Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Chemical and Biological Defense Program	Date: February 2018
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	-	134.682	148.518	129.886	-	129.886	81.757	67.257	52.705	53.979	Continuing	Continuing
CA4: *CONTAMINATION AVOIDANCE (ACD&P)*	-	49.313	29.211	35.094	-	35.094	27.908	20.208	16.131	17.518	Continuing	Continuing
DE4: *DECONTAMINATION SYSTEMS (ACD&P)*	-	0.500	9.900	7.477	-	7.477	6.281	9.374	9.539	19.240	Continuing	Continuing
IP4: *INDIVIDUAL PROTECTION (ACD&P)*	-	4.517	5.145	4.000	-	4.000	2.000	2.000	3.000	0.000	0.000	20.662
IS4: *INFORMATION SYSTEMS (ACD&P)*	-	4.989	5.941	0.854	-	0.854	0.291	0.075	0.071	0.068	Continuing	Continuing
MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*	-	58.800	83.999	73.090	-	73.090	35.432	26.460	13.317	6.506	Continuing	Continuing
MC4: *MEDICAL CHEMICAL DEFENSE (ACD&P)*	-	4.816	5.165	2.790	-	2.790	4.675	3.975	7.098	7.098	Continuing	Continuing
TE4: *TEST & EVALUATION (ACD&P)*	-	11.747	9.157	6.581	-	6.581	5.170	5.165	3.549	3.549	Continuing	Continuing

A. Mission Description and Budget Item Justification

Operational forces have an immediate need to survive, safely operate, and sustain operations in a Chemical and Biological (CB) threat environment across the continuum of global, contingency, special operations/low intensity conflict, counternarcotics, and other high-risk missions. This program element supports the Advanced Component Development and Prototypes (ACD&P) of medical and non-medical CB defensive equipment and materiel. Congress directed centralized management of Department of Defense (DoD) medical and non-medical CB Defense initiatives. DoD missions for civil support operations have recently expanded and have resulted in providing focus to develop technologies to support CB counterterrorism initiatives. ADC&P is conducted for an array of chemical, biological, and toxin detection and warning systems providing early warning, collector concentrators, generic detection, improved reagents, and decontamination systems using solutions that will remove and/or detoxify contaminated materiel without damaging combat equipment, personnel, or the environment. CB sensors and diagnostics enhance the Departments environmental and medical surveillance efforts by improving the monitoring and surveillance of threats and forces preparing for and engaged in military operations. These efforts are required to enable military commanders and the Military Health System to prevent, treat, and mitigate threats to individual Service Members and military units. Integration of CB sensor and diagnostic data from the programs in this ACD&P will also be usable within the homeland security and Federal public health common operating pictures.

The Department of Defense is responsible for research, development, acquisition, and deployment of medical countermeasures to prevent or mitigate the health effects of CB threats to the Armed Forces and directs strategic planning for and oversight of programs to support medical countermeasures development and acquisition for

our Armed Forces personnel. The CB medical threat to the Armed Forces, in contrast with public health threats to U.S. citizens, encompasses all potential or continuing enemy actions that can render a Service Member combat ineffective. CB medical threats, because they apply as a whole to military units deployed on a specific mission and/or operations, may result in the unit being unable to complete its mission. CB medical countermeasures developed by DoD, unlike those developed to support U.S. population, must support military commanders practical operational requirements and deployment strategies and must emphasizes prevention of injury and illness and protection of the force. Preventive measures in this ACD&P, such as vaccines against the most likely biological threat agents and traditional / non-traditional chemical agent prophylaxis, conserves fighting strength, decreases the logistics burden by reducing the need for larger deployed hospital footprint and greater demand for tactical and strategic medical evacuation, and satisfies the need for greater flexibility in military planning and operations. When vaccines and other prophylactic medical countermeasures are not available, efforts on this ACD&P support pre-hospitalization treatment, en-route care, hospital care, and long-term clinical outcomes. Specific items in this category include improvements to CB diagnostics and therapeutics to mitigate the consequences of chemical and biologic agents and exposure to ionizing radiation due to nuclear or radiological attacks. DoD is the only Federal activity conducting ACD&P on these prophylactic, diagnostic, and therapeutic CB medical countermeasures.

The Department of Defense coordinates its efforts with the Departments of Health and Human Services (DHHS) to promote synergy and minimize redundancy. The Department of Defense ensures coordination by participating in the Public Health Emergency Medical Countermeasures Enterprise interagency strategic planning process ("One Portfolio"). The DoD's longstanding experience and success in CB medical countermeasure research, development, acquisition, and deployment not only ensures protection of the Armed Forces, it also accelerates and improves the overall national efforts in CB medical countermeasure research, development, and acquisition because of its unique facilities, testing capabilities, and trained and experienced personnel.

ACD&P also supports the development of updated test capabilities to evaluate Chemical, Biological, Radiological, and Nuclear (CBRN) Defense systems.

The projects in this program element support efforts in the technology development phase of the acquisition cycle and are therefore correctly placed in Budget Activity 4.

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	138.187	148.518	103.731	-	103.731
Current President's Budget	134.682	148.518	129.886	-	129.886
Total Adjustments	-3.505	0.000	26.155	-	26.155
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	-0.686	-			
• SBIR/STTR Transfer	-2.819	-			
• Other Adjustments	0.000	-	26.155	-	26.155

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Chemical and Biological Defense Program	Date: February 2018
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*

Change Summary Explanation

Funding: FY17 (-$0.686M): Funding reprogrammed to BA5 to support critical program efforts in that BA.
FY17 (-$2.819M): Transfer of funding to support Small Business Innovative Research/Small Business Technology Transfer efforts.
FY19 (+$26.155M): Adjustments to continue advanced development efforts seeking FDA approval for MCMs against priority biological threats from Plague, Botulinum, and Filoviruses. Continue efforts to develop diagnostics for unmet biological threats, chemical and radiological exposures, and to provide capability to lower echelons of care.

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program											Date: February 2018	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*				Project (Number/Name) CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
CA4: *CONTAMINATION AVOIDANCE (ACD&P)*	-	49.313	29.211	35.094	-	35.094	27.908	20.208	16.131	17.518	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Contamination Avoidance Advanced Component Development and Prototypes (ACD&P) Project supports Component Advanced Development and System Integration (CAD/SI) of reconnaissance, detection, identification, and hazard prediction equipment, hardware, and software. Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, Concept of Operations (CONOPS) and Tactics, Techniques, and Procedures (TTPs). Individual efforts are: (1) CBRN Sensor Integration on Robotics Platforms (C-SIRP), (2) Enhanced Capability Demonstration (ECD) Integrated Early Warning (IEW), (3) Enhanced Capability Demonstration (ECD) Joint Chemical Biological Radiological Nuclear Advanced Capability Sets (JCACS), (4) Manned Mounted Platform Radiological Detection System, (5) Reactive Chemistry Orthogonal Surface and Environmental Threat Ticket Array (ROSETTA), (6) Wearable Chemical Agent Detector (WCAD) (formerly NGCD 4), (7) Biosurveillance (BSV), (8) Chemical Biological Radiological Nuclear, Dismounted Reconnaissance Sets 2 (CBRN DRS 2), (9) Next Generation Chemical Detector (NGCD), transitions to Aerosol-Vapor Chemical Agent Detector (AVCAD) (formerly NGCD 1), Proximate Chemical Agent Detector (PCAD) (formerly NGCD 2), Multiphase Chemical Agent Detector (MPCAD) (formerly NGCD 3), and WCAD (formerly NGCD 4), and (10) Non-Traditional Agent (NTA) Defense.

The CBRN Sensor Integration on Robotic Platforms (C-SIRP) is a new start in FY19 that will focus on modular CBRN sensor solutions to enhance Unmanned Air Systems (UAS)/Unmanned Ground Systems (UGS) programs of record (PORs) with capabilities to provide situational awareness across multiple echelons of command in order to enable freedom of maneuver and action on the battlefield. C-SIRP will emphasize integration of commercial off the shelf (COTS) and government off the shelf (GOTS) CBRN sensors for identified unmanned platforms PORs within Program Executive Office Aviation (PEO-AVN) and Program Executive Office Combat Support and Combat Service Support (PEO CS&CSS).

The Enhanced Capability Demonstration Integrated Early Warning (ECD IEW) will integrate advanced technologies and currently fielded capabilities to provide equipment capability sets and situational understanding decision tools to protect against and mitigate CBRN effects when operating in a contaminated environment. The Joint Force requires tactical, enhanced, and integrated Chemical Biological Radiological and Nuclear (CBRN) detection, protection, contamination mitigation, contamination characterization, situational awareness, and hazard understanding early warning capability and decision tools to provide operational commanders time and space to mitigate Weapons of Mass Destruction (WMD) effects. ECD IEW will demonstrate these capabilities by enabling Joint operators to locate, track, identify, characterize, sample, digitally report, protect against, and mitigate CBRN threats by merging situational awareness to create understanding during all phases of operations.

The Joint Force requires enhanced and integrated Chemical Biological Radiological Nuclear (CBRN) protection, contamination mitigation, contamination characterization, and situational awareness capability sets to mitigate the effects of Weapons of Mass Destruction (WMD). The Enhanced Capability Demonstration (ECD) Joint Chemical Biological Radiological Nuclear Advanced Capability Sets (JCACS) is a new start in FY18 that will demonstrate these capabilities by enabling Joint

operators to locate, identify, characterize, sample, digitally report, protect against, and mitigate CBRN threats. The ECD JCACS will integrate advanced technologies to provide capability sets of equipment and situational awareness tools to protect against and mitigate the effects of contamination during WMD interdiction and site characterization missions.

