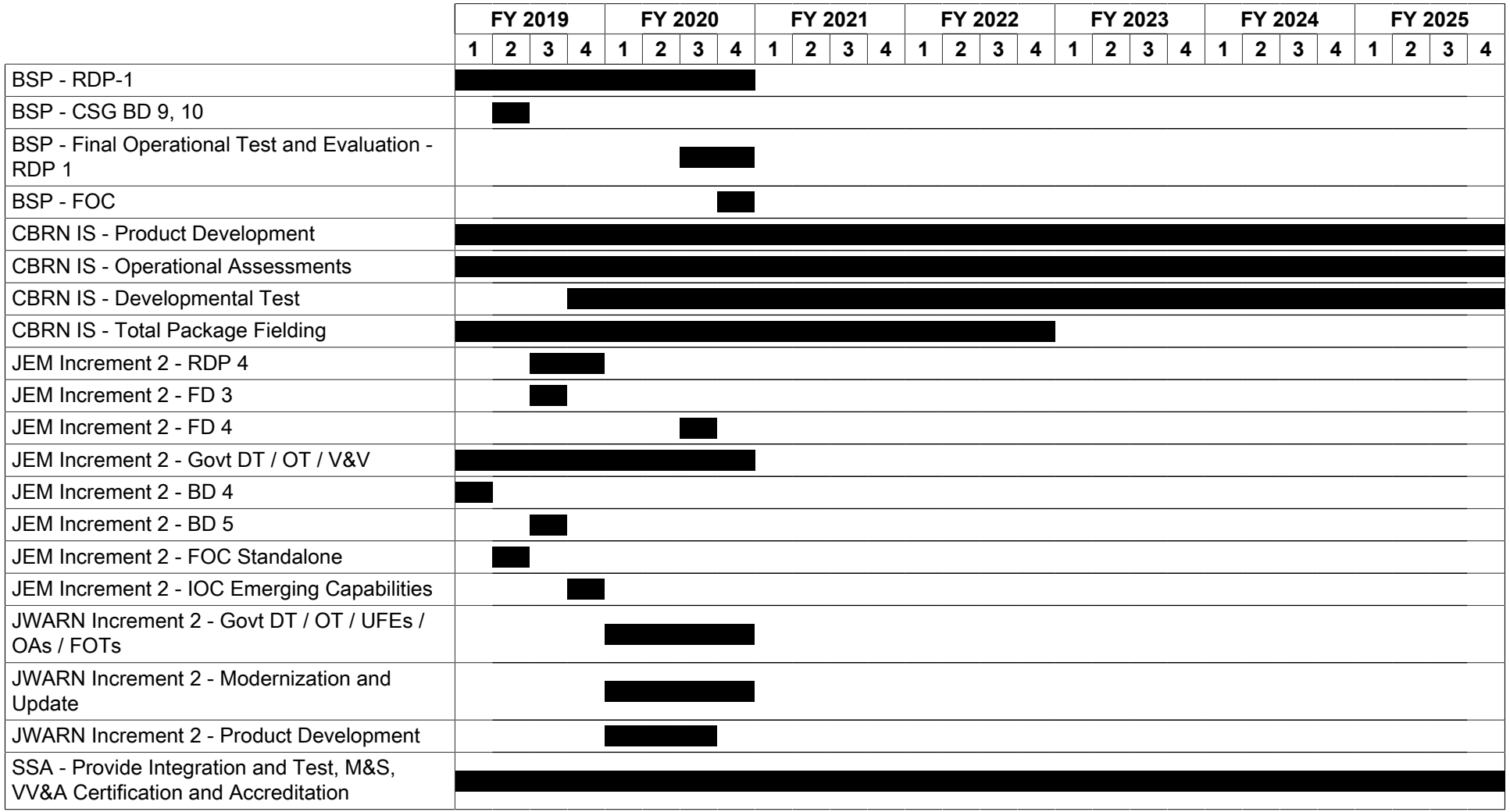

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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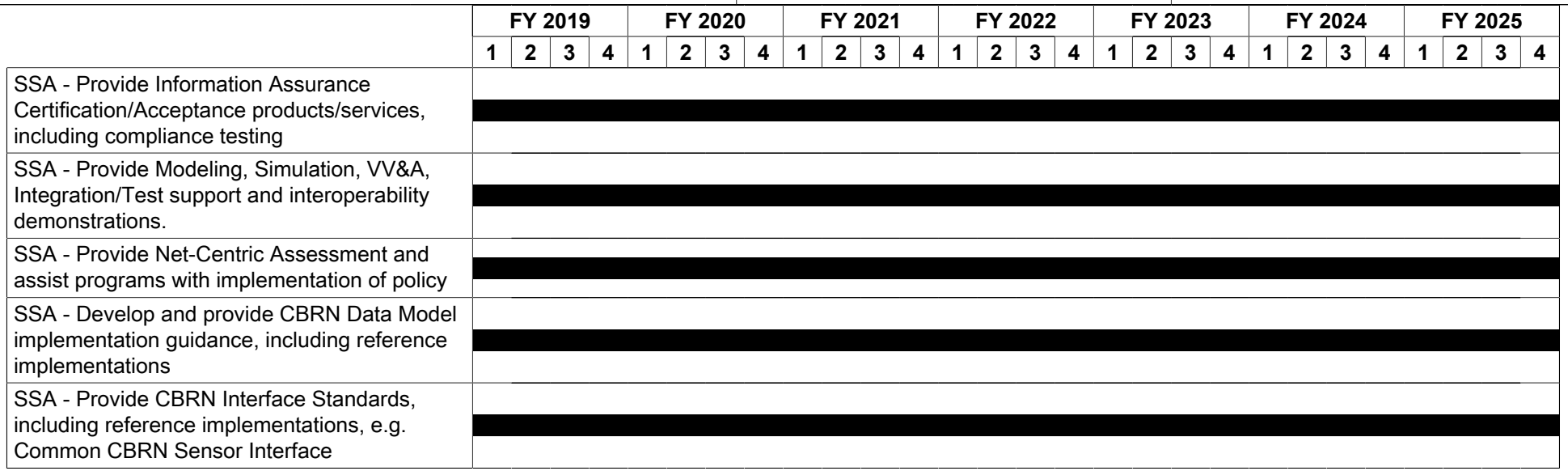

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
BSP - RDP-1	1	2019	4	2020
BSP - CSG BD 9, 10	2	2019	2	2019
BSP - Final Operational Test and Evaluation - RDP 1	3	2020	4	2020
BSP - FOC	4	2020	4	2020
CBRN IS - Product Development	1	2019	4	2025
CBRN IS - Operational Assessments	1	2019	4	2025
CBRN IS - Developmental Test	4	2019	4	2025
CBRN IS - Total Package Fielding	1	2019	4	2022
JEM Increment 2 - RDP 4	3	2019	4	2019
JEM Increment 2 - FD 3	3	2019	3	2019
JEM Increment 2 - FD 4	3	2020	3	2020
JEM Increment 2 - Govt DT / OT / V&V	1	2019	4	2020
JEM Increment 2 - BD 4	1	2019	1	2019
JEM Increment 2 - BD 5	3	2019	3	2019
JEM Increment 2 - FOC Standalone	2	2019	2	2019
JEM Increment 2 - IOC Emerging Capabilities	4	2019	4	2019
JWARN Increment 2 - Govt DT / OT / UFEs / OAs / FOTs	1	2020	4	2020
JWARN Increment 2 - Modernization and Update	1	2020	4	2020
JWARN Increment 2 - Product Development	1	2020	3	2020
SSA - Provide Integration and Test, M&S, VV&A Certification and Accreditation	1	2019	4	2025
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing	1	2019	4	2025

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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.	1	2019	4	2025
SSA - Provide Net-Centric Assessment and assist programs with implementation of policy	1	2019	4	2025
SSA - Develop and provide CBRN Data Model implementation guidance, including reference implementations	1	2019	4	2025
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface	1	2019	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program											Date: February 2020	
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COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
MB5: *Medical Biological Defense (SDD)*	-	127.933	130.074	86.460	-	86.460	56.868	45.226	68.593	83.282	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Engineering and Manufacturing Development and Low Rate Initial Production (EMD/LRIP) of medical countermeasures, development of reagents, assays, diagnostic equipment, biosurveillance and supporting efforts.

Efforts included in this project are:
(1) Botulinum Monoclonal Antibodies (BOT MAB)
(2) Chem Bio Incident Preparedness and Response - Advanced Development and Manufacturing (CBIPR - ADM)
(3) Countermeasures for Multi-Drug Resistance-Bacterial (CMDR-B)
(4) Medical Countermeasure Platform Technologies (MCMPT)
(5) Next Generation Diagnostic System 2 (NGDS 2)
(6) NGDS 2 Chemical Diagnostic (NGDS 2 CHEMDX)
(7) NGDS 2 Man Portable Diagnostic System (NGDS 2 MPDS)
(8) Defense Biological Products Assurance Program (DBPAP)
(9) Antiviral Therapeutics Program (AV TX)
(10) Joint Mobile Emerging Disease Intervention Clinical Capability (JMEDICC)
(11) Botulinum Vaccine (VAC BOT)
(12) Antiviral Prophylaxis Studies (Congressional Interest Item)
(13) Plague Vaccine (VAC PLG)
(14) Special Immunizations Program (VAC SIP)

Initiated by the Medical Countermeasure Platform Technologies (MCMPT), the goal of Botulinum Monoclonal Antibodies (BOT MAB) advanced development effort is to counter exposure to BOT A & B toxins. This capability is complementary to botulinum vaccine and therapeutics and will provide a continuum of protection against botulinum toxins. BoNT Advanced Development and Manufacturing of Antibody Technology (ADAMANT) leverages the advanced platform technology developed within the DoD's Advanced Development Manufacturing (ADM) facility. Efforts will focus on the evaluation of efficacy in pivotal animal studies to satisfy Food and Drug Administration (FDA) requirements for the animal rule, as well as the preparation for and execution of consistency lots to support phase 2/3 clinical trials. A Biologics License Application (BLA) will be submitted to the FDA including all clinical, non-clinical and manufacturing data. The FDA grants licensure to products that are determined to be safe and efficacious.

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The capability building effort at the DoD ADM will establish and enhance proven biopharmaceutical and vaccine manufacturing technologies to accelerate the delivery of medical countermeasures as part of a medical integrated layered defense. The return on investment is an increased level of preparedness and responsiveness to counter current and emerging chemical and biological threats. By establishing and enhancing proven enabling technologies, the DoD ADM will accelerate development of MCMs at all stages of development, enhance preparedness for existing threats, and accelerate response to emerging threats. MCMs impacted by these efforts include: Vaccines for Viral Agents, Vaccines for Bacterial Agents and Toxins, Monoclonal antibodies, antibody fragments, and antibody conjugates for therapeutic and prophylactic use across all agent classes, and Adjuvants. Funds to support the state of readiness were previously provided through individual product development and manufacturing funding lines.

The CMDR-B program develops medical countermeasures (MCMs) for Service members for protection against MDR bacteria, including Biological Warfare Agents (BWAs) and organisms that are genetically modified to be MDR and resulting bio-toxins. The resulting product(s) will be US Food and Drug Administration (FDA)-approved to prevent or minimize effects of MDR bacterial exposures. The candidate drug was approved by the FDA in Oct 18 for Community Acquired Bacterial Pneumonia (CABP) that was required as part of the acquisition strategy for the antibiotic repurposing program from S&T to advanced development.