The Mounted Manned Platform Radiological Detection System (MMPRDS) provides ruggedized, networkable detectors with a wide operating range of detection, including prompt neutron/gamma, for integration into vehicles, fixed sites, and ships. It replaces the obsolescent UDR-13 and AN/VDR-2 for mounted operations, providing warning and situational awareness for crews and personnel, and enables mounted RN surveillance and reconnaissance for platforms such as the NBCRV.

The Reactive Chemistry Orthogonal Surface and Environmental Threat Ticket Array (ROSETTA) as a FY18 new start is a ticket based sensor to provide chemical detection and identification capability to the Warfighter. ROSETTA provides improved hazard detection sensitivity, increases the number of chemicals detected and lowers false alarm rate with an array of reactive colorimetric dyes printed on a detector ticket. The ROSETTA program will complete the development and testing of the new detector ticket to update the currently fielded M256A2 kit. The M256A2 technical data package will be updated with an engineering change proposal (ECP) to create a new M256A3 kit.

The Wearable Chemical Agent Detector (WCAD), (formerly NGCD 4), is a wearable CWA, NTA, and TIC vapor detector. This detector will improve detection, consequence management and reconnaissance, and weapons of mass destruction interdiction capabilities to protect general forces.

Biosurveillance (BSV) programs provide a set of capabilities that acquire, integrate, and analyze medical, environmental, and incident management data using existing and next generation systems, medical and non-medical sample collection tools and identifiers/diagnostics; and transition hardware/software tools and devices as residuals from the Biosurveillance Joint United States Force Korea (USFK) Portal and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD). BSV will align the biosurveillance efforts across DoD and national strategies. BSV will scope and influence BSV capabilities as products to meet Warfighter requirements through innovative management of key BSV initiatives. BSV requirements address medical and physical CBRN mission needs spanned in over eleven requirements documents and through Combatant Commander (COCOM) identified needs. BSV supports Joint US Forces Korea (USFK) Portal and Integrated Threat recognition (JUPITR) ATD, and JUONS CC-0557 which find, demonstrate, transition, and transfer the best operational concepts and technology solutions in support of a holistic approach to countering CB threats from the laboratory to operational use and theater confirmation of a CB Event. JUPITR ATD consists of four legs; Early Warning (EW), Biological Identification Capabilities Sets (BICS), Assessment of Environmental Detectors (AED), and Biosurveillance Portal (BSP). The JUPITR ATD provides the USFK with a holistic biosurveillance capability to provide early warning, detection, collection, identification, and theater confirmation of a CB event. The JUPITR ATD consists of filling capability gaps through information sharing and communication systems and detection/diagnostic systems for the USFK. Outputs will focus on proving component, CONOPS, and subsystem transition into relevant technologies that are currently programs of record (PORs) to include global-BSP, Next Generation Diagnostic System (NGDS), Joint Biological Tactical Detection System (JBTDS) and CALS. JUPITR system serves as the baseline configuration for ECD IEW. Systems used in Operational Demonstration will be left behind with a two year sustainment plan for continuing use. Live agent test of AED units support the Joint Project Manager for Nuclear Biological Chemical Contamination Avoidance business case analysis for maritime and fixed site Point Biological Detection.

The CBRN Dismounted Reconnaissance System (CBRN DRS) supports Dismounted Reconnaissance, Surveillance, and CBRN Sensitive Site Assessment missions which enables more detailed and near real-time CBRN information flow for the Warfighter. The CBRN DRS Inc 2 will provide additional capability (beyond what

is in CBRN DRS 1) to the follow-on technical forces to conduct more in-depth dismounted CBRN reconnaissance, sensitive site assessment, characterization of WMD/hazardous materials, events, or accidents, and sensitive site exploitation/elimination. CBRN DRS Inc 2 will provide more sensitive and reliable detection and identification of CBRN threats, enhanced personal protective equipment (PPE) for longer duration missions, and increased situation awareness through networked communications of the hazard. The CBRN DRS Inc 2 configurations will be tailored to meet individual Service mission tasks.

The Next Generation Chemical Detector (NGCD) consists of several detection systems for vapor and aerosol monitoring (NGCD1), locating of liquid and solids on surfaces (NGCD 2), sampling of multiple phases of matter (NGCD 3), and initial assessment of wearable chemical vapor detection technology (NGCD 4). NGCD will detect and identify non-traditional agents, chemical warfare agents (CWA), toxic industrial chemicals (TICs) in the air and on surfaces. The NGCD will provide improved NTA/CWA/TIC selectivity and sensitivity on multiple platforms as well as multiple environments. The scope of the project includes detection of chemicals a few feet away from the detector as well as at the sampling point of the detector. Additional tasks will ruggedize and test a system for nontraditional agent detection for special purpose units. The NGCD program divides into separate programs starting in FY19: Aerosol & Vapor Chemical Agent Detector (AVCAD) formerly NGCD 1, Proximate Chemical Agent Detector (PCAD) formerly NGCD 2, Multi-Phase Chemical Agent Detector (MPCAD) formerly NGCD 3, and Wearable Chemical Agent Detector (WCAD) formerly NGCD 4.

The NTA Defense program supports chemical and biological (CB) defense acquisition programs throughout entire acquisition process to address emerging threat , including investigating pharmaceutical based threats requirements across the full spectrum of commodities. Dedicated initiatives and projects transition information, technologies, and capabilities into acquisition options/efforts (Programs of Record, Enhanced Capability Demonstrations (ECD), and Accelerated Acquisition) that account for the breadth and depth of emerging threats which span the full range of military missions. The NTA Defense program provides essential enablers such as threat understanding; operational impacts of performance trades; and comprehensive, integrated, and defense in depth concepts against emerging threats. The program supports the JPEO portfolio which targets capabilities to reduce operational and tactical risk from technology gaps inherent from emerging threats.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: 1) NGCD Test ***Description:*** Test Events for NGCD 1, 2, and 3	5.791	-	-
Title: 2) NGCD ***Description:*** NGCD 1 - Smiths Detection Contract	0.393	-	-
Title: 3) NGCD ***Description:*** NGCD 1 - Signature Science Contract	0.247	-	-
Title: 4) NGCD ***Description:*** NGCD 1 - Chemring Chemhound Contract	0.257	-	-
Title: 5) NGCD	1.782	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Description: NGCD 2 - Chemring Trace Contamination Surface Detector Contract			
Title: 6) NGCD ***Description:*** NGCD 2 - FLIR/NOMADICS Contract	1.976	-	-
Title: 7) NGCD ***Description:*** NGCD 2 - ChemImage Contract	0.551	-	-
Title: 8) NGCD ***Description:*** NGCD 3 - Bruker Contract	0.898	-	-
Title: 9) NGCD ***Description:*** NGCD 3 - Chemring MARS Contract	0.858	-	-
Title: 10) NGCD ***Description:*** NGCD 3 - Battelle Contract	1.612	-	-
Title: 11) NGCD ***Description:*** Management Services for NGCD 1, 2, 3 and 4 ***FY 2018 Plans:*** Continue Government and contracted Integrated Product Development Team, program management, systems engineering and IPT support (NGCD 4 only; transition NGCD 1-3 to BA5). FY 18-22 POM was first year to break out capabilities ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	8.322	1.037	-
Title: 12) NGCD 4 Wearable Technology Assessment ***Description:*** Initiate assessment of the current state of wearable detector technology to transition technology from S&T.	3.459	-	-
Title: 13) NGCD 3 ***Description:*** MRI Global Contract - Testing of revised NGCD 3 System.	1.689	-	-
Title: 14) NGCD Support for Joint CBRN Advanced Capability Sets (JCACS)	3.935	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Description: Procurement of technologies and integration, test preparation and initiation, and System Engineering Support. Transitions to ECD JCACS funding line in FY18.			
Title: 15) NGCD - Urgent Support for Counter ISIL ***Description:*** Evaluate integration of CBRN sensors for counter ISIL.	4.795	-	-
Title: 16) CBRN Sensors for Robotics Platforms - JCACS ECD ***Description:*** Initiate modeling studies for unmanned CBRN missions and CBRN sensor integration. Support COCOM CBRN robotics tasks.	0.400	-	-
Title: 17) Wearable Chemical Agent Detector (WCAD) ***Description:*** Wearable Chemical Agent Detector (WCAD) Program Management ***FY 2019 Plans:*** Continue from NGCD 4 Government and contracted Integrated Product Development team, program management, systems engineering and IPT Support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred from another funding line.	-	-	0.738
Title: 18) BSV ***Description:*** Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD) - Biological Identification Capability Sets (BICS). ***FY 2019 Plans:*** Develop and train for BICS under the BSV USFK JUPITR ATD in support of Camp Humphreys. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters.	0.116	-	0.879
Title: 19) BSV ***Description:*** Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD) - Assessment of Environmental Detectors (AED). ***FY 2019 Plans:***	0.957	-	1.472

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Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Develop and train for AED under the BSV USFK JUPITR ATD in support of Camp Humphreys. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters.			
Title: 20) BSV ***Description:*** Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD) - Early Warning (EW). ***FY 2019 Plans:*** Develop and train for EW under the BSV USFK JUPITR ATD in support of Camp Humphreys. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters.	3.381	-	2.458
Title: 21) BSV ***Description:*** Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD) - Biosurveillance Portal (BSP). ***FY 2019 Plans:*** Develop and train for BSP under the BSV USFK JUPITR ATD in support of Camp Humphreys. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters.	0.164	-	0.591
Title: 22) BSV ***Description:*** Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD) - residual capability and operational demonstration test support. ***FY 2018 Plans:*** Continue to provide residual capability (through contractor logistics support) and operational demonstration test support for AED, EW, BSP and BICS for Busan Pier 8 JUPITR ATD. Complete Camp Humphreys JUPITR system deployment. ***FY 2019 Plans:*** Continue to provide residual capability (through contractor logistics support) and operational demonstration test support for AED, EW, BSP and BICS for Busan Pier 8 JUPITR ATD. ***FY 2018 to FY 2019 Increase/Decrease Statement:***	3.500	8.768	3.500

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Decrease due to change in program/project technical parameters.			
Title: 23) BSV ***Description:*** Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD) - ATD efforts. ***FY 2019 Plans:*** Continue to support the ATD efforts and overall transition of technologies to programs of record. Supports program management and systems engineering to ensure integration across residual capabilities for AED, EW, BSP and BICS within the USFK JUPITR ATD. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters.	0.538	-	1.240
Title: 24) C-SIRP ***Description:*** Integration of CBRN sensor payloads on identified unmanned air and ground platform programs of record, and provide sensor data for integrated early warning remote sensing and decision support requirements. ***FY 2019 Plans:*** Initiate integration efforts for unmanned ground and air platforms, complete mission modeling efforts. Initiate size, weight, and power trade studies for sensor integration. Purchase developmental test articles. Complete unmanned technology demonstration. Provide support to test events requiring robotic platforms, support IEW remote sensing data requirements, and provide program management support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project is new start effort in FY 2019.	-	-	5.000
Title: 25) CBRN DRS Inc 2 ***Description:*** Provide requirements analysis and market assessment in support of CBRN Dismounted Reconnaissance Set, Kits, and Outfits Increment 2. Funds will be used to assist capability developers in scoping requirements, decompose requirements into specifications, assess the commercial market, identify changes in commercial products required to meet the required capability needs, and procure and test candidates as required. ***FY 2018 Plans:*** Initiate Engineering Design Testing (EDT), and complete Preliminary Design Review (PDR). ***FY 2019 Plans:***	-	0.985	0.500

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Assess potential materiel solutions to meet requirement capabilities, and continue to provide program management support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease due to fact of life change in the program/project.			
Title: 26) ECD IEW ***Description:*** Early Warning capability integration for remote CBRN and Non-CBRN sensors, robotic platforms, unattended sensors, and decision support. ***FY 2018 Plans:*** Initiate Early Warning capability integration for remote CBRN and Non-CBRN sensors, robotic platforms, unattended sensors, and decision support. ***FY 2019 Plans:*** Continue Early Warning capability integration for remote CBRN and Non-CBRN sensors, robotic platforms, unattended sensors, and decision support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters.	-	3.098	4.775
Title: 27) ECD IEW ***Description:*** Early Warning capability RDT&E test article procurement and assessment for remote CBRN and Non-CBRN sensors, robotic platforms, unattended sensors, and decision support. ***FY 2018 Plans:*** Initiate Early Warning capability RDT&E test article procurement and assessment for remote CBRN and Non-CBRN sensors, robotic platforms, unattended sensors, and decision support. ***FY 2019 Plans:*** Continue Early Warning capability RDT&E test article procurement and assessment for remote CBRN and Non-CBRN sensors, robotic platforms, unattended sensors, and decision support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease due to change in program/project technical parameters.	-	2.500	1.500
Title: 28) JCACS ECD ***Description:*** The JCACS ECD will identify solutions for CBRN dismounted reconnaissance/ sensitive assessment mission capability gaps. Commodity areas include protection, contamination mitigation, characterization and situational awareness.	-	9.433	9.146

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
The demonstration will acquire one or more candidate solutions and perform technical and operational testing on the candidate equipment. Equipment meeting required performance thresholds may be provided to warfighters for extended evaluations. ***FY 2018 Plans:*** Purchase test articles, initiate tests and test preparation on the equipment list, support residual materiel. ***FY 2019 Plans:*** Identify a final equipment set. Finalize technical testing. Perform new equipment training and conduct an operational demonstration. For equipment meeting the required performance thresholds, provide to the warfighter for an extended demonstration. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Title: 29) MMPRDS - Program Management ***Description:*** Provide Program Management Support. ***FY 2018 Plans:*** Initiate Government program management and Integrated Product Team (IPT) support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Engineering and Manufacturing Development Phase.	-	0.177	-
Title: 30) MMPRDS - System Engineering ***Description:*** Provide system engineering support to the MMPRDS program. ***FY 2018 Plans:*** Provide system engineering support for the program. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Engineering and Manufacturing Development Phase.	-	0.219	-
Title: 31) NTA Defense ***Description:*** Technology Assessments ***FY 2018 Plans:***	0.167	1.657	0.590

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Continue testing/characterization of emerging Commercial Off The Shelf (COTS) technologies to determine potential candidates for inclusion into advanced and emerging threat test and experimentation activities. Continue characterization testing to meet current and anticipated capability needs of JPEO programs of record. Leveraging of previous investment in Design of Experiment and detection algorithms to support program testing and risk reduction. ***FY 2019 Plans:*** Continue to identify commercial off the shelf and maturing technologies, perform characterization testing against current and anticipated capability needs, including pharmaceutical based threats for JPEO programs of record. Leveraging of previous investment in Design of Experiment and detection algorithms to support program testing and risk reduction. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Title: 32) NTA Defense ***Description:*** Threat Understanding/ECD Front End Analysis ***FY 2019 Plans:*** Initiate the study of operational threat presentation, explore the technology for anticipated program capability requirements, and targeted S&T investment to enable future programs. Assist programs of records identify and update testing methodology and support evaluations of materiel solutions against advanced threats, including pharmaceutical based threats. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	0.476	-	0.650
Title: 33) NTA Defense Program Management ***Description:*** NTA Defense ***FY 2019 Plans:*** Continue Government Integrated Product Team program management, systems engineering, and IPT Support to all JPEO programs and external partners. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred from another funding line.	0.990	-	1.010
Title: 34) NTA Defense support for Threat Agent Characterization ***Description:*** The International Novel Threat Agent Characterization Trials project consists of laboratory and field experiments to characterize the properties of emerging chemical threats.	1.449	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: 35) NTA Defense ***Description:*** Systems Engineering ***FY 2018 Plans:*** Conduct mission modeling and incorporate emerging technology to refine advanced threat investment strategies. ***FY 2019 Plans:*** Continue to conduct engineering, modeling and simulation of emerging technology to address the advanced and pharma based threats. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	0.436	0.472	0.450
Title: 36) NTA Defense ***Description:*** Strategic Coordination ***FY 2018 Plans:*** Initiate transition to CB-1 Effects Manual Update and maintain NTA Library. ***FY 2019 Plans:*** Maintain and update NTA Library for use by the Joint Services, DoD and other governmental partners. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	0.174	0.370	0.100
Title: 37) ROSETTA ***Description:*** Provide system engineering design. ***FY 2018 Plans:*** Initiate development of colorimetric sensor. ***FY 2019 Plans:*** Continue development of colorimetric sensor.	-	0.350	0.350
Title: 38) ROSETTA ***Description:*** Management Services	-	0.145	0.145

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
FY 2018 Plans: Initiate Government strategic planning, systems engineering, and program management. ***FY 2019 Plans:*** Continue Government strategic planning, systems engineering, and program management.			
Accomplishments/Planned Programs Subtotals	49.313	29.211	35.094

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• CA5: *CONTAMINATION AVOIDANCE (EMD)*	66.654	127.499	145.653	-	145.653	91.812	48.108	35.941	42.465	Continuing	Continuing
• JF0100: *JOINT CHEMICAL AGENT DETECTOR (JCAD)*	7.547	4.253	3.500	-	3.500	0.000	0.000	0.000	0.000	0.000	15.300
• JX0300: *BIOSURVEILLANCE (BSV)*	2.600	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.600
• MC0100: *JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)*	7.451	0.500	0.000	-	0.000	0.000	0.000	7.655	5.741	Continuing	Continuing
• MC0101: *CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)*	90.445	94.424	91.081	-	91.081	59.972	45.924	44.072	46.674	Continuing	Continuing
• MX0001: *JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)*	0.000	0.000	0.000	-	0.000	46.724	68.825	75.502	81.656	Continuing	Continuing

Remarks

D. Acquisition Strategy

NEXT GENERATION CHEMICAL DETECTOR (NGCD)

BA4: NGCD used Full and Open competition to award TMRR contracts. In FY18 NGCD 4 awarded a wearable technology assessment (WTA) contract to provide brassboard and breadboard prototypes for Government evaluation.

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BA5: In FY18 NGCD 1, 2, and 3 will use for Full and Open competition to award EMD contracts with production options under the NGCD funding line. In FY19 the NGCD program divides into separate programs. These contracts will continue in FY19 under the separate programs, AVCAD, PCAD, MPCAD funding lines. U.S. Special Operations Command (USSOCOM) awarded a contract with production options for Special Purpose (SP) Sets, Kits and Outfits (SKO) and JCAD Chemical Explosive Detector (CED). The JCAD CED was initiated under NCGD effort to develop a modification kit for the JCAD to address NTA and threats of interests going to the SP SKO and Special Purpose Units (SPU).