MCMPT is establishing enabling technologies and pre positioning platform systems at the DoD's Advanced Development Manufacturing (ADM) facility using standardized discovery, design, manufacturing, and testing processes to reduce the medical countermeasure (MCM) development risks. Efforts will center on leveraging the ADM's facility and developing robust manufacturing processes. MCMPT will leverage platform technologies to streamline and accelerate the MCM delivery to the Force by reducing developmental risk. A subset of these technologies will be adapted to deliver a rapid response capability to novel and emerging threats. Through the Advanced Development and Manufacturing Antibody Technologies (ADAMANT) and Rapid Response platforms, MCMPT will deliver an enduring capability from which future candidates can be manufactured. The Agile Medical Paradigm (AMP) is the CBDP's strategic framework to accelerate the delivery of MCMs. To achieve this goal the DOD is establishing a medical countermeasures platform technology (MCMPT) capability.

The NGDS is a family of systems providing increments of diagnostic capabilities over time that address varied CBR threats across the different echelons of the Combat Health Support System. The mission of the NGDS is to provide CBR threat and infectious disease identification and FDA-cleared diagnostics to inform individual patient treatment and CBR situational awareness and disease surveillance. NGDS Increment 1 improves diagnostic capabilities in deployable and laboratory-based combat health support units. NGDS Increment 1 offers improved operational suitability and affordability over legacy systems by developing FDA cleared BWA and infectious disease IVD assays on an existing commercial diagnostic device with a well established FDA regulatory history and pipeline of commercial non-BWA infectious disease diagnostic tests. NGDS 2 will complement NGDS Increment 1 by developing diagnostics for unmet biological pathogen and toxin threats, chemical and radiological exposures, and to provide capability to lower echelons of care. NGDS 2 will provide additional capability for diagnosis of CBR-induced diseases, suitable for use in far forward environments, by developing lightweight, portable, and simple-to-use instruments and test kits. In FY21, NGDS 2 has been broken out into two separate programs; NGDS 2 MPDS Program and NGDS 2 CHEMDX Program. NGDS 2 MPDS will complement NGDS Increment 1 by providing a lightweight, portable, and simple-to-use diagnostic capability to end-users in non-laboratory, far-forward environments. NGDS 2 CHEMDX will provide a lightweight, portable, and simple-to-use diagnostic capability to end-users in non-laboratory, far-forward environments.

The DBPAP strategy establishes a core research and development capability by developing biological threat agent reference materials (strains, antigens, antibodies and nucleic acids) and detection/diagnostic assays for biothreat agent detection. These reagents/assays are leveraged across multiple programs to meet the requirements

of the Warfighter and Joint biological defense systems and support the biological defense community. Through the Targeted Acquisition of Reference Materials Augmenting Capabilities (TARMAC) initiative, the DBPAP will use a systematic approach to the introduction of new materials and information into MCM development. This includes advanced platform technologies within the DoD's ADM facility.

The AV TX will develop and deliver FDA approved antiviral therapeutics for the warfighter. Initial drug product will be developed targeting Ebola Virus Disease with Marburg and Sudan to follow for approval of a PanFilo therapeutic to the warfighter. Development of models to provide a therapeutic for alphavirus are being developed through JSTO Research & Development. Other pathogens on the biological warfare threat lists, including viruses of interest from Filoviridae, Arenaviridae, Bunyaviridae, and Flaviviridae, are targets of future interest. Developed antiviral therapeutics will be employed after suspected or confirmed exposure to the relevant threat agents and AV TX MCMs will ameliorate the effect of threat agents to the warfighter. In the event of a natural occurring outbreak, antiviral therapeutics can be provided to ensure freedom of operation.

The JMEDICC is a collaboration between United States and Ugandan research and outbreak response entities intended to enable clinical trials for filovirus (Ebola and Marburg) therapeutics during an outbreak. The JMEDICC effort provides a platform of advanced supportive care, scientific rigor, laboratory and logistical capacity, mobility, and rapid response to test new therapeutics or MCM in a filovirus outbreak setting. The JMEDICC effort is a project whose resulting capability offers a mechanism to greatly accelerate the development of life-saving products for future outbreaks. The performer received approval of an emergency access protocol for the use of the Remdesivir drug in the country of Uganda. JMEDICC effort was funded by the AV TX Program in FY19.

The DoD provides for the development of vaccines that are directed against validated biological warfare (BW) weapons to include bacteria, viruses, and toxins of biological origin. Effective medical countermeasures are urgently needed to negate the threat of these BW agents. Vaccines have been identified as the most efficient countermeasure against the validated threat of BW weapons. Products under development in this budget item include Recombinant Botulinum A/B and Plague vaccines. Efforts to be conducted during the Engineering Manufacturing Development (EMD) Phase include the development of large scale manufacturing process and validation of that process, nonclinical studies, demonstration of manufacturing consistency, and expanded clinical human safety studies. The results of these efforts, and those conducted during the EMD phase, will be used to submit a BLA to the FDA for product licensure. To evaluate vaccine effectiveness, pivotal animal studies will be conducted concurrently with the Phase 3 clinical trial to satisfy the requirements of the FDA's "Animal Rule". The Recombinant Botulinum A/B and Plague vaccine programs are no longer seeking FDA licensure.

IND vaccines will be used to provide additional levels of protection to laboratory workers in the SIP conducting research on these diseases. DoD has the mission to maintain Investigational New Drug (IND) vaccines in Good Manufacturing Practice (GMP) storage and to conduct the periodic potency and stability testing of these materials to support submissions to the FDA.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 1) Botulinum Monoclonal Antibodies (BOT MAB)	-	-	21.211
Description: Manufacturing			
FY 2021 Plans:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Initiate Botulinum monoclonal antibody platform development. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred from another funding line. Platform technology transitions from Medical Countermeasure Platform Technologies (MCMPT).			
Title: 2) Chem Bio Incident Preparedness and Response - Adv Dev Mfg (CBIPR - ADM) ***Description:*** ADM Infrastructure ***FY 2020 Plans:*** Continue activities to maintain the DoD ADM's capabilities in a state of readiness to support Medical Countermeasure (MCM) development and manufacturing. ***FY 2021 Plans:*** Continue activities to maintain the DoD ADM's capabilities in a state of readiness to support Medical Countermeasure (MCM) development and manufacturing. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	-	10.000	10.157
Title: 3) Countermeasures for Multi-Drug Resistance-Bacterial (CMDR-B) ***Description:*** Animal Efficacy Studies. ***FY 2020 Plans:*** Execute advanced development contract for mature drug products. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	-	8.385	-
Title: 4) Medical Countermeasure Platform Technologies (MCMPT) ***Description:*** Advanced Development and Manufacturing Antibody Technologies (ADAMANT) BOT A/B ***FY 2020 Plans:*** Complete establishment phase of the ADAMANT platform capability. ***FY 2020 to FY 2021 Increase/Decrease Statement:***	4.702	0.199	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Program/project funding transferred to another funding line. Platform technology transitions to BOT MAB.			
Title: 5) Next Generation Diagnostic System 2 (NGDS 2) ***Description:*** Man Portable Diagnostic System (MPDS) ***FY 2020 Plans:*** Continue Engineering & Manufacturing Development, conduct test activities and initiate clinical trials for MPDS. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred to another funding line. NGDS 2 MPDS funding was split out from the NGDS 2 funding line in FY21.	13.108	10.368	-
Title: 6) NGDS 2 ***Description:*** Chemical Diagnostic (CHEMDX) ***FY 2020 Plans:*** Begin Engineering & Manufacturing Development for the Chemical Diagnostic (CHEMDX). ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred to another funding line. NGDS 2 CHEMDX funding was split out from the NGDS 2 funding line in FY21.	-	2.697	-
Title: 7) NGDS 2 Chemical Diagnostic (NGDS 2 CHEMDX) ***Description:*** Chemical Diagnostic System (CHEMDX) ***FY 2021 Plans:*** Begin Engineering & Manufacturing Development for the Chemical Diagnostic System. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred from another funding line. Program/project funding transferred from NGDS 2.	-	-	2.089
Title: 8) NGDS 2 Man Portable Diagnostic System (NGDS 2 MPDS) ***Description:*** Man Portable Diagnostic System (MPDS) Product Development ***FY 2021 Plans:*** Conduct Hardware, software and assay development; system integration, and two clinical trials. ***FY 2020 to FY 2021 Increase/Decrease Statement:***	-	-	20.283

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Program/project funding transferred from another funding line. Program/project funding transferred from NGDS 2.			
Title: 9) NGDS 2 MPDS ***Description:*** Man Portable Diagnostic System (MPDS) Program Management and Support ***FY 2021 Plans:*** Conduct program management, developmental testing, and operational assessments. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred from another funding line. Program/project funding transferred from NGDS 2.	-	-	9.141
Title: 10) Defense Biological Products Assurance Program (DBPAP) ***Description:*** Development ***FY 2020 Plans:*** Continue development/expansion of biological threat agents reference materials to known and emerging threats. Continue development of assays and nucleic acid based genomic assays to support fielded and developmental systems. Continue QA/QC testing to encompass the transition and fielding of biological detection assays. Continue to maintain yearly accreditation audits such as ISO 9001, 17025, and Guide 34 certifications. Continue quality actions throughout to maintain the quality managed systems. Continue development of prototypes/information for strains contained in Unified Culture Collection. ***FY 2021 Plans:*** Continue development/expansion of biological threat agents reference materials to known and emerging threats. Continue development of assays and nucleic acid based genomic assays to support fielded and developmental systems. Continue QA/QC testing to encompass the transition and fielding of biological detection assays. Continue to maintain yearly accreditation audits such as ISO 9001, 17025, and Guide 34 certifications. Continue quality actions throughout to maintain the quality managed systems. Continue development of prototypes/information for strains contained in Unified Culture Collection. Supports establishment of a Common Reference Repository - a single source for well-characterized, traceable test articles and vital information for biological defense, effective verification of proficiency testing, improved acquisition of emerging technologies, all at a decreased cost for the individual organizations. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to accelerated development effort.	7.699	6.712	8.872
Title: 11) Antiviral Therapeutics Program (AV TX) ***Description:*** Enabling Technologies	7.447	7.095	11.831

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: Non-clinical: Continue efficacy studies with Non-Human Primates infected with Ebola virus. ***FY 2021 Plans:*** Complete efficacy studies with Non-Human Primates infected with Ebola virus. Start efficacy studies with Non-Human Primates infected with Marburg virus. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to accelerated development effort.			
Title: 12) AV TX - JMEDICC ***Description:*** Enabling Technologies	1.987	-	-
Title: 13) Joint Mobile Emerging Disease Intervention Clinical Capability (JMEDICC) ***Description:*** Enabling Technologies ***FY 2020 Plans:*** Continue & complete readiness activities for OCONUS clinical capabilities. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	-	3.398	-
Title: 14) VAC BOT - Recombinant Botulinum Vaccine ***Description:*** Manufacturing ***FY 2020 Plans:*** Activities to terminate pursuit of Food and Drug Administration (FDA) licensure. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	29.758	18.500	-
Title: 15) VAC BOT - Recombinant Botulinum Vaccine ***Description:*** Non Clinical and Clinical ***FY 2020 Plans:***	4.891	21.999	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Activities to terminate pursuit of FDA licensure. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.			
Title: 16) Cong #230 ***Description:*** Antiviral prophylaxis studies. ***FY 2020 Plans:*** Complete phase 3 clinical trials for extended period of safety. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Congressional Increase.	12.000	11.000	-
Title: 17) VAC PLG ***Description:*** Nonclinical and Clinical ***FY 2020 Plans:*** Activities to terminate pursuit of FDA licensure. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	26.008	17.149	-
Title: 18) VAC PLG ***Description:*** Manufacturing ***FY 2020 Plans:*** Activities to terminate pursuit of FDA licensure. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being terminated.	17.488	9.807	-
Title: 19) VAC SIP ***Description:*** Storage, Distribution, Potency Testing	2.845	2.765	2.876

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: Continue storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. ***FY 2021 Plans:*** Continue storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Accomplishments/Planned Programs Subtotals	127.933	130.074	86.460

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• MB7: *Medical Biological Defense (Op Sys Dev)*	8.602	3.231	2.308	-	2.308	2.012	2.305	5.975	9.188	Continuing	Continuing
• JM8788: *NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)*	6.563	4.905	0.970	-	0.970	0.000	0.000	0.000	0.000	0.000	12.438
• JX0005: *DOD BIOLOGICAL VACCINE PROCUREMENT (VACCINES)*	0.183	0.173	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.356
• JX0210: *DEFENSE BIOLOGICAL PRODUCTS ASSURANCE PROGRAM (DBPAP)*	0.975	2.961	2.845	-	2.845	2.760	2.736	2.736	2.736	Continuing	Continuing

Remarks

D. Acquisition Strategy

BOTULINUM MONOCLONAL ANTIBODIES (BOT MAB)

The goal of the BOT MABs advanced development effort is to counter exposure to BOT A & B toxins. A contract will be awarded to a prime performer responsible for executing efforts in the EMD phase to focus on the evaluation of efficacy in pivotal animal studies to satisfy FDA requirements for the animal rule, as well as the preparation for, and execution of, consistency lots to support phase 2/3 clinical trials. A Biologics License Application (BLA) will be submitted to the FDA including all non-clinical, clinical and manufacturing data. The FDA grants licensure to products that are determined to be safe and efficacious.