WEARABLE CHEMICAL AGENT DETECTOR (WCAD)

Wearable Chemical Agent Detector (WCAD), (formerly NGCD 4), awarded a Wearable Technology Assessment (WTA) contract to provide brassboard and breadboard prototypes for Government evaluation.

BIOSURVEILLANCE (BSV)

BSV is a set of capabilities that acquire, integrate, and analyze medical, environmental, and incident management data using existing and next generation systems, medical and non-medical sample collection tools and identifiers/diagnostics. These capabilities will transition as residuals from the Biosurveillance Joint United States Force Korea (USFK) Portal and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD). The JUPITR system of systems will be released to Busan Pier 8 and Camp Humphreys with a two year paid sustainment. Lessons learned, technologies, concepts of employment from the ATD will be transitioned to the programs of record associated with the CBDP (such as G-BSP, EMBD, NGDS, JBTDS & CALS).

CBRN SENSOR INTEGRATION ON ROBOTIC PLATFORMS (C-SIRP)

C-SIRP will utilize a rapid acquisition approach for the integration of CBRN capabilities to match the flexibility in needs of the unmanned platforms based on their operational modes summary/mission profiles (OMS/MPs). A rapid acquisition approach, along with a flexible integration standard, utilizing common interface standards for hardware and software will be critical in the rapid turnaround capabilities needed for this CBRN defense capability.

CBRN DISMOUNTED RECONNAISSANCE SYSTEMS

CA4 The Chemical Biological Radiological Dismounted Reconnaissance Systems (CBRN DRS) Inc 2 program will provide an Advanced Capabilities Set (ACS) for use by Joint Technical Forces in sensitive site assessment, exploitation and elimination missions in conjunction with their existing baseline CBRN DRS Inc1 system. The ACS will be comprised of Government (GOTS) and commercial off-the-shelf (COTS) equipment to the greatest extent possible. Requirements analysis will support Materiel Development Decision and provide guidance for the Analysis of Material Approaches (AoMA) to identify potential solutions. Efforts will culminate in an approved Capabilities Development Document and a Milestone B. Contracting efforts will be initiated under the Joint Enterprise Research, Development, Acquisition and Production contract mechanism. The contract will cover a base period of performance for development/integration with options for Low-Rate and Full Rate Production (FRP).

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CA7 The Chemical Biological Radiological Dismounted Reconnaissance Systems (CBRN DRS) program uses a government-off-the-shelf (GOTS)/commercial-off-the-shelf (COTS) non-developmental item (NDI) single step acquisition approach to a full capability. This strategy employs an NDI acquisition concept to establish a simplified management framework to translate mission needs and emerging technology capabilities into a stable, affordable, well-managed acquisition program. CBRN DRS systems will be produced using a workshare approach between Organic assets and Contractor production facilities.

ENHANCED CAPABILITY DEMO INTEGRATED EARLY WARNING (ECD IEW)

The Enhanced Capability Demonstration Integrated Early Warning (ECD IEW) will conduct an analysis of alternatives and leverage the DTRA IEW ATD to procure developmental equipment for experimentation and demonstration to reduce risk and inform supporting materiel solutions, CONOPS TTPs, Non-CBRN sensors, and requirements to provide operational commanders time and space for freedom to maneuver and action. The ECD IEW will utilize Table Top Exercises (TTX), Operational Demonstrations, and other test events to provide cross commodity equipment sets evaluation leading to the operational deployment to a unit to be determined, with two years of sustainment, further requirements development, CBDP program of record insertion, and concepts of employment.

ENHANCED CAPABILITY DEMONSTRATION JOINT CBRNE ADV CAPABILITY SETS (ECD JCACS)

The Enhanced Capability Demonstration (ECD) Joint Chemical Biological Radiological Nuclear Advanced Capability Sets (JCACS) is an ECD that requires various equipment to be evaluated during User Feedback Events (UFE) and other test events. The acquisition strategy uses existing task-order contracts (including support contracts) and existing supply contracts from Programs of Record to acquire the equipment and technical support required for the effort. Additionally, JCACS will utilize other Government Agencies and Federally Funded Research and Development Centers to provide development, testing and technical support.

MOUNTED MANNED PLATFORM RADIOLOGICAL DETECTION SYSTEM (MMPRDS)

The Mounted Manned Platform Radiological Detection System (MMPRDS) leverages technology transitioning from the Defense Threat Reduction Agency-Nuclear Technologies (DTRA/NT) to expedite technology maturation. DTRA/NT-developed systems will provide component-level test data in support of Milestone B. In Engineering Manufacturing Development (EMD), MMPRDS exterior-mounted and interior-mounted vehicle sensors will be updated and delivered for use in joint evaluation with the NBCRV Sensor Suite Upgrade program, which will support Milestone C. Based on market research, available COTS solutions for interior-mounted vehicle sensors may result in further acquisition streamlining for a portion of the solution set.

NON TRADITIONAL AGENT DEFENSE (NTA DEFENSE)

The NTA Defense program initiatives transition information, technologies, and capabilities into existing and future acquisition programs (PORs, ECD/ACDs, and Accelerated Acquisition) and utilize a variety of contract mechanisms (full and open competition, existing task order contracts within DoD, and DLA).

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

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The Reactive Chemistry Orthogonal Surface and Environmental Threat Ticket Array (ROSETTA) will use a streamlined acquisition strategy. This approach is based on technology that will transition from Science and Technology Efforts and industry. It will be developed using a Full and Open competition to award multiple development contracts. An Engineering Change Proposal (ECP) will be prepared to update the M256A2 kits to the new M256A3 kits. Full and Open Competition will also be used for the M256A3 Production Contract.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program			Date: February 2018
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGCD - HW S - JCACS	MIPR	Various : Various	0.000	2.369	Aug 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #1 (NGCD 1)	C/CPIF	Smiths Detection : Edgewood, MD	2.325	0.393	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #2 (NGCD 1)	C/CPIF	Signature Science : Austin, TX	10.493	0.247	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #3 (NGCD 1)	C/CPIF	Chemring Chemhound : Charlotte, NC	5.934	0.257	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #1 (NGCD 2)	C/CPIF	Chemring TCSD : Charlotte, NC	5.607	1.782	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #2 (NGCD 2)	C/CPIF	FLIR/Nomadics : Stillwater, OK	8.929	1.976	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #3 (NGCD 2)	C/CPIF	ChemImage : Pittsburgh, PA	8.450	0.551	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #1 (NGCD 3)	C/CPIF	Bruker Detection Corp. : Billerica, MA	5.362	0.898	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #2 (NGCD 3)	C/CPIF	Chemring MARS : Charlotte, NC	7.478	0.858	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #3 (NGCD 3)	C/CPIF	Battelle Memorial Institute : Columbus, OH	7.248	1.612	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - NGCD 3 Prototype	C/CPIF	MRIGlobal : Kansas City, MO	0.000	1.689	Jun 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - WCAD WTA Assessment	C/CPIF	Battelle Memorial Institute : Aberdeen, MD	0.000	3.459	May 2017	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 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
C-SIRP - HW C - Product Integration	MIPR	Various : Various	0.000	0.000		0.000		1.500	Dec 2018	-		1.500	Continuing	Continuing	0.000
ECD JCACS - HW C - Product Development	MIPR	Various : Various	0.000	0.000		4.770	Mar 2018	1.705	Mar 2019	-		1.705	Continuing	Continuing	0.000
NTA DEFENSE - HW S - International Novel Threat Agent Characterization Trials (INTACT)	C/CPFF	Various : Various	0.000	1.449	Apr 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Technology Assessments	MIPR	Various : Various	0.000	0.167	Mar 2017	1.246	Mar 2018	0.590	Dec 2018	-		0.590	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Strategic Coordination	MIPR	Various : Various	0.000	0.174	Mar 2017	0.257	Mar 2018	0.100	Dec 2018	-		0.100	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Systems Engineering	MIPR	Various : Various	0.000	0.436	Mar 2017	0.330	Mar 2018	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - NHW S - Threat Understanding	MIPR	Various : Various	0.000	0.476	Mar 2017	0.000		0.650	Dec 2018	-		0.650	Continuing	Continuing	0.000
ROSETTA - HW S - Test	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.350	Feb 2018	0.350	Oct 2018	-		0.350	Continuing	Continuing	0.000
		Subtotal	61.826	18.793		6.953		4.895		-		4.895	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGCD - ES S - Joint Service T&E/SE IPT	MIPR	Various : Various	4.051	1.391	Jun 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - TD/D C -BSP - JACCS/BSP integration development	C/CPFF	Johns Hopkins University - Applied Physics Lab : Laurel, MD	3.798	0.251	Jan 2017	0.538	Jan 2018	0.892	Jan 2019	-		0.892	Continuing	Continuing	0.000