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CHEM BIO INCIDENT PREPAREDNESS AND RESPONSE - ADM

A contract was awarded to Ology Bioservices on 20 March 2013 (then Nanotherapeutics, Inc.) to establish a Department of Defense (DoD) ADM Facility to rapidly develop, approve (through FDA approval), and manufacture MCMs. The contract was structured to be executed in two (2) phases:

Phase 1-Establish, commission and validate (facility(ies)/ equipment) for two (2) advanced development and manufacturing suites that use agile, flexible (single use, disposable), modular and multi-product technologies for MCM advanced development and manufacturing. Both suites must meet Biological Safety Level-3 (BSL-3) standards. Phase 1 was completed on 31 March 2017.

Phase 2-Support and maintain that capability in a state of readiness to support MCM development (under the animal rule as applicable) and manufacturing and assist in training personnel in its use. This includes transition and integration of new technologies, from Pre-Investigational New Drug Application phase with readiness to support simultaneous operations, through FDA licensure. The first sustainment option (POP 2 years) was completed in 2QFY19; the subsequent sustainment option began thereafter and is scheduled for completion in 4QFY20, but can be extended until 2QFY21 if needed.

COUNTERMEASURES FOR DRUG RESISTANT BACTERIA (CMDR-B)

The CMDR-B program develops MCMs for Service members for protection against MDR bacteria, including Biological Warfare Agents (BWAs) and organisms that are genetically modified to be MDR and resulting bio-toxins. The resulting product(s) will be US Food and Drug Administration (FDA)-approved to prevent or minimize effects of MDR bacterial exposures. The candidate is a transitional product from S&T that showed efficacy against plague, anthrax, and other BW agents. The regulatory approach of the program is to pursue development of products to FDA approval under the Animal Rule. The program will conduct non-human primate studies to confirm efficacy. The performer will develop and submit an IFC package to FDA for emergency use to support the warfighter preparedness against MDR. The performer will submit Supplemental New Drug Application for the therapeutic during the EMD Phase. In FY18 PK study on non-human primates was completed for the plague indication and results were analyzed against threat indication. Continued coordination with FDA for supplemental indication of anthrax based on threat level to the warfighter. In FY21 and beyond, the Defense-Wide Review reduced this program for higher priorities.

MCM PLATFORM TECHNOLOGIES (MCMPT)

The goal of the MCMPT is to rapidly counter a broad-spectrum of threat agents using standardized discovery, design, manufacturing, and testing processes to reduce the MCM development risks. Efforts will focus on establishing advanced platform technologies within the DoD's Advanced Development Manufacturing (ADM) facility and evaluating that capability through nonclinical and clinical testing. A subset of these technologies will be adapted to deliver a rapid response capability to novel and emerging threats. Once established, future programs will be able to leverage these platforms for the development of future medical countermeasures. It is anticipated that these efforts will leverage the Other Transactions Authority (OTA) through the medical OTA consortium.

NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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The NGDS 1 program was a MS A to MS C - acquisition strategy, with MS C approval granted in Dec 2016 for limited production and fielding. NGDS 1 is replacing the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17. NGDS 1 Full Rate Production was approved in Aug 2018.

NGDS 2 will employ a family of systems approach to bridge identified capability gaps for man-portable diagnostics, immunoassay diagnostics, and chemical diagnostics systems. NGDS 2 continued the technology maturation and risk reduction of a man-portable diagnostic capability in FY18 and transitioned to engineering and manufacturing development phase in FY19. NGDS 2 initiated prototyping of a chemical diagnostic capability in FY18. Separate decisions will be utilized to proceed with further development and production for each capability, based on individual determinations of technology maturity to meet user requirements. Development efforts are cost-plus awards using Other Transactions Authority (OTA) agreements to take advantage of nontraditional Defense contractor offerings. NGDS 2 is broken out into NGDS 2 CHEMDx and NGDS 2 MPDS starting in FY21.

NEXT GEN DIAG 2 CHEMICAL DIAGNOSTICS (NGDS 2 CHEMDX)

NGDS Increment 2 will employ a family of systems approach to bridge identified capability gaps for man-portable diagnostics, immunoassay diagnostics, and chemical diagnostics systems. NGDS 2 CHEMDX will provide a lightweight, portable, and simple-to-use diagnostic capability against chemical threat agents to end-users in non-laboratory, far-forward environments. NGDS 2 CHEMDX initiated prototyping in FY18 and will conclude prototyping in FY21. NGDS 2 CHEMDX is using an Other Transactions Authority (OTA) agreement to take advantage of nontraditional Defense contractor offerings. NGDS 2 CHEMDX program is broken out from the NGDS Increment 2 program starting in FY21.

NEXT GEN DIAG 2 MAN PORTABLE DIAGNOSTIC SYSTEM (NGDS 2 MPDS)

NGDS Increment 2 will employ a family of systems approach to bridge identified capability gaps for man-portable diagnostics, immunoassay diagnostics, and chemical diagnostics systems. NGDS 2 Man Portable Diagnostic System (MPDS) will complement NGDS Increment 1 by providing a lightweight, portable, and simple-to-use diagnostic capability to end-users in non-laboratory, far-forward environments. NGDS 2 MPDS concluded prototyping in FY19 and is continuing with engineering and manufacturing development. MPDS is using Other Transactions Authority (OTA) agreements to take advantage of nontraditional Defense contractor offerings. The NGDS 2 MPDS program is broken out from the NGDS Increment 2 program starting in FY21.

DEFENSE BIOLOGICAL PRODUCTS ASSURANCE PROGRAM (DBPAP)

The Defense Biological Products Assurance Program's (DBPAP) strategy establishes a core research and development capability to develop biological threat agent reference materials (antigens, nucleic acids, and antibodies) as well as detection and diagnostic assays for biothreat agent detection that shall be used across multiple detection and diagnostic platforms. In addition, this strategy includes a formal, validated advanced development process for transitioning new assays into production and subsequent integration with the appropriate detection/diagnostic platform.

ANTI-VIRAL THERAPEUTICS (AV TX)

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The Anti-viral Therapeutics program acquisition strategy supports the development of multiple therapeutics through the Engineering, Manufacturing and Development (EMD) phase against the Ebola (Zaire), Marburg and Sudan bio warfare threats. The initial therapeutic candidate is for the Ebola Zaire that completed a Milestone B decision review in 2QFY19. The overall regulatory approach of the program remains to pursue development of products to FDA approval under the Animal Rule that was approved as the path, by the FDA in 1QFY19. The program completed a Natural History study as well as a dose ranging study that are part of the pivotal animal studies for FDA approval planned. There are 3 more pivotal animal studies for FDA approval. The acquisition strategy for Marburg and Sudan indications will have the performer submitting amended New Drug applications for the therapeutics during the Engineering, Manufacturing and Development (EMD) phase.

JOINT MOBILE EMERGING DISEASE INTERVENTION CLINICAL CAPABILITY (JMEDICC)

The Joint Mobile Emerging Disease Intervention Clinical Capability (JMEDICC) is a collaboration between United States and Ugandan research and outbreak response entities. It currently is a joint effort with The United States Army Medical Research Institute of Infectious Diseases (USAMRIID) and The Naval Medical Research Center (NMRC) to enable clinical trials for filovirus (i.e., Ebola and Marburg) therapeutics during an outbreak. JMEDICC effort was funded by the Antiviral Therapeutics (AV TX) Program (MB5) in FY19. A new funding line was added in FY20 to support this effort. The JMEDICC effort is currently focused on filovirus, but is an adaptable capability that can incorporate multiple different medical countermeasures (MCM) in parallel and accommodate multiple site activities. This will maximize JMEDICC's current response capability and infrastructure by expanding as the endemic situation warrants. A cost sharing plan is currently being explored with other government and nongovernment agencies to determine interest and relevance levels. In FY21 and beyond, the Defense-Wide Review reduced this program for higher priorities.

BOTULINUM VACCINE (VAC BOT)

The Prime System Contractor (Dynport Vaccine Company/DVC LLC, Frederick MD) will function as the FDA regulatory sponsor and will perform all ancillary, regulatory, quality assurance, and data management as required by the FDA. The current budget supports development through FDA licensure of a recombinant bivalent (A and B) botulinum vaccine. Other serotypes will be developed through an evolutionary approach, as funding becomes available. The Advanced Component Development and Prototypes (ACD&P) phase included the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine was evaluated for safety and immunogenicity in a small human clinical trial (Phase 1). During the Engineering Manufacturing Development (EMD) Phase, the prime contractor stabilized the vaccine formulation, validated the manufacturing process and testing protocols, optimized the delivery systems and manufactured consistency lots. Phase 2 clinical trials were performed and provided additional safety data. The evaluation of efficacy in pivotal animal studies to satisfy FDA requirements for the Animal Rule has been completed. The remaining efforts to be conducted during the EMD phase include the Phase 3 clinical trial to demonstrate safety in an expanded volunteer population. In FY21 and beyond, the Defense-Wide Review (DWR) reduced this program for higher priorities.

CONGRESSIONAL INTEREST ITEMS

CONGRESSIONAL INTEREST ITEM #230
Assay development and validation for monkeypox performed in FY19 that informs approval from the FDA for post-exposure prophylaxis (PEP) indication for smallpox. Antiviral prophylaxis studies are being performed. Contract awarded to performer to complete animal rule studies for FDA approval.

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PLAGUE VACCINE (VAC PLG)

The Advanced Component Development and Prototypes (ACD&P) phase included the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine was evaluated for safety and immunogenicity in a small human clinical trial (Phase 1). In order to reduce technical program risk in the Plague vaccine program, the program office conducted competitive prototyping between a US vaccine candidate and a United Kingdom vaccine candidate. During the 2008 Resource Allocation Decision, the US Plague Vaccine candidate was selected for development through licensure under a Prime System Contract. The Prime System Contractor (Dynport Vaccine Company/DVC LLC, Frederick MD) currently functions as the FDA regulatory sponsor and performs all ancillary, regulatory, quality assurance, and data management as required by the FDA. A Project Arrangement is in place with the United Kingdom and Canada. During the Engineering Manufacturing Development (EMD) Phase, the prime contractor stabilized the vaccine formulation, validated the manufacturing process and testing protocols, optimized the delivery systems and manufactured consistency lots. Phase 2 clinical trials were performed and provided additional safety data. The remaining efforts to be conducted during the EMD phase include the Phase 3 clinical trial to demonstrate safety in an expanded volunteer population and evaluation of efficacy and duration of protection in pivotal animal studies to satisfy FDA requirements for the Animal Rule. In FY21 and beyond, the Defense-Wide Review (DWR) reduced this program for higher priorities.