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSV - ES S - Assessment of Environmental Detectors	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	2.402	1.461	Jan 2017	1.745	Jan 2018	2.223	Jan 2019	-		2.223	Continuing	Continuing	0.000
BSV - TD/D C - Biological Identification Capability Sets sustainment assays	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	4.467	0.177	Nov 2016	0.856	Jan 2018	1.326	Jan 2019	-		1.326	Continuing	Continuing	0.000
BSV - ES S - Early Warning sustainment costs for software package	MIPR	Various : Various	2.368	5.161	Jan 2017	4.534	Jan 2018	3.709	Jan 2019	-		3.709	Continuing	Continuing	0.000
C-SIRP - ES C - Market Surveys	Various	Various : Various	0.000	0.000		0.000		0.565	Dec 2018	-		0.565	Continuing	Continuing	0.000
C-SIRP - ES C - Modeling and Simulation	Various	Various : Various	0.000	0.000		0.000		1.250	Dec 2018	-		1.250	Continuing	Continuing	0.000
CBRN DRS - ES C - Inc 2 Market Analysis	Various	Various : Various	0.000	0.000		0.000	Dec 2017	0.150	Dec 2018	-		0.150	Continuing	Continuing	0.000
ECD IEW - Acquisition, Integration and decision tool demonstration	C/CPFF	TBD : TBD	0.000	0.000		2.500	Jan 2018	2.175	Jan 2019	-		2.175	Continuing	Continuing	0.000
ECD IEW - System Integration	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.500	Jan 2018	1.000	Jan 2019	-		1.000	Continuing	Continuing	0.000
MMPRDS - ES C - Engineering Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.219	Oct 2017	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - ES C - OPETS Support	C/CPFF	Patricio Enterprises : Inc., Woodbridge, VA	0.000	0.149	Feb 2017	0.000		0.200	Feb 2019	-		0.200	Continuing	Continuing	0.000
		Subtotal	17.086	8.590		10.892		13.490		-		13.490	Continuing	Continuing	N/A

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGCD - DTE S - JCACS	MIPR	Various : Various	0.000	0.473	Aug 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - Blind Test	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	1.780	4.000	Jul 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - OTHT SB - MIL-STD 810	MIPR	West Desert Test Center : Dugway, UT	0.000	0.400	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - DTE S - Developmental Testing, Operational Assessment, Busan Event	MIPR	Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD	1.269	1.225	Jan 2017	0.000		0.750	Jan 2019	-		0.750	Continuing	Continuing	0.000
C-SIRP - DTE C - Developmental Testing	MIPR	Various : Various	0.000	0.000		0.000		0.750	Apr 2019	-		0.750	Continuing	Continuing	0.000
CBRN DRS - DTE - Inc 2 Test and Evaluation	MIPR	Various : Various	0.000	0.000		0.835	Nov 2017	0.300	Nov 2018	-		0.300	Continuing	Continuing	0.000
ECD IEW - IEW TTX & OP DEMOs	MIPR	Various : Various	0.000	0.000		1.000	Jan 2018	1.500	Jan 2019	-		1.500	Continuing	Continuing	0.000
ECD JCACS - DTE - Test and Evaluation	MIPR	Various : Various	0.000	0.000		3.100	Apr 2018	5.758	Apr 2019	-		5.758	Continuing	Continuing	0.000
		Subtotal	3.049	6.098		4.935		9.058		-		9.058	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGCD - PM/MS C - C-SIRP Development	MIPR	Various : Various	0.000	0.400	Oct 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO,	25.182	8.322	Nov 2016	1.037	Nov 2017	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 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Aberdeen Proving Ground, MD													
NGCD - PM/MS S - JCACS	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	1.093	Jul 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - PM/MS S - Counter ISIL	MIPR	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	4.795	Jul 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
WCAD - PM/MS S - Wearable Chemical Agent Detector (WCAD)	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.738	Dec 2018	-		0.738	Continuing	Continuing	0.000
BSV - PM/MS S - BMO Labor & Travel Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.504	0.306	Nov 2016	0.454	Jan 2018	0.735	Jan 2019	-		0.735	Continuing	Continuing	0.000
BSV - PM/MS S - ECBC ATD Team	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.641	0.075	Jan 2017	0.641	Jan 2018	0.505	Jan 2019	-		0.505	Continuing	Continuing	0.000
C-SIRP - PM/MS C - Program Management	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.935	Dec 2018	-		0.935	Continuing	Continuing	0.000
CBRN DRS - PM - Inc 2-PM/MS-Program Management and System Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.000		0.150	Dec 2017	0.050	Dec 2018	-		0.050	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ECD IEW - IEW - PM/ MS S - Labor and Travel Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		0.750	Jan 2018	0.500	Jan 2019	-		0.500	Continuing	Continuing	0.000
ECD IEW - IEW - PM/MS S - ECBC Matrix Govt labor	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.500	Jan 2018	0.750	Jan 2019	-		0.750	Continuing	Continuing	0.000
ECD IEW - IEW - PM/MS S - ECBC ECD Team	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.348	Jan 2018	0.350	Jan 2019	-		0.350	Continuing	Continuing	0.000
ECD JCACS - PM-Program Management and System Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.000		1.563	Dec 2017	1.683	Dec 2018	-		1.683	Continuing	Continuing	0.000
MMPRDS - PM/MS C - Program Management	MIPR	JPM Guardian : Aberdeen Proving Ground, MD	0.000	0.000		0.177	Oct 2017	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - PM/MS S - Program Management Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.841	Nov 2016	0.666	Dec 2017	1.260	Dec 2018	-		1.260	Continuing	Continuing	0.000
ROSETTA - PM/MS C - ROSETTA	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.000		0.145	Nov 2017	0.000		-		0.000	Continuing	Continuing	0.000
ROSETTA - PM/MS C - ROSETTA #2	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO,	0.000	0.000		0.000		0.145	Oct 2018	-		0.145	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Aberdeen Proving Ground, MD													
		Subtotal	26.327	15.832		6.431		7.651		-		7.651	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	108.288	49.313		29.211		35.094		-		35.094	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

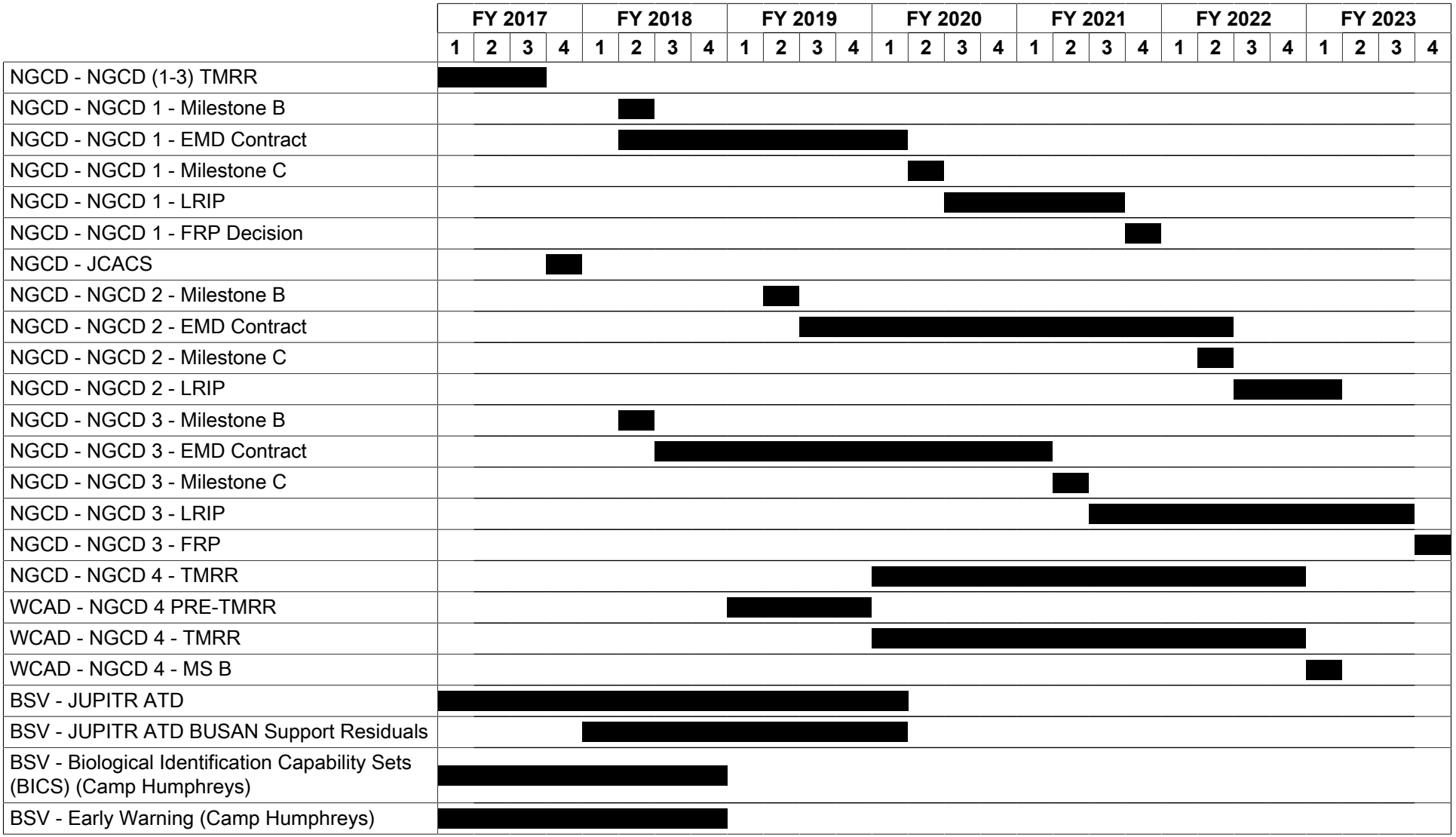

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

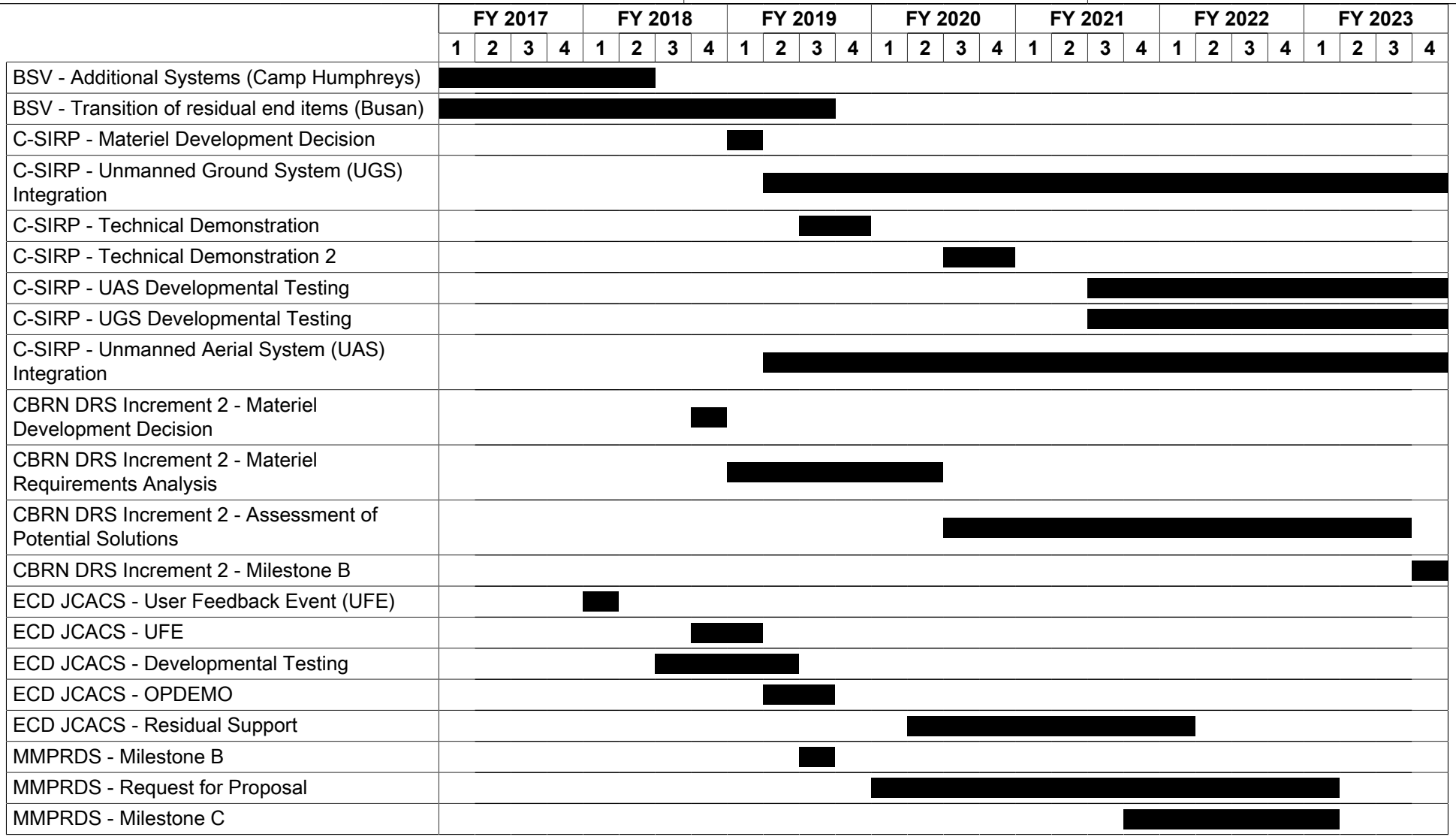

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

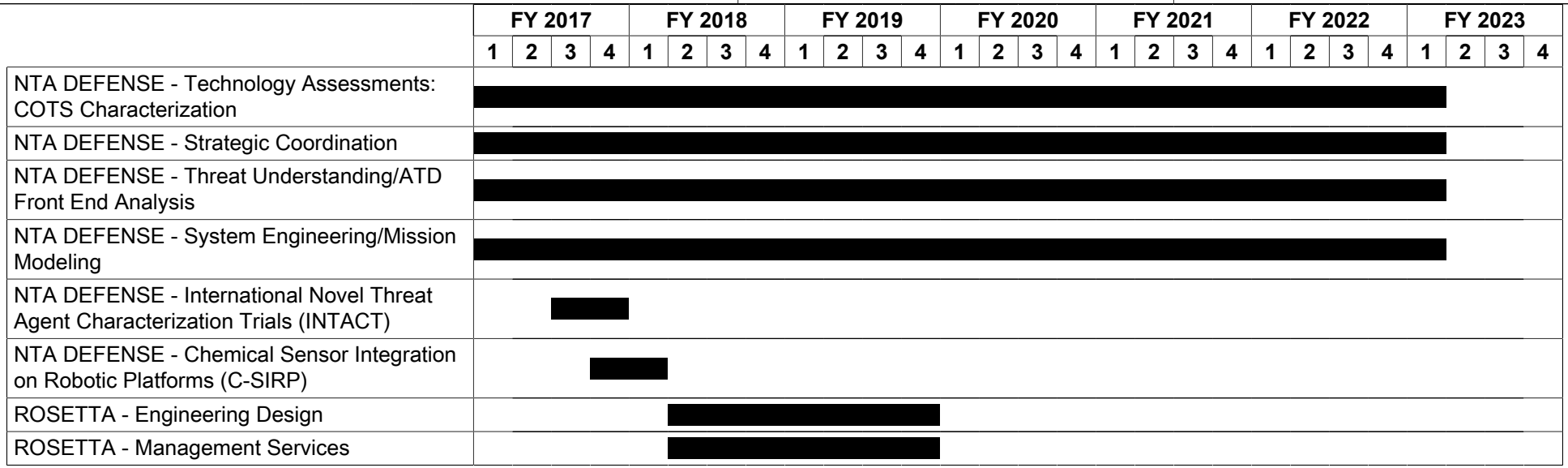

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NGCD - NGCD (1-3) TMRR	1	2017	3	2017
NGCD - NGCD 1 - Milestone B	2	2018	2	2018
NGCD - NGCD 1 - EMD Contract	2	2018	1	2020
NGCD - NGCD 1 - Milestone C	2	2020	2	2020
NGCD - NGCD 1 - LRIP	3	2020	3	2021
NGCD - NGCD 1 - FRP Decision	4	2021	4	2021
NGCD - JCACS	4	2017	4	2017
NGCD - NGCD 2 - Milestone B	2	2019	2	2019
NGCD - NGCD 2 - EMD Contract	3	2019	2	2022
NGCD - NGCD 2 - Milestone C	2	2022	2	2022
NGCD - NGCD 2 - LRIP	3	2022	1	2023
NGCD - NGCD 3 - Milestone B	2	2018	2	2018
NGCD - NGCD 3 - EMD Contract	3	2018	1	2021
NGCD - NGCD 3 - Milestone C	2	2021	2	2021
NGCD - NGCD 3 - LRIP	3	2021	3	2023
NGCD - NGCD 3 - FRP	4	2023	4	2023
NGCD - NGCD 4 - TMRR	1	2020	4	2022
WCAD - NGCD 4 PRE-TMRR	1	2019	4	2019
WCAD - NGCD 4 - TMRR	1	2020	4	2022
WCAD - NGCD 4 - MS B	1	2023	1	2023
BSV - JUPITR ATD	1	2017	1	2020
BSV - JUPITR ATD BUSAN Support Residuals	1	2018	1	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
BSV - Biological Identification Capability Sets (BICS) (Camp Humphreys)	1	2017	4	2018
BSV - Early Warning (Camp Humphreys)	1	2017	4	2018
BSV - Additional Systems (Camp Humphreys)	1	2017	2	2018
BSV - Transition of residual end items (Busan)	1	2017	3	2019
C-SIRP - Materiel Development Decision	1	2019	1	2019
C-SIRP - Unmanned Ground System (UGS) Integration	2	2019	4	2023
C-SIRP - Technical Demonstration	3	2019	4	2019
C-SIRP - Technical Demonstration 2	3	2020	4	2020
C-SIRP - UAS Developmental Testing	3	2021	4	2023
C-SIRP - UGS Developmental Testing	3	2021	4	2023
C-SIRP - Unmanned Aerial System (UAS) Integration	2	2019	4	2023
CBRN DRS Increment 2 - Materiel Development Decision	4	2018	4	2018
CBRN DRS Increment 2 - Materiel Requirements Analysis	1	2019	2	2020
CBRN DRS Increment 2 - Assessment of Potential Solutions	3	2020	3	2023
CBRN DRS Increment 2 - Milestone B	4	2023	4	2023
ECD JCACS - User Feedback Event (UFE)	1	2018	1	2018
ECD JCACS - UFE	4	2018	1	2019
ECD JCACS - Developmental Testing	3	2018	2	2019
ECD JCACS - OPDEMO	2	2019	3	2019
ECD JCACS - Residual Support	2	2020	1	2022
MMPRDS - Milestone B	3	2019	3	2019
MMPRDS - Request for Proposal	1	2020	1	2023
MMPRDS - Milestone C	4	2021	1	2023
NTA DEFENSE - Technology Assessments: COTS Characterization	1	2017	1	2023
NTA DEFENSE - Strategic Coordination	1	2017	1	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** CA4 / *CONTAMINATION AVOIDANCE (ACD&P)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NTA DEFENSE - Threat Understanding/ATD Front End Analysis	1	2017	1	2023
NTA DEFENSE - System Engineering/Mission Modeling	1	2017	1	2023
NTA DEFENSE - International Novel Threat Agent Characterization Trials (INTACT)	3	2017	4	2017
NTA DEFENSE - Chemical Sensor Integration on Robotic Platforms (C-SIRP)	4	2017	1	2018
ROSETTA - Engineering Design	2	2018	4	2019
ROSETTA - Management Services	2	2018	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program											Date: February 2018	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*				Project (Number/Name) DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
DE4: *DECONTAMINATION SYSTEMS (ACD&P)*	-	0.500	9.900	7.477	-	7.477	6.281	9.374	9.539	19.240	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 will remove and/or detoxify contaminated material without damaging combat equipment, personnel, or the environment. 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, CONOPS and Tactics, Techniques, and Procedures (TTPs).