SPECIAL IMMUNIZATION PROGRAM (VAC SIP)

The SIP effort continually manages, updates, and executes the INDs of selected prophylaxis, treatments and diagnostics development products which provide additional protection to individuals that are at high risk of exposure to CBRN agents. Efforts span Good Manufacturing Practices (GMP), Good Laboratory Practices guidelines necessary to conduct storage and periodic potency testing, as well as clinical administration or products in accordance with the FDA regulated Investigational New Drug (IND) requirements. This Department of Defense program supports the Federal interagency with this effort, as well as academic and industry partners.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CMDR-B - Advanced Development Contract	C/CPIF	TBD : N/A	0.000	0.000		5.439	Oct 2019	0.000		-		0.000	Continuing	Continuing	0.000
MCMPT - HW S - ADAMANT BOT A/B establishment	C/CPFF	Ology : Alachua, FL	9.573	3.930	Jan 2019	0.175	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - HW C - Man Portable Diagnostic System	C/CPFF	Cepheid : Sunnyvale, CA	7.165	10.951	Nov 2018	6.662	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - HW C - Chemical Diagnostic (CHEMDX)	C/CPFF	MRIGlobal : Palm Bay, FL	0.000	0.000		1.076	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - HW C - Man Portable Diagnostic System #2	C/CPFF	MRIGlobal : Palm Bay, FL	10.679	0.500	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGDS 2 CHEMDX - HW C - Chemical Diagostic System (CHEMDX)	C/CPFF	MRIGlobal : Palm Bay, FL	0.000	0.000		0.000		0.774	Dec 2020	-		0.774	Continuing	Continuing	0.000
NGDS 2 CHEMDX - HW C - Develop and mature Assays for Chemical Agent Diagnostics	MIPR	US Army Medical Research Institute of Chemical Defense : Fort Detrick, MD	0.000	0.000		0.000		0.034	Dec 2020	-		0.034	Continuing	Continuing	0.000
NGDS 2 MPDS - HW C - Man Portable Diagnostic System (MPDS)	C/CPFF	Cepheid : Sunnyvale, CA	0.000	0.000		0.000		20.258	Dec 2020	-		20.258	Continuing	Continuing	0.000
DBPAP - HW C - Development of Select Biological Threat Agent Reference Materials and Assays	MIPR	Various : Various	1.826	1.662	Jun 2019	1.400	Mar 2020	1.873	Mar 2021	-		1.873	Continuing	Continuing	0.000
AV TX - Joint Mobile Emerging Disease Intervention OCONUS Clinical Capability (JMEDICC)	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.804	0.539	Jan 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AV TX - Joint Mobile Emerging Disease Intervention OCONUS Clinical Capability (JMEDICC) - OTA	C/FP	Henry M. Jackson Foundation for the Advancement of Military Medicine : Bethesda, MD	0.000	1.448	Jun 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
AV TX - Clinical Trials - OTA (Ebola)	C/FP	Gilead Sciences : San Francisco, CA	0.000	7.433	Jan 2019	4.946	Nov 2019	6.561	Nov 2020	-		6.561	Continuing	Continuing	0.000
JMEDICC - Clinical Trial Conduct Support	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.000	0.000		0.500	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
JMEDICC - OCONUS Clinical Capabilities - OTA	C/FP	Henry M. Jackson Foundation for the Advancement of Military Medicine : Bethesda, MD	0.000	0.000		2.115	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
VAC BOT - Manufacturing, Validation and Consistency Lot Production	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	71.218	26.684	Dec 2018	30.394	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
CONG - Clinical Trials - OTA	C/FP	SIGA Technologies : Inc., New York, NY	2.213	10.754	Jul 2019	9.857	Jul 2020	0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - HW S - Manufacturing, Validation, and Consistency Lot Production	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	30.671	26.181	Nov 2018	17.549	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - HW S - - Manufacturing Validation	MIPR	Battelle Memorial Institute : Columbus, OH	2.770	0.890	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	136.919	90.972		80.113		29.500		-		29.500	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBIPR-ADM - Infrastructure	C/CPFF	Ology : Alachua, FL	0.000	0.000		8.383	Dec 2019	9.225	Dec 2020	-		9.225	Continuing	Continuing	0.000
NGDS - ES C - Studies and WIPT Support	C/CPFF	John Hopkins University : Laurel, MD	0.000	0.145	Aug 2019	0.302	Oct 2019	0.000		-		0.000	Continuing	Continuing	0.000
DBPAP - ES C - Select Biological Threat Agent Reference Material Support	MIPR	Various : Various	1.620	1.920	Jun 2019	1.500	Mar 2020	1.911	Mar 2021	-		1.911	Continuing	Continuing	0.000
DBPAP - ES C - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	1.580	1.361	Jun 2019	1.482	Mar 2020	1.927	Mar 2021	-		1.927	Continuing	Continuing	0.000
VAC BOT - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	33.198	5.136	Dec 2018	1.310	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
VAC SIP - Storage and Distribution of Vaccines	SS/FP	Fisher BioServices : Rockville, MD	1.790	0.437	Feb 2019	0.453	Jan 2020	0.469	Jan 2021	-		0.469	Continuing	Continuing	0.000
		Subtotal	38.188	8.999		13.430		13.532		-		13.532	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BOT MAB - DTE C - BOT MONO	C/CPFF	TBD : N/A	0.000	0.000		0.000		15.132	Dec 2020	-		15.132	Continuing	Continuing	0.000
NGDS - OTHT C - Test and evaluate interagency	MIPR	Various : Various	0.360	0.020	Aug 2019	0.500	Oct 2019	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - DTE C - Virus Strain Production & Testing	MIPR	Various : Various	0.432	0.417	Nov 2018	0.500	Oct 2019	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS 2 CHEMDX - DTE S - Chemical Diagnostic (CHEMDX) Testing	MIPR	Various : Various	0.000	0.000		0.000		0.400	Dec 2020	-		0.400	Continuing	Continuing	0.000
NGDS 2 MPDS - OTHT S - BSL4 Testing	MIPR	Various : Various	0.000	0.000		0.000		0.365	Dec 2020	-		0.365	Continuing	Continuing	0.000
NGDS 2 MPDS - DTE S - MPDS SystemTest & Evaluation	MIPR	Various : Various	0.000	0.000		0.000		0.889	Dec 2020	-		0.889	Continuing	Continuing	0.000
VAC BOT - DTE C - Nonclinical Studies	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	81.485	1.000	Dec 2018	8.795	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
VAC BOT - DTE C - Battelle	Allot	Battelle Memorial Institute : Columbus, OH	0.900	1.480	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - DTE C - Clinical Trials/Non-Clinical Studies	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	91.814	3.920	Dec 2018	9.407	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
VAC SIP - OTHT C - Potency Testing of Vaccines	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	12.103	2.118	Dec 2018	2.170	Jan 2020	2.081	Jan 2021	-		2.081	Continuing	Continuing	0.000
		Subtotal	187.094	8.955		21.372		18.867		-		18.867	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BOT MAB - PM/MS C - BOT MONO	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	0.000	0.000		0.000		2.409	Dec 2020	-		2.409	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BOT MAB - PM/MS C - BOT MONO #2	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		1.468	Dec 2020	-		1.468	Continuing	Continuing	0.000
BOT MAB - PM/MS C - JPdM Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		2.202	Dec 2020	-		2.202	Continuing	Continuing	0.000
CBIPR-ADM - PM/MS C - Program Management Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.000	0.000		0.917	Dec 2019	0.932	Dec 2020	-		0.932	Continuing	Continuing	0.000
CBIPR-ADM - PM/MS C - Program Management Support #2	Various	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		0.700	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
CMDR-B - PM/MS SB - Program Management (Biological Therapeutics)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		1.055	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
CMDR-B - PM/MS S - Program Management (OPETS)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		1.891	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
MCMPT - PM/MS C - Program Management	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	0.000	0.273	Dec 2018	0.024	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
MCMPT - PM/MS C - ADMC Support	C/CPFF	Ology : Alachua, FL	0.000	0.499	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS - PM/MS C - Program Management (Dx) Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.230	Nov 2018	0.329	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - PM/MS S - Program Management (JPEO) Support	Various	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	8.885	0.000	Dec 2018	0.947	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - PM/MS S - Program Management (Dx) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	3.006	0.845	Nov 2018	1.887	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - PM/MS SB - Product Management Systems Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	3.436	0.000		0.862	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
NGDS 2 CHEMDX - PM/MS S - Program Management (JPM) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		0.186	Dec 2020	-		0.186	Continuing	Continuing	0.000
NGDS 2 CHEMDX - PM/MS S - Program Management (JPEO)	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	0.000	0.000		0.000		0.199	Dec 2020	-		0.199	Continuing	Continuing	0.000
NGDS 2 CHEMDX - PM/MS S - Program Management (CHEMDX)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		0.496	Dec 2020	-		0.496	Continuing	Continuing	0.000
NGDS 2 MPDS - PM/MS S - Program Management (JPM) Support	Various	JPM Medical Countermeasure Systems (JPM	0.000	0.000		0.000		2.061	Dec 2020	-		2.061	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		MCS) : Fort Detrick, MD													
NGDS 2 MPDS - PM/MS S - Program Management (JPEO)	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	0.000	0.000		0.000		2.700	Dec 2020	-		2.700	Continuing	Continuing	0.000
NGDS 2 MPDS - PM/MS S - Program Management (MPDS)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		1.121	Dec 2020	-		1.121	Continuing	Continuing	0.000
NGDS 2 MPDS - PM/MS S - Product Management Support	MIPR	Combat Capabilities Development Command (CCDC) Chemical Biological Center : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.486	Dec 2020	-		0.486	Continuing	Continuing	0.000
NGDS 2 MPDS - PM/MS S - Program Management (OPETS)	C/FFP	Various : Various	0.000	0.000		0.000		1.544	Dec 2020	-		1.544	Continuing	Continuing	0.000
DBPAP - PM/MS C - Product Management Contractor Support	SS/FFP	Various : Various	1.123	0.849	Feb 2019	0.860	Feb 2020	1.075	Feb 2021	-		1.075	Continuing	Continuing	0.000
DBPAP - PM/MS C - Product Management Support	Allot	JPM Guardian : Aberdeen Proving Ground, MD	2.621	1.907	Jan 2019	1.470	Jan 2020	2.086	Jan 2020	-		2.086	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Program Management (JPEO)	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	8.983	0.000		0.514	Jan 2020	0.974	Jan 2021	-		0.974	Continuing	Continuing	0.000
AV TX - PM/MS S - Program Management (OPETS)	C/FFP	Various : Various	0.000	0.000		0.000		2.035	Jan 2021	-		2.035	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AV TX - PM/MS - SB - Management Support (Biological Therapeutics)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	2.804	0.014	Dec 2018	0.468	Jan 2020	0.991	Jan 2021	-		0.991	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Management Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.304	0.000		0.395	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Management Support (JPM) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	3.438	0.000		0.772	Jan 2020	1.270	Jan 2021	-		1.270	Continuing	Continuing	0.000
JMEDICC - PM/MS SB - Program Management (Biological Therapeutics)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.224	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
JMEDICC - PM/MS S - Program Management (OPETS)	C/FFP	Various : Various	0.000	0.000		0.370	Feb 2020	0.000		-		0.000	Continuing	Continuing	0.000
JMEDICC - PM/MS SB - Program Management (JPM) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.189	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
VAC BOT - Program Management (JPM) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.349	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CONG - PM/MS SB - Program Management (Biological Therapeutics)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.220	Dec 2018	0.202	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
CONG - PM/MS S - Program Management (OPETS)	C/FFP	Various : Various	0.000	1.026	Nov 2018	0.941	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - Program Management (JPM) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	25.786	1.547	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - Program Management (JPEO) Support	Various	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	42.933	4.417	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - ADMC Sustainment	C/CPFF	Ology : Alachua, FL	1.800	6.541	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC SIP - PM/MS C - Program Management Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	2.746	0.290	Mar 2019	0.142	Mar 2020	0.326	Mar 2021	-		0.326	Continuing	Continuing	0.000
		Subtotal	107.865	19.007		15.159		24.561		-		24.561	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	470.066	127.933		130.074		86.460		-		86.460	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

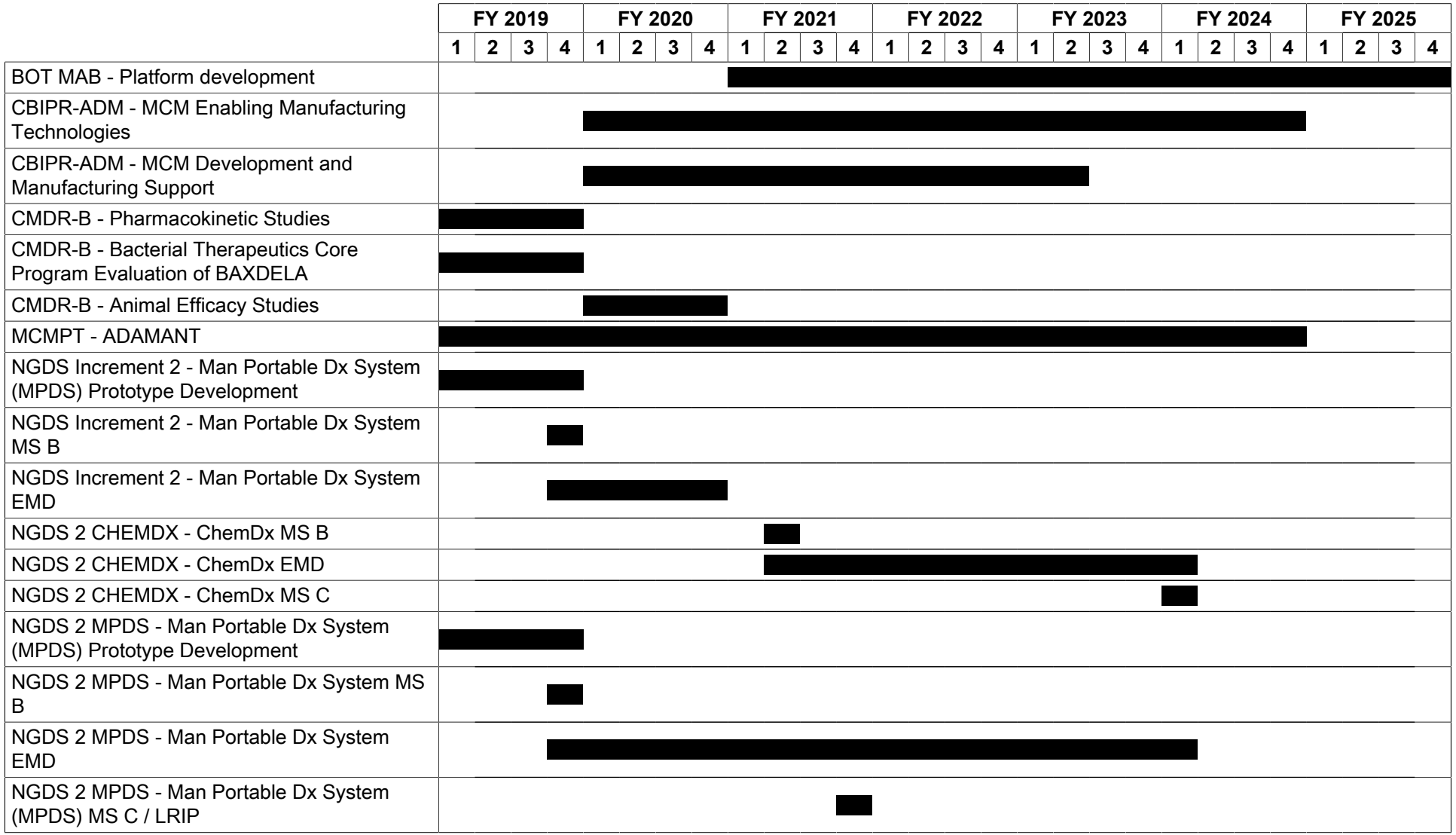

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

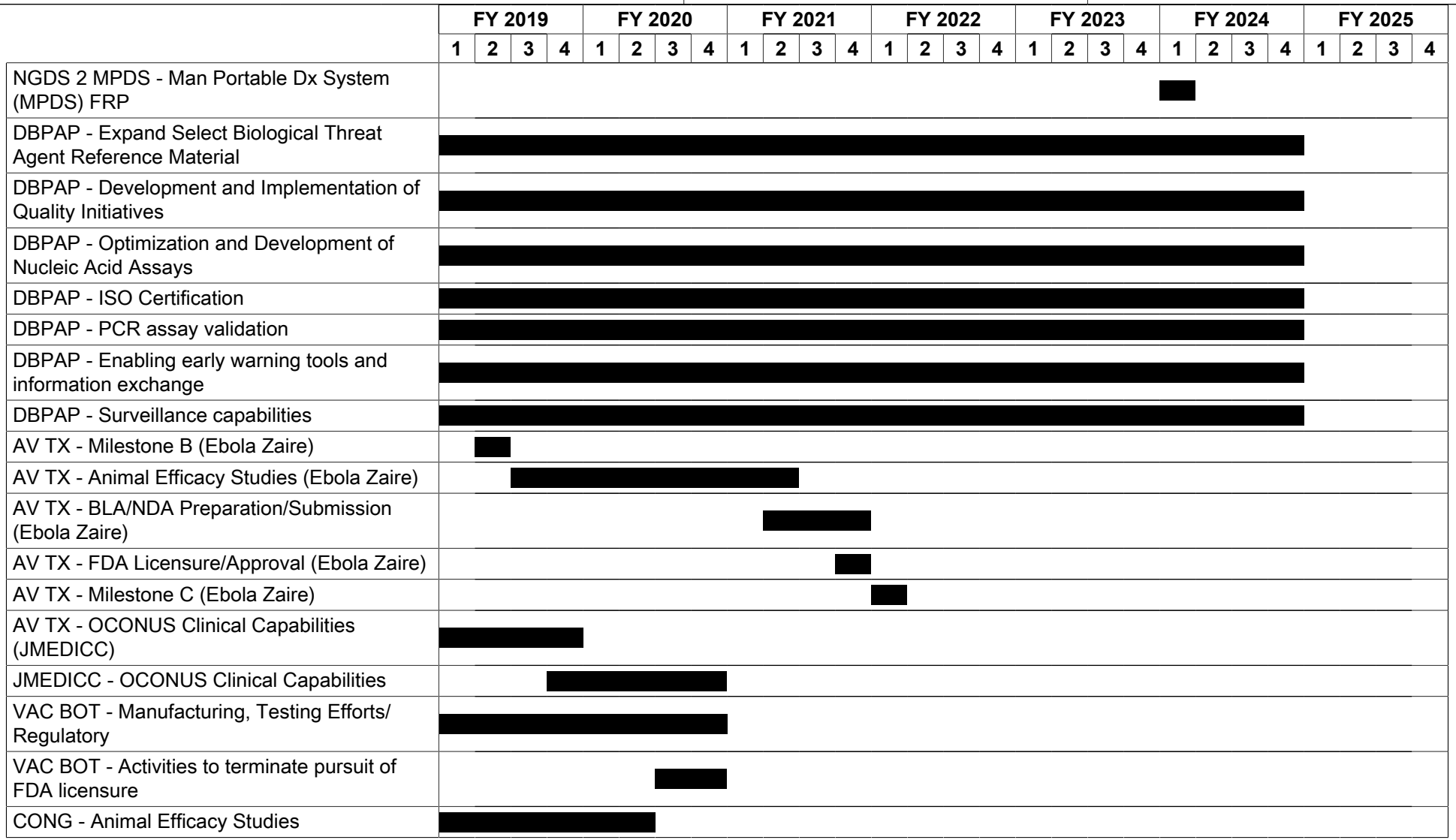

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

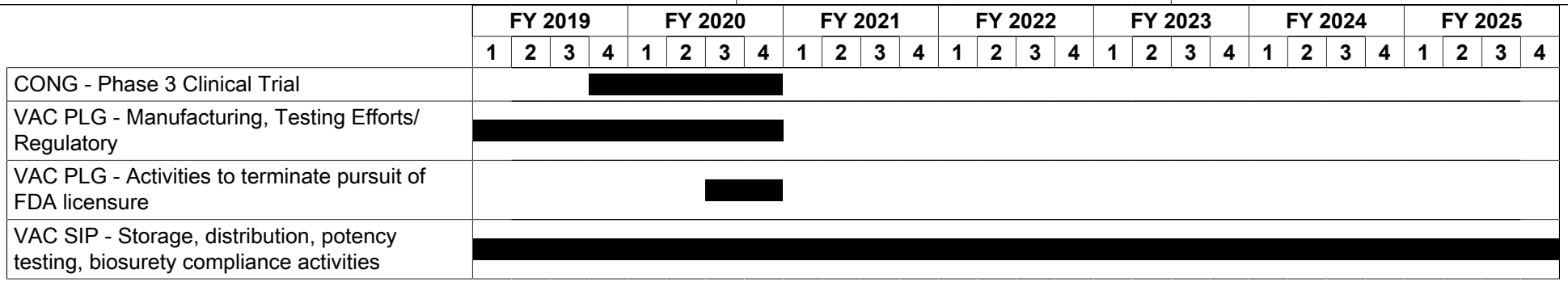

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
BOT MAB - Platform development	1	2021	4	2025
CBIPR-ADM - MCM Enabling Manufacturing Technologies	1	2020	4	2024
CBIPR-ADM - MCM Development and Manufacturing Support	1	2020	2	2023
CMDR-B - Pharmacokinetic Studies	1	2019	4	2019
CMDR-B - Bacterial Therapeutics Core Program Evaluation of BAXDELA	1	2019	4	2019
CMDR-B - Animal Efficacy Studies	1	2020	4	2020
MCMPT - ADAMANT	1	2019	4	2024
NGDS Increment 2 - Man Portable Dx System (MPDS) Prototype Development	1	2019	4	2019
NGDS Increment 2 - Man Portable Dx System MS B	4	2019	4	2019
NGDS Increment 2 - Man Portable Dx System EMD	4	2019	4	2020
NGDS 2 CHEMDX - ChemDx MS B	2	2021	2	2021
NGDS 2 CHEMDX - ChemDx EMD	2	2021	1	2024
NGDS 2 CHEMDX - ChemDx MS C	1	2024	1	2024
NGDS 2 MPDS - Man Portable Dx System (MPDS) Prototype Development	1	2019	4	2019
NGDS 2 MPDS - Man Portable Dx System MS B	4	2019	4	2019
NGDS 2 MPDS - Man Portable Dx System EMD	4	2019	1	2024
NGDS 2 MPDS - Man Portable Dx System (MPDS) MS C / LRIP	4	2021	4	2021
NGDS 2 MPDS - Man Portable Dx System (MPDS) FRP	1	2024	1	2024
DBPAP - Expand Select Biological Threat Agent Reference Material	1	2019	4	2024
DBPAP - Development and Implementation of Quality Initiatives	1	2019	4	2024
DBPAP - Optimization and Development of Nucleic Acid Assays	1	2019	4	2024
DBPAP - ISO Certification	1	2019	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *Medical Biological Defense (SDD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DBPAP - PCR assay validation	1	2019	4	2024
DBPAP - Enabling early warning tools and information exchange	1	2019	4	2024
DBPAP - Surveillance capabilities	1	2019	4	2024
AV TX - Milestone B (Ebola Zaire)	2	2019	2	2019
AV TX - Animal Efficacy Studies (Ebola Zaire)	3	2019	2	2021
AV TX - BLA/NDA Preparation/Submission (Ebola Zaire)	2	2021	4	2021
AV TX - FDA Licensure/Approval (Ebola Zaire)	4	2021	4	2021
AV TX - Milestone C (Ebola Zaire)	1	2022	1	2022
AV TX - OCONUS Clinical Capabilities (JMEDICC)	1	2019	4	2019
JMEDICC - OCONUS Clinical Capabilities	4	2019	4	2020
VAC BOT - Manufacturing, Testing Efforts/Regulatory	1	2019	4	2020
VAC BOT - Activities to terminate pursuit of FDA licensure	3	2020	4	2020
CONG - Animal Efficacy Studies	1	2019	2	2020
CONG - Phase 3 Clinical Trial	4	2019	4	2020
VAC PLG - Manufacturing, Testing Efforts/Regulatory	1	2019	4	2020
VAC PLG - Activities to terminate pursuit of FDA licensure	3	2020	4	2020
VAC SIP - Storage, distribution, potency testing, biosurety compliance activities	1	2019	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program											Date: February 2020	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*				Project (Number/Name) MC5 / *Medical Chemical Defense (SDD)*			
COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
MC5: *Medical Chemical Defense (SDD)*	-	43.648	60.220	54.392	-	54.392	52.813	31.441	15.215	15.019	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports efforts in the Engineering and Manufacturing Development (EMD) phase of the acquisition strategy for prophylactic, pre-treatment, and therapeutic drugs and diagnostic medical devices for the protection, treatment, detection, and medical management of chemical warfare agent exposures. This project provides for the research and development of safety studies, manufacturing scale-up, process validation, drug interaction, performance test, and submission of the Food and Drug Administration (FDA) drug licensure application(s).

Efforts included in this project are:
(1) Advanced Anticonvulsant System (AAS),
(2) Alternative Autoinjector Manufacturer Capability (AUTOINJ),
(3) Bioscavenger (BSCAV-P),
(4) Improved Nerve Agent Treatment System (INATS),
(5) Improved Nerve Agent Treatment System Centrally Acting (INATS CA), and
(6) Rapid Opioid Countermeasure System (ROCS)

AAS consists of Midazolam in an autoinjector for treatment of nerve agent induced seizures. Midazolam, injected intramuscularly, will treat traditional nerve agent and non-traditional agent-induced seizures and prevent subsequent neurological damage. Midazolam is more water-soluble than diazepam (the currently fielded medication to control nerve agent-induced seizures) and terminates nerve agent-induced seizures more quickly than diazepam. AAS will not eliminate the need for other protective and therapeutic systems.

AUTOINJ consists of investigating an FDA approved alternative source(s), beyond the single current Department of Defense (DoD) source, for autoinjectors that deliver DoD nerve agent antidote and treatment capabilities to the warfighter; mitigates capability fielding and operational readiness risks. This resulted from the manufacturing and quality issues for the fielded Antidote Treatment Nerve Agent Auto-injector (ATNAA) product, the oxime (2-PAM) and atropine in a dual chambered autoinjector. This program augments legacy autoinjectors, ATNAA, 2-PAM, and CANA by providing alternative commercial sources which include Dual Drug Delivery Device (D4), the atropine autoinjector, and anti-convulsant autoinjector.

BSCAV-P was intended to be a new capability for use as a prophylaxis against nerve agents. This program is pursuing closeout activities during FY19 and FY20.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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INATS Pre-Breakout advanced development in FY19 and FY20 provides an enhanced capability treatment regimen offering greater protection over a broader spectrum of toxic nerve agent threats. The development includes insertion of a CA anticholinergic agent to the treatment regimen to increase survivability and decrease morbidity. The INATS treatment regimen both improves the performance of, and eventually replaces the Antidote Treatment Nerve Agent Auto-injector (ATNAA).

INATS CA advanced development in FY21 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.

ROCS is specifically supporting the discovery, characterization, development, and fielding of FDA-approved therapeutic MCMs to protect the Joint Service warfighter against operational exposures to the opioid class of pharmaceutical-based agents (PBAs), a high priority. The first increment of the ROCS program will develop a naloxone autoinjector as a rescue treatment that will counteract the adverse effects from exposure to opioids.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 1) Advanced Anticonvulsant System (AAS) ***Description:*** New Drug Application (NDA) Resubmission Activities ***FY 2021 Plans:*** Continue NDA resubmission activities. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase due to fact of life change in the program/project. The Contractor will need to initiate and complete studies that comply with new Food and Drug Administration (FDA) requirements for manufacturing and quality for autoinjector products.	4.898	-	4.048
Title: 2) Alternative Autoinjector Manufacturer Capability (AUTOINJ) ***Description:*** Manufacturing ***FY 2020 Plans:*** Complete manufacturing of autoinjector consistency lots; initiate prototype tooling for dual chambered autoinjector; initiate manufacturing, validation for dual chamber auto-injector. ***FY 2021 Plans:*** Continue prototype tooling. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. No longer doing consistency lots in FY21.	1.000	4.800	2.500