The programs supported under this Project include (1) Contaminated Human Remains System (CHRS), (2) Tactical Disablement System (TACDS), and (3) Mass Personnel Decontamination (MPD).

The Contaminated Human Remains System (CHRS) Program is based on capability gaps identified within both the Contamination Mitigation Initial Capabilities Document (ICD), dated March 2011, and the Mortuary Affairs ICD, dated October 2008. The program consists of two capabilities that will allow for the mitigation of chemical, biological and radiological contaminants in order to safely repatriate DOD-affiliated personnel back to the United States for final interment. The two capabilities identified within the Contamination Mitigation (ConMit) Initial Capabilities Document: a Contaminated Human Remains Transfer Case (CHRT) packaging solution to safely repatriate chemical, biological, or radiological contaminated human remains to the Continental United States and a sustainable Contaminated Remains Mitigation System (CRMS) to reduce the hazard to warfighters by decontaminating chemical, biological, or radiological contaminated human remains. CRMS was previously known as Contaminated Human Remains Decontamination System (CHRDS). 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 CRMS is a system of tents, plumbing, generators, and medical equipment necessary to establish a decontamination site to perform decontamination, identification, and packaging of contaminated human remains for further disposition. The CRMS will reduce the hazards associated with contaminated human remains through decontamination of remains and enable positive identification of remains for the Armed Forces Medical Examiner before packaging in a CHRT.

The TACDS will provide the tactical capability to disable (delay, disrupt, degrade) and / or defeat (destroy) small quantities of chemical warfare materials and biological warfare materials in bulk containers and munitions in an hostile operational environment. DoD's Countering Weapons of Mass Destruction (CWMD) Strategy enables early action through pathway defeat, shaping the environment to dissuade actors from pursuing WMD. The strategy also asserts the Department must respond effectively to WMD crises when called upon.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*

The Mass Personnel Decontamination (MPD) program is an FY19 new start intended to correct capability gaps identified within the Consequence Management Initial Capabilities Document. The 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 both ambulatory and non-ambulatory patients.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: 1) CHRS ***Description:*** Contaminated Human Remains Transfer Case (CHRT) Development and Support ***FY 2018 Plans:*** Award contract to CHRT vendor(s) to develop a solution to meet all packaging and transport requirements, conduct System Requirements Review, begin competitive prototyping, and continue product development for both program components. ***FY 2019 Plans:*** Complete Operational Test Agency Milestone Assessment Report (OMAR) and System Verification Review (SVR) in addition to preparations for Full Rate production for CHRT. All additional documentation will be completed to meet Milestone C and it is expected that an Option Award will be executed in order to meet FRP and provide the US Army with required quantities of systems in FY19 and FY20. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease due to accelerated development effort.	0.140	3.210	1.485
Title: 2) CHRS ***Description:*** Contaminated Remains Mitigation System (CRMS) Technology Development and Support ***FY 2018 Plans:*** Award contract to develop a solution to identify system integrator for CHRDS, conduct System Requirements Review, begin competive prototyping, and continue product development for both program components. ***FY 2019 Plans:*** Begin product development of Contaminated Remains Mitigation System (CRMS)reaching a MS A decision in 1QFY19. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Decrease due to accelerated development effort.	0.360	4.215	1.973
Title: 3) TACDS ***FY 2018 Plans:*** Prepare Pre-Milestone A acquisition documents. ***FY 2018 to FY 2019 Increase/Decrease Statement:***	-	0.701	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Program/project transitioned to Advanced Development.			
Title: 4) TACDS ***FY 2018 Plans:*** Develop lifecycle sustainment plan. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Advanced Development.	-	0.825	-
Title: 5) TACDS ***FY 2018 Plans:*** Develop a Request for Proposal (RFP) and Statement of Work (SOW) for Technology Maturation and Risk Reduction (TMRR) contract. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Advanced Development.	-	0.825	-
Title: 6) TACDS ***FY 2018 Plans:*** Provide System Engineering and Program Management. ***FY 2019 Plans:*** Provide System Engineering and Program Management. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Advanced Development.	-	0.124	1.487
Title: 7) TACDS ***FY 2019 Plans:*** Collect and evaluate data (TDP & General). ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Advanced Development.	-	-	0.849
Title: 8) TACDS ***FY 2019 Plans:***	-	-	0.336

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Conduct system test & evaluation. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Advanced Development.			
Title: 9) TACDS ***FY 2019 Plans:*** Develop system prototypes. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Advanced Development.	-	-	0.853
Title: 10) MPD ***Description:*** MPD Support for MS A ***FY 2019 Plans:*** Begin product development of MPD systems reaching a MS A decision in 1QFY19. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project is new start effort in FY 2019.	-	-	0.494
Accomplishments/Planned Programs Subtotals	0.500	9.900	7.477

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• DE5: *DECONTAMINATION SYSTEMS (EMD)*	8.881	15.686	14.049	-	14.049	13.347	15.542	11.493	24.821	Continuing	Continuing
• JD0050: *DECONTAMINATION FAMILY OF SYSTEMS (DFoS)*	4.704	7.285	12.035	-	12.035	13.414	10.869	9.645	10.579	Continuing	Continuing
• JD0070: *JOINT BIOLOGICAL AGENT DECONTAMINATION SYSTEM (JBADS)*	0.000	4.827	1.000	-	1.000	24.648	2.377	1.364	1.364	Continuing	Continuing

Remarks

D. Acquisition Strategy

CONTAMINATED HUMAN REMAINS SYSTEM (CHRS)

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*

The Contaminated Human Remains System (CHRS) Program product development will consist of the design and prototyping of both a Contaminated Human Remains Transfer Case (CHRT) and a Contaminated Remains Mitigation System (CRMS). Existing efforts under a Joint Urgent Operational Needs Statement has allowed for the acceleration of the CHRT effort, and with additional minor design modifications, developmental and operational testing via two Firm Fixed Priced (FFP) contract awards with two vendors for prototyping and production units in 3QFY18 results in Milestone C decision in FY19, and a Full Rate Production in FY20. The CRMS effort plans for a Milestone A in FY19, and a (FFP) contract award for prototyping and production units in 1QFY20.

TACTICAL DISABLEMENT SYSTEM (TACDS)

(1) Utilizing mature technologies, the TACDS program will take an incremental approach towards the development, integration, test and production of a family of systems (FoS). Developmental efforts in the Technology Maturation and Risk Reduction Phase (TMRR) and the Engineering and Manufacturing Development Phase (EMD) will be contracted through full and open competition. Production and Deployment will also be competed through full and open competition.

MASS PERSONNEL DECON (MPD)

The Mass Personnel Decontamination (MPD) Program will seek a materiel solution to process DoD-affiliated personnel contaminated by chemical, biological, and radiological agents in order to achieve ambulatory and non-ambulatory throughput requirements as dictated by the needs of the Services. The program will develop the equipment, processes and procedures to allow for operational use by all DoD agencies with a competitive/sole source contract for prototyping and production units. Key developmental efforts will include the reduction of current Mass Casualty Decontamination (MCD) System sustainment costs by assessing existing MCD equipment and processes as well as new technology through the use of RFIs, Market Research Analyses and Technology Demonstrations. These efforts will additionally support the development of hazardous waste disposal and the potential integration with a Contaminated Human Remains capability.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program			Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	Project (Number/Name) DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CHRS - HW S - CHRT	C/FFP	TBD : TBD	0.000	0.000		1.696	Nov 2017	0.500	Dec 2018	-		0.500	Continuing	Continuing	0.000
CHRS - HW S - CRMS	C/FFP	TBD : TBD	0.000	0.000		2.700	Nov 2017	0.000		-		0.000	Continuing	Continuing	0.000
TACDS - HW S - Prototype Development	C/CPIF	TBD : TBD	0.000	0.000		0.000		0.853	Nov 2018	-		0.853	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		4.396		1.353		-		1.353	Continuing	Continuing	N/A

Remarks

Contaminated Remains Mitigation System (CRMS) previously known as Contaminated Human Remains Decontamination System (CHRDS)