Title: 3) AUTOINJ	-	-	1.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Description: Development ***FY 2021 Plans:*** Continue manufacturing and validation for dual drug chamber autoinjector. Initiate engineering lots for Dual Drug Delivery Device (D4). Initiate manufacturing lots for diazepam. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Title: 4) AUTOINJ ***Description:*** Testing ***FY 2020 Plans:*** Complete reliability, continue stability studies for atropine. Initiate functional testing for dual chamber auto injector. Continue prototype development of single autoinjector. ***FY 2021 Plans:*** Continue stability studies for atropine. Continue functional testing for dual chamber auto injector. Continue prototype development of single autoinjector. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease due to change in program/project technical parameters. No longer doing reliability studies in FY21.	8.194	17.000	9.300
Title: 5) AUTOINJ ***Description:*** FDA Coordination ***FY 2020 Plans:*** Continue FDA preparation, filing, and meetings for single and dual drug autoinjectors. ***FY 2021 Plans:*** Continue FDA preparation, filing, and meetings for single and dual drug autoinjectors. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	0.500	2.068	1.200
Title: 6) AUTOINJ ***Description:*** Clinical	1.000	1.000	0.931

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
FY 2020 Plans: Continue human factors and environmental testing for single and dual drug autoinjectors. ***FY 2021 Plans:*** Continue human factors and environmental testing for single and dual drug autoinjectors. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Title: 7) Bioscavenger (BSCAV-P) ***Description:*** Closeout ***FY 2020 Plans:*** Complete Program Close Out. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project terminated in FY 2020.	17.669	0.500	-
Title: 8) Improved Nerve Agent Treatment System (INATS) ***Description:*** Manufacturing & Non-Clinical & Clinical- Scopolamine ***FY 2020 Plans:*** Initiate clinical efforts and continue manufacturing and non-clinical. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred to another funding line. Transferring to INATS CA (MC5).	10.387	21.113	-
Title: 9) Improved Nerve Agent Treatment System Centrally Acting (INATS CA) ***Description:*** Manufacturing/Auto-Injector ***FY 2021 Plans:*** Continue Auto-Injector Development and Manufacturing Activities ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred from another funding line. INATS-CA was created from the INATS funding line.	-	-	7.100
Title: 10) INATS - CA	-	-	19.896

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Description: Non-Clinical ***FY 2021 Plans:*** Initiate Non-Clinical Animal Studies ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Program/project funding transferred from another funding line. INATS-CA was created from the INATS funding line.			
Title: 11) Rapid Opioid Countermeasure System (ROCS) ***Description:*** Development ***FY 2020 Plans:*** Initiate & complete naloxone formulation studies. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Study will complete in FY20.	-	2.304	-
Title: 12) Rapid Opioid Countermeasure System (ROCS) ***Description:*** Manufacturing ***FY 2020 Plans:*** Initiate manufacturing activities. ***FY 2021 Plans:*** Continue manufacturing activities. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments. Expecting manufacturing to ramp down in FY21.	-	6.166	4.800
Title: 13) Rapid Opioid Countermeasure System (ROCS) ***Description:*** Clinical Studies ***FY 2020 Plans:*** Initiate Phase 1 human clinical studies. ***FY 2021 Plans:***	-	5.269	3.617

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Complete Phase 1 human clinical studies.			
FY 2020 to FY 2021 Increase/Decrease Statement: Minor change due to routine program adjustments. Data Analysis & Reports require less funding.			
Accomplishments/Planned Programs Subtotals	43.648	60.220	54.392

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• JM6677: *ADVANCED ANTICONVULSANT SYSTEM (AAS)*	0.000	3.152	0.000	-	0.000	4.885	8.052	7.862	1.394	Continuing	Continuing

Remarks

D. Acquisition Strategy

ADVANCED ANTICONVULSANT SYSTEM (AAS)

The Advanced Anticonvulsant System (AAS), consists of Midazolam in an autoinjector for treatment of seizures, to include those caused by nerve agent. A contractor shall be responsible for conducting activities associated with drug development in a manner consistent with eventual approval by the Food and Drug Administration (FDA). The contractor shall sponsor the drug to the FDA and hold all approvals and/or licenses. The Contractor will need to initiate and complete studies that comply with new FDA requirements for manufacturing and quality for autoinjector products, ultimately leading to FDA approval. Upon FDA approval, sufficient quantities of product to meet Initial Operational Capability (IOC) and Full Operational Capability (FOC) will be purchased. Subsequent purchases for product sustainment will be made by the Defense Logistics Agency. Post marketing commitments and requirements are anticipated as a result of the FDA approval and will be the responsibility of the contractor and the government

ALTERNATE AUTOINJECTOR MANUFACTURER CAPABILITY (AUTOINJ)

The Alternative Autoinjector Manufacturer Capability (AUTOINJ) will identify an alternative source(s) to develop and provide required FDA-approved autoinjector-delivered nerve agent antidote and treatment capabilities to the DoD. Currently, a single DoD source provides all of these capabilities.

The AUTOINJ effort leverages novel technologies and industrial base expansion in order to develop the autoinjector products. AUTOINJ uses contracts and Other Transactional Agreements (OTAs) in which the performer shall be responsible for conducting development and testing activities consistent with current Food and Drug Administration (FDA) regulations. The contractor shall sponsor the drug to the FDA and hold all approvals and/or licenses. Upon FDA approval, purchases for product sustainment will be made by the Defense Logistics Agency.

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AUTOINJ (MC7) Post marketing commitments and requirements are anticipated as a result of the FDA approval and will be the responsibility of the contractor and the government.

BIOSCAVENGER (BSCAV)

The Bioscavenger program employed a serial evaluation of candidates to achieve competitive prototyping in the Technology Maturation and Risk Reduction (TM&RR) phase, culminating in a down-select decision. The Bioscavenger program then issued a Request for Proposal (RFP) to select the best value for the government for a prophylaxis to support an initial limited user group. During the Engineering and Manufacturing Development (EMD) phase, the program continued to meet its performance objectives and produced a current Good Manufacturing Practice (cGMP) drug product for use in further development.

The program will end activities in FY20. In FY19, the program initiated termination of acquisition activities and program close out, will be completed in FY20. The program will continue to work with the Joint Science & Technology Office in their efforts to advance potential candidates and will monitor Health and Human Service programs, international programs, and the commercial sector for potential materiel solutions for this capability gap.

IMPROVED NERVE AGENT TREATMENT SYSTEM (INATS)

The INATS (MC4) program concludes as INATS in FY19.

In the Technology Maturation and Risk Reduction (TM&RR) phase, close collaborations will occur with the science/ technology, and user communities to assess technical viability, capability delivery options, and to refine operational concepts; the Government will be the systems integrator overseeing the conduct of centrally acting formulation development efforts, nonclinical toxicology and efficacy studies and clinical safety studies. In the Engineering and Manufacturing Development (EMD) phase, the Government will engage with commercial partner(s) to ensure that INATS CA development and manufacture is in accordance with Food and Drug Administration (FDA) regulations. In FY21 and beyond, the Defense-Wide Review (DWR) reduced this program for higher priorities, resulting in only the INATS CA component being pursued.

The INATS (MC7) line initiates in FY20 and transitions to INATS CA (MC7) in FY21. INATS (MC7) will support the modernization of Soman Nerve Agent Pretreatment Pyridostigmine (SNAPP) using contract actions to extend operational shelf-life and generate data to expand storage temperature conditions.

IMPROVED NERVE AGENT TREATMENT CENTRALLY ACTING (INATS CA)

(MC5) In the Technology Maturation and Risk Reduction (TM&RR) phase, close collaborations will occur with the science/ technology, and user communities to assess technical viability, capability delivery options, and to refine operational concepts; the Government will be the systems integrator overseeing the conduct of centrally acting formulation development efforts, nonclinical toxicology and efficacy studies and clinical safety studies. In the Engineering and Manufacturing Development (EMD)

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phase, the Government will engage with commercial partner(s) to ensure that development and manufacture is in accordance with Food and Drug Administration (FDA) regulations.

RAPID OPIOID COUNTERMEASURE SYSTEM (ROCS)

Rapid Opioid Countermeasure System (ROCS) is a Joint ACAT III Medical Countermeasure (MCM) Middle Tier acquisition Program of Record (POR) in the Prototype Phase of development. The ROCS program will use existing naloxone autoinjector capabilities identified from focused Market Research. ROCS is a Middle Tier acquisition program. The development of the autoinjector will be conducted under Other Transaction Authority (OTA) agreement. Once FDA approval has been granted the program will transition from Rapid Prototyping to Rapid Fielding or a traditional production and fielding pathway.

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AAS - SW S - NDA Resubmission Activities	C/CPIF	Meridian Medical Technologies Inc. : Columbia, MD	1.630	3.262	Jan 2019	0.000		3.555	Nov 2020	-		3.555	Continuing	Continuing	0.000
AUTOINJ - HW S - Device Inovation	C/FFP	Various : Various	0.000	0.142	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
AUTOINJ - HW C - Regulatory Support	C/CPFF	Ology : Alachua, FL	0.000	0.697	Mar 2019	0.000		0.200	Nov 2020	-		0.200	Continuing	Continuing	0.000
AUTOINJ - HW S - Diazepam Autoinjector	C/CPFF	Emergent Biosolutions : Gaithersburg/ Rockville, MD	0.000	0.301	Aug 2019	0.000		3.800	Nov 2020	-		3.800	Continuing	Continuing	0.000
AUTOINJ - HW S - Dual Drug Delivery Device (D4) Prototype Development	C/CPFF	Emergent Biosolutions : Gaithersburg/ Rockville, MD	9.198	4.910	Nov 2018	10.202	Nov 2019	3.987	Nov 2020	-		3.987	Continuing	Continuing	0.000
AUTOINJ - HW S - Autoinjector - Manufacturing of Consistency Lots	C/CPFF	Battelle Memorial Institute : Columbus, OH	3.498	0.523	Dec 2018	8.000	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - HW S - cGMP Manufacturing and Process Validation	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	46.682	9.015	Jan 2019	0.500	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
INATS - HW C - Large-Scale Manufacturing	C/CPFF	TBD : N/A	0.000	0.000		3.494	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
INATS - HW C - Animal Efficacy Studies	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.795	Nov 2018	2.888	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
INATS - HW C - Centrally-Acting AutoInjector Efforts	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		7.639	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
INATS - HW C - Pilot Scale Development of Drug Product	C/CPFF	Battelle Memorial Institute : Columbus, OH	2.842	0.250	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INATS - HW C - Scopolamine cGMP Efforts and Manufacture of Material	C/CPFF	Various : Various	9.343	2.657	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
INATS - HW C - Reformulation Efforts & Bridging Studies	C/CPFF	Various : Various	4.972	0.225	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
INATS CA - HW C - Manufacturing	C/CPFF	TBD : N/A	0.000	0.000		0.000		7.100	Dec 2020	-		7.100	Continuing	Continuing	0.000
INATS CA - HW C - Non-Clinical	C/CPFF	TBD : N/A	0.000	0.000		0.000		13.650	Nov 2020	-		13.650	Continuing	Continuing	0.000
ROCS - 1. Initiate naloxone formulation studies	C/CPFF	kaleo : Richmond, VA	0.000	0.000		1.860	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
ROCS - 2. Initiate development of autoinjector and large scale manufacturing process	C/CPFF	kaleo : Richmond, VA	0.000	0.000		4.979	Feb 2020	3.000	Dec 2020	-		3.000	Continuing	Continuing	0.000
ROCS - 3. Initiate Human Clinical Studies	C/CPFF	kaleo : Richmond, VA	0.000	0.000		4.255	Aug 2020	2.560	Dec 2020	-		2.560	Continuing	Continuing	0.000
		Subtotal	78.165	22.777		43.817		37.852		-		37.852	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AAS - ES C - Office of Regulated Activities Support (ORA)	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	0.000	0.045	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSCAV-P - ES C - Office of Regulated Activities Support (ORA)	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	0.000	0.218	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
INATS - ILS S - Regulatory Support	C/CPFF	Battelle Memorial Institute : Columbus, OH	1.010	0.923	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
INATS - ES C - Office of Regulated Activities Support - (ORA)	MIPR	US Army Medical Research Material Command (USAMRMC) : Fort Detrick, MD	0.000	0.645	Nov 2018	0.713	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	1.010	1.831		0.713		0.000		-		0.000	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AUTOINJ - DTE C - Autoinjector Testing	MIPR	US Army Medical Research Material Command (USAMRMC) : Fort Detrick, MD	0.000	0.050	Apr 2019	0.000		0.278	Nov 2020	-		0.278	Continuing	Continuing	0.000
INATS - DTE S - Centrally Acting Phase 2 Trial	C/CPFF	Various : Various	2.240	0.000		2.140	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	2.240	0.050		2.140		0.278		-		0.278	Continuing	Continuing	N/A

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AAS - Program Management (MCS) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.727	0.853	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
AAS - Program Management (CDP)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.727	0.190	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
AAS - Program Management (OPETS)	C/FFP	Various : Various	0.000	0.548	Nov 2018	0.000		0.185	Nov 2020	-		0.185	Continuing	Continuing	0.000
AAS - Program Management (JPEO)	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	0.370	0.000		0.000		0.308	Nov 2020	-		0.308	Continuing	Continuing	0.000
AUTOINJ - ADMc Sustainment	C/CPFF	Ology : Alachua, FL	3.661	2.221	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
AUTOINJ - Program Management (JPEO)	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	1.277	1.211	Dec 2018	2.823	Dec 2019	2.823	Dec 2020	-		2.823	Continuing	Continuing	0.000
AUTOINJ - Program Management (MCS) Support	PO	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.594	0.000		1.741	Nov 2019	1.741	Nov 2020	-		1.741	Continuing	Continuing	0.000
AUTOINJ - Program Management (OPETS)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.639	Dec 2018	1.598	Nov 2019	1.598	Nov 2020	-		1.598	Continuing	Continuing	0.000
AUTOINJ - Program Management (CDP)	Various	JPM Medical Countermeasure Systems (JPM	0.000	0.000		0.504	Nov 2019	0.504	Nov 2020	-		0.504	Continuing	Continuing	0.000

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		MCS) : Fort Detrick, MD													
BSCAV-P - Program Management (CDP)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.655	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - Program Management (MCS) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	6.974	3.966	Mar 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - ADMc Sustainment	PO	Ology : Alachua, FL	3.080	0.300	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - Product Management (OPETS)	C/FFP	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	6.989	1.237	Jun 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - Product Management Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	1.876	0.242	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - Program Management (JPEO)	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	9.001	2.036	Mar 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
INATS - Product Managment Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.078	Nov 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
INATS - Product Management (MCS) Support	Various	JPM Medical Countermeasure Systems (JPM	6.263	2.777	Dec 2018	2.576	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		MCS) : Fort Detrick, MD													
INATS - Program Management (JPEO)	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	2.970	2.037	Dec 2018	1.663	Mar 2020	0.000		-		0.000	Continuing	Continuing	0.000
INATS CA - Program Management (JPEO)	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	0.000	0.000		0.000		2.604	Dec 2020	-		2.604	Continuing	Continuing	0.000
INATS CA - Program Management (MCS) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		1.606	Dec 2020	-		1.606	Continuing	Continuing	0.000
INATS CA - Program Management (CDP)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		0.549	Dec 2020	-		0.549	Continuing	Continuing	0.000
INATS CA - Program Management (OPETS)	C/FFP	Various : Various	0.000	0.000		0.000		1.487	Dec 2020	-		1.487	Continuing	Continuing	0.000
ROCS - Program Management (Chem Defense Pharm)	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		0.175	Dec 2020	-		0.175	Continuing	Continuing	0.000
ROCS - Program Management (OPETS)	C/FFP	Various : Various	0.000	0.000		0.000		0.161	Dec 2020	-		0.161	Continuing	Continuing	0.000
ROCS - Program Management (JPEO)	Various	JPEO Chem : Bio, Rad, and Nuc Defense (JPEO-CBRND)	0.000	0.000		0.996	Nov 2019	1.559	Dec 2020	-		1.559	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *Medical Chemical Defense (SDD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ROCS - Program Management (MCS) Support	Various	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.907	Nov 2019	0.962	Dec 2020	-		0.962	Continuing	Continuing	0.000
ROCS - ADMc Sustainment	C/CPFF	Ology : Alachua, FL	0.000	0.000		0.742	Nov 2019	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	46.509	18.990		13.550		16.262		-		16.262	Continuing	Continuing	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	127.924	43.648		60.220		54.392		-		54.392	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *Medical Chemical Defense (SDD)*

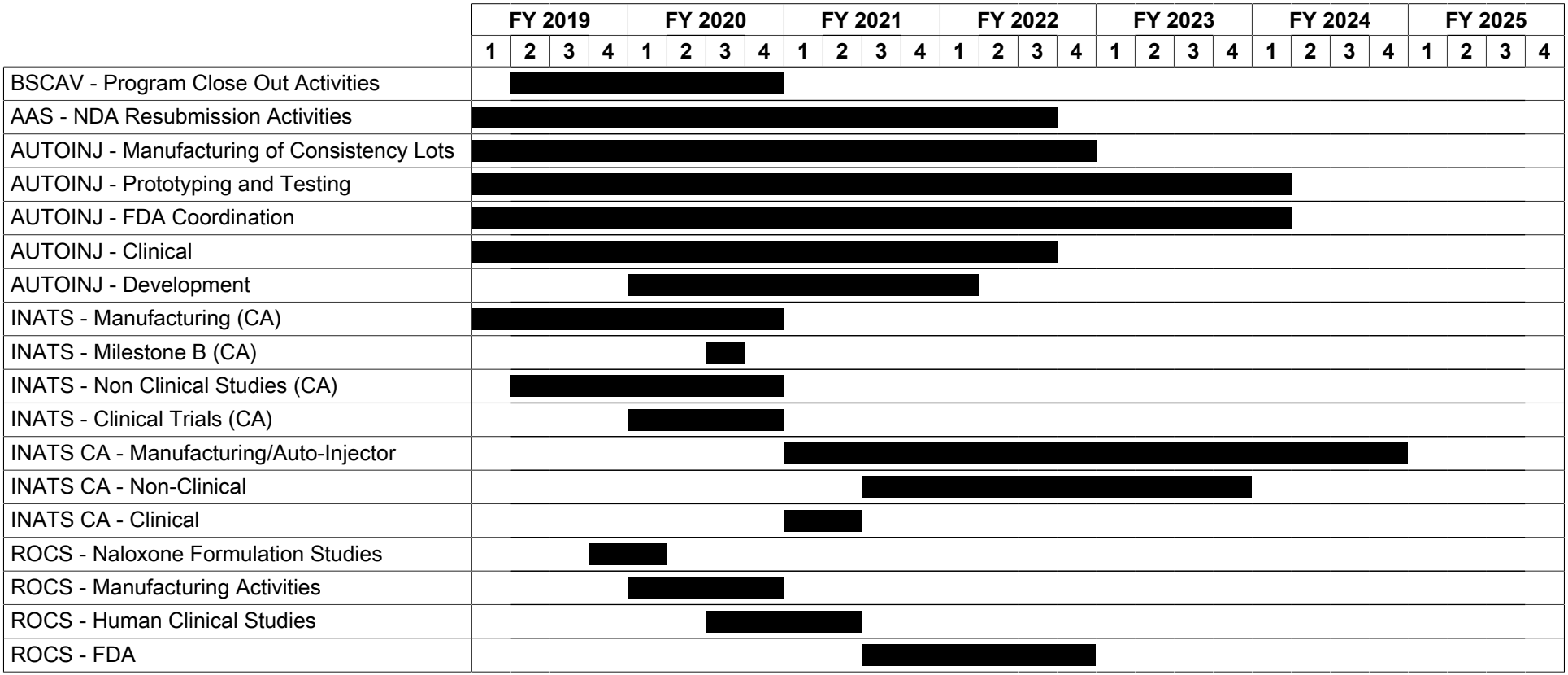

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *Medical Chemical Defense (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
BSCAV - Program Close Out Activities	2	2019	4	2020
AAS - NDA Resubmission Activities	1	2019	3	2022
AUTOINJ - Manufacturing of Consistency Lots	1	2019	4	2022
AUTOINJ - Prototyping and Testing	1	2019	1	2024
AUTOINJ - FDA Coordination	1	2019	1	2024
AUTOINJ - Clinical	1	2019	3	2022
AUTOINJ - Development	1	2020	1	2022
INATS - Manufacturing (CA)	1	2019	4	2020
INATS - Milestone B (CA)	3	2020	3	2020
INATS - Non Clinical Studies (CA)	2	2019	4	2020
INATS - Clinical Trials (CA)	1	2020	4	2020
INATS CA - Manufacturing/Auto-Injector	1	2021	4	2024
INATS CA - Non-Clinical	3	2021	4	2023
INATS CA - Clinical	1	2021	2	2021
ROCS - Naloxone Formulation Studies	4	2019	1	2020
ROCS - Manufacturing Activities	1	2020	4	2020
ROCS - Human Clinical Studies	3	2020	2	2021
ROCS - FDA	3	2021	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program			Date: February 2020
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) TE5 / *Test & Evaluation (SDD)*	

COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
TE5: *Test & Evaluation (SDD)*	-	8.792	7.684	6.352	-	6.352	5.878	5.879	5.879	6.371	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Chemical Biological Material Assessment Infrastructure (CBMAI) addresses test infrastructure needs with improvements, modifications, and/or new critical test capabilities for chemical, biological, and emerging threat products across the CBDP. The CBMAI funding (BA4-5) is required to provide existing and future test fixtures and methodology to support advanced development test and evaluation intended to meet a changing threat regardless of the test site/location. These activities support current PoRs (e.g., UIPE FoS, NBCRV SSU, etc.) as well as future PoRs such as interdependent contamination mitigation (C3PO, WADS, SEDS), future protective mask programs (i.e., M50 Tech Refresh), remote detection (air to ground/C-SIRP) and integrated early warning (IEW).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Title: 1) CBMAI	1.014	2.940	1.350
Description: Government Integrated Product Team program management and IPT Support to all CBDP programs and external partners. ***FY 2020 Plans:*** Continue Program Management including Government system engineering, program/financial management, costing, personnel support, travel and overhead. ***FY 2021 Plans:*** Continue Program Management including Government system engineering, program/financial management, costing, personnel support, travel and overhead. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Defense-Wide Review (DWR): The Chemical Biological Defense Program FY 2021 funding request was reduced to account for program being or restructured.			
Title: 2) CBMAI	7.778	4.744	5.002
Description: CBMAI provides test infrastructure modification build and integration to address detection, protection, and decontamination requirements and milestone schedules. Provide analysis and testing of innovative technologies and rapid prototyping of equipment to expedite the infrastructure development process. Execution of infrastructure modifications and modernization efforts allow test facilities to expand productivity and reduce costs while providing critical test data. ***FY 2020 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *Test & Evaluation (SDD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020	FY 2021
Complete validation and accreditation of aerosol biological agent chamber. Complete integration of upgraded data management system and transition to Dugway. Initiate infrastructure upgrades to address additional PBAs and emerging threat. ***FY 2021 Plans:*** Complete the integration and validation of a data management system to allow the test community and users to easily change and configure equipment and securely share test data on outdoor test ranges. Continue the integration and validation of referee equipment to provide accurate protective ensemble performance data. Initiate additional upgrades to JABT, ASC, Staging Facility. Complete validation and accreditation of aerosol biological agent chamber. ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Accomplishments/Planned Programs Subtotals	8.792	7.684	6.352

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• TE7: *Test & Evaluation (Op Sys Dev)*	6.179	5.403	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	11.582

Remarks

D. Acquisition Strategy

CHEMICAL BIOLOGICAL MATERIEL ASSESSMENT INFRASTRUCTURE (CBMAI)

CBMAI efforts are supported through competitive contract actions, academia, and other Government agencies. Infrastructure solutions will leverage commercially available systems to provide state-of-the-art capabilities that address current and future CBDP test and evaluation needs. In FY21 and beyond, the Defense-Wide Review (DWR) reduced this program for higher priorities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *Test & Evaluation (SDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBMAI - HW S - Joint Ambiant Breeze Tunnel (JABT)	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.197	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CBMAI - HW S - Test Grid	C/CPFF	Various : Various	0.000	1.504	Dec 2018	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CBMAI - HW S - Upgrades, V&V, Transition	Various	Various : Various	0.000	0.433	Dec 2018	1.000	Dec 2019	0.253	Dec 2020	-		0.253	Continuing	Continuing	0.000
CBMAI - HW C - JABT, ASC, Staging Facility Upgrades	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.000		0.000		1.300	Oct 2020	-		1.300	Continuing	Continuing	0.000
CBMAI - HW S - NTA Defense Test System Fabrication/Installation	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.300	Dec 2018	0.270	Jan 2020	0.000		-		0.000	Continuing	Continuing	0.000
CBMAI - HW S - Open Architecture Data Management System (OADMS) Software Modifications	C/CPFF	Various : Various	0.000	2.871	Dec 2018	1.100	Dec 2019	1.200	Dec 2020	-		1.200	Continuing	Continuing	0.000
CBMAI - HW S - Ballistic Gas Chromatograph (GC)	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.286	Dec 2018	1.474	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
CBMAI - HW S - Government SE & Technical Management Team	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	1.261	Dec 2018	1.538	Nov 2019	1.590	Dec 2020	-		1.590	Continuing	Continuing	0.000
		Subtotal	0.000	6.852		5.382		4.343		-		4.343	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBMAI - Data Collection from Regression Test #2	MIPR	Army Materiel Systems Analysis	0.000	0.081	Feb 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *Test & Evaluation (SDD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Activity : Aberdeen Proving Ground, MD													
CBMAI - DTE C - SCA-V	MIPR	S3i Engineering : LLc, Silver Spring, MD	0.000	0.103	Mar 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CBMAI - OTH C - JABT Dissemination System Testing	C/CPFF	Various : Various	0.000	0.075	Mar 2019	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CBMAI - OTHT C - Whole System Live Agent Test (WSLAT) Chamber	MIPR	West Desert Test Center : Dugway, UT	0.000	0.000		0.400	Dec 2019	0.500	Dec 2020	-		0.500	Continuing	Continuing	0.000
CBMAI - OTE S - Test Grid Sustainment	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.667	Mar 2019	0.500	Dec 2019	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	0.000	0.926		0.900		0.500		-		0.500	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBMAI - PM/MS C - Core Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000	Dec 2018	0.150	Dec 2019	0.159	Dec 2020	-		0.159	Continuing	Continuing	0.000
CBMAI - PM/MS S - IPT Support/Program Management	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	1.014	Feb 2019	1.252	Dec 2019	1.350	Dec 2020	-		1.350	Continuing	Continuing	0.000
		Subtotal	0.000	1.014		1.402		1.509		-		1.509	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Chemical and Biological Defense Program			Date: February 2020
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) TE5 / *Test & Evaluation (SDD)*	

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	8.792		7.684		6.352		-		6.352	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *Test & Evaluation (SDD)*

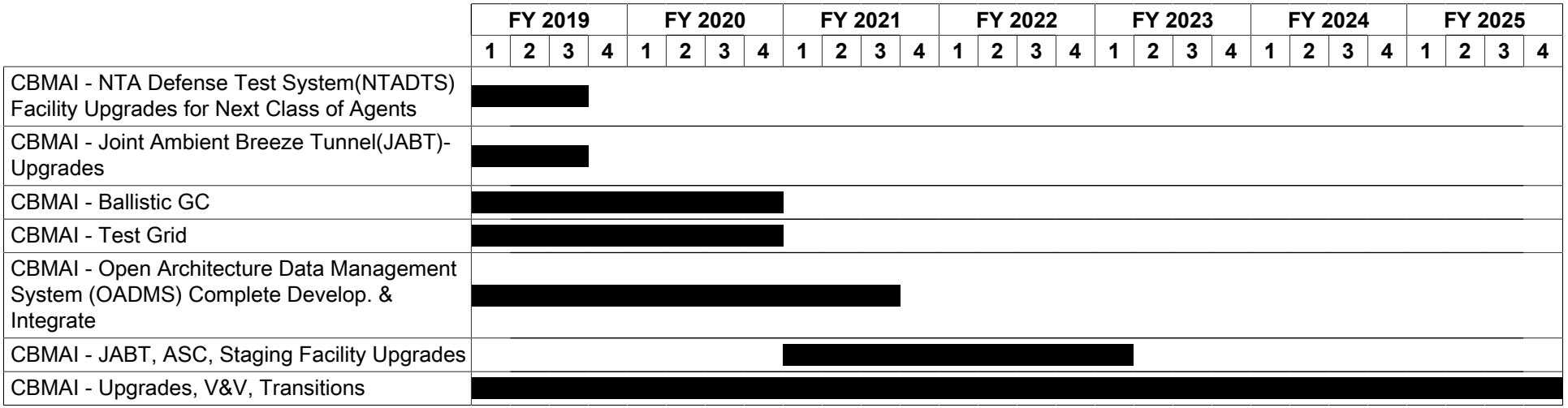

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Chemical and Biological Defense Program		Date: February 2020
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *Test & Evaluation (SDD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CBMAI - NTA Defense Test System(NTADTS) Facility Upgrades for Next Class of Agents	1	2019	3	2019
CBMAI - Joint Ambient Breeze Tunnel(JABT)- Upgrades	1	2019	3	2019
CBMAI - Ballistic GC	1	2019	4	2020
CBMAI - Test Grid	1	2019	4	2020
CBMAI - Open Architecture Data Management System (OADMS) Complete Develop. & Integrate	1	2019	3	2021
CBMAI - JABT, ASC, Staging Facility Upgrades	1	2021	1	2023
CBMAI - Upgrades, V&V, Transitions	1	2019	4	2025