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CHRS - TD/D S - IPT and Technical Support	MIPR	Various : Various	0.000	0.376	Jul 2017	1.460	Nov 2017	1.460	Nov 2018	-		1.460	Continuing	Continuing	0.000
TACDS - TD/D S - JPdL-CBD3 support costs	Various	JPM Guardian : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.849	Jan 2019	-		0.849	Continuing	Continuing	0.000
TACDS - TD/D S - Support Costs	Various	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		2.351	Oct 2017	0.000		-		0.000	Continuing	Continuing	0.000
MPD - ES S - MPD IPT Support	MIPR	Various : Various	0.000	0.000		0.000		0.382	Nov 2018	-		0.382	Continuing	Continuing	0.000
		Subtotal	0.000	0.376		3.811		2.691		-		2.691	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CHRS - Developmental Testing - CHRT	Various	TBD : TBD	0.000	0.000		0.250	Feb 2018	0.213	Nov 2018	-		0.213	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CHRS - IPT Test Planning - CRMS	Various	TBD : TBD	0.000	0.000		0.000		0.500	Nov 2018	-		0.500	Continuing	Continuing	0.000
CHRS - Technology Demonstration - CRMS	Various	TBD : TBD	0.000	0.000		0.250	Jul 2018	0.000		-		0.000	Continuing	Continuing	0.000
TACDS - DTE C - Prototype Proof of Concept	MIPR	TBD : TBD	0.000	0.000		0.000		0.336	Feb 2019	-		0.336	Continuing	Continuing	0.000
		Subtotal	0.000	0.000		0.500		1.049		-		1.049	Continuing	Continuing	N/A

Remarks

Contaminated Remains Mitigation System (CRMS) previously known as Contaminated Human Remains Decontamination System (CHRDS)

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 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	0.124	Sep 2017	1.069	Nov 2017	0.785	Nov 2018	-		0.785	Continuing	Continuing	0.000
TACDS - PM/MS S - Management	MIPR	Various : Various	0.000	0.000		0.124	Oct 2017	1.487	Dec 2019	-		1.487	Continuing	Continuing	0.000
MPD - PM/MS S - Management and Technical Support	MIPR	Various : Various	0.000	0.000		0.000		0.112	Nov 2018	-		0.112	Continuing	Continuing	0.000
		Subtotal	0.000	0.124		1.193		2.384		-		2.384	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.500		9.900		7.477		-		7.477	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*

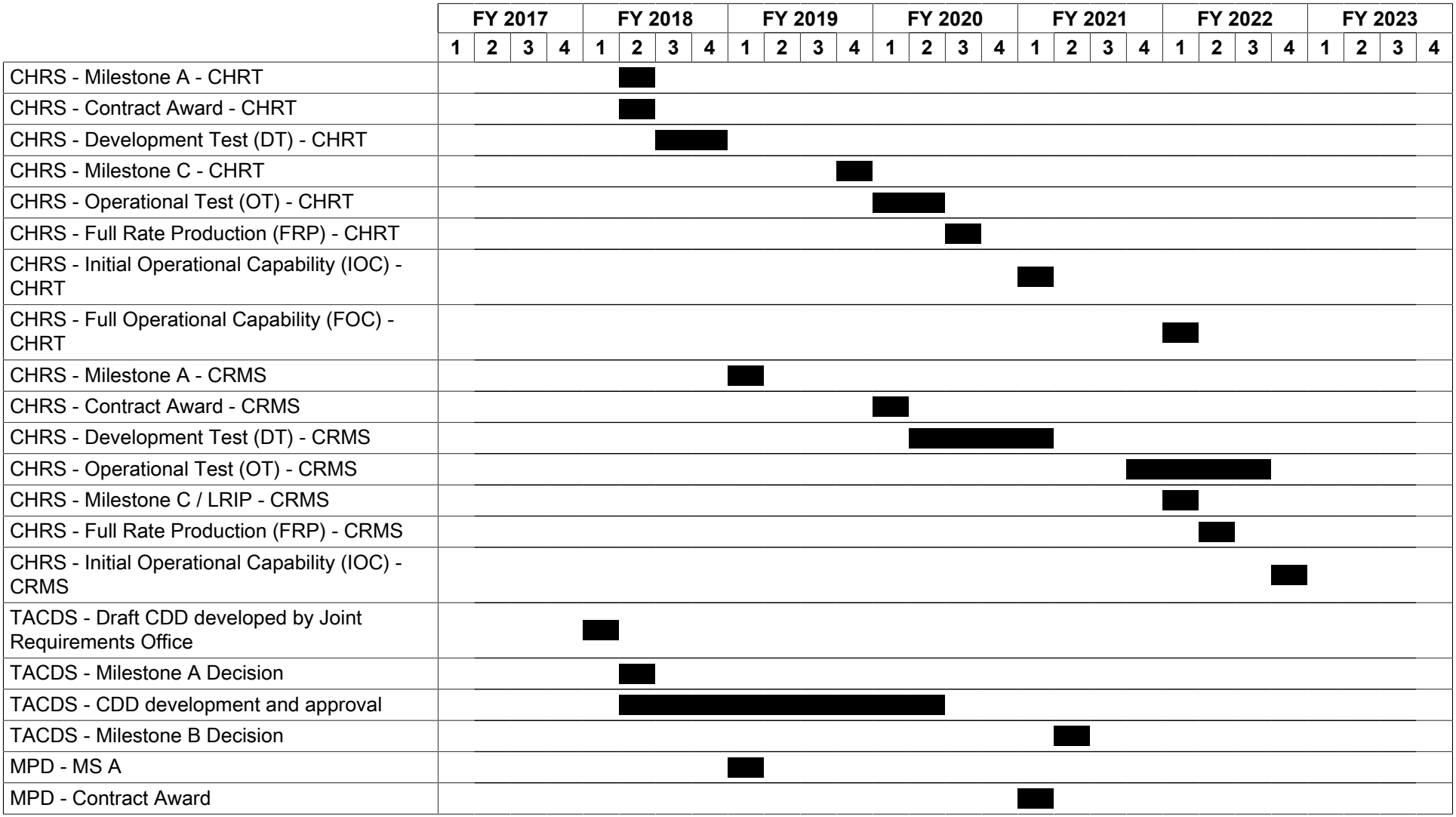

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*

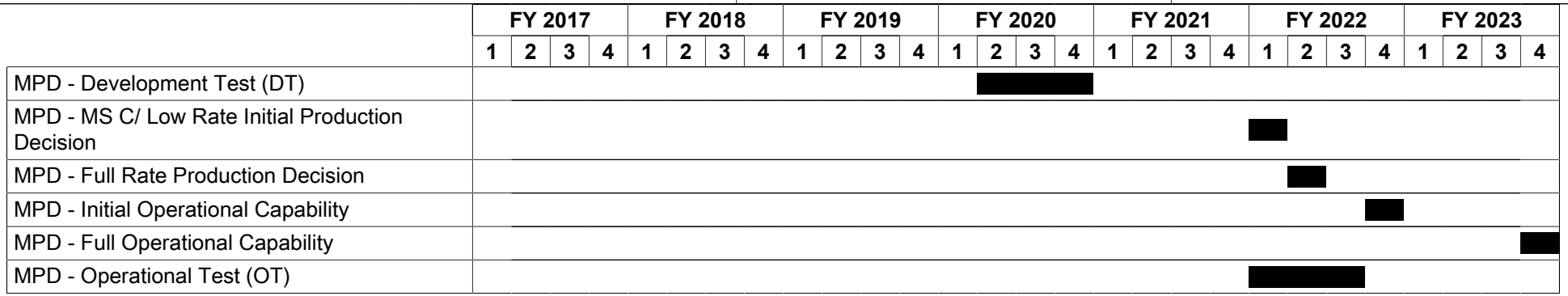

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CHRS - Milestone A - CHRT	2	2018	2	2018
CHRS - Contract Award - CHRT	2	2018	2	2018
CHRS - Development Test (DT) - CHRT	3	2018	4	2018
CHRS - Milestone C - CHRT	4	2019	4	2019
CHRS - Operational Test (OT) - CHRT	1	2020	2	2020
CHRS - Full Rate Production (FRP) - CHRT	3	2020	3	2020
CHRS - Initial Operational Capability (IOC) - CHRT	1	2021	1	2021
CHRS - Full Operational Capability (FOC) - CHRT	1	2022	1	2022
CHRS - Milestone A - CRMS	1	2019	1	2019
CHRS - Contract Award - CRMS	1	2020	1	2020
CHRS - Development Test (DT) - CRMS	2	2020	1	2021
CHRS - Operational Test (OT) - CRMS	4	2021	3	2022
CHRS - Milestone C / LRIP - CRMS	1	2022	1	2022
CHRS - Full Rate Production (FRP) - CRMS	2	2022	2	2022
CHRS - Initial Operational Capability (IOC) - CRMS	4	2022	4	2022
TACDS - Draft CDD developed by Joint Requirements Office	1	2018	1	2018
TACDS - Milestone A Decision	2	2018	2	2018
TACDS - CDD development and approval	2	2018	2	2020
TACDS - Milestone B Decision	2	2021	2	2021
MPD - MS A	1	2019	1	2019
MPD - Contract Award	1	2021	1	2021
MPD - Development Test (DT)	2	2020	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** DE4 / *DECONTAMINATION SYSTEMS (ACD&P)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MPD - MS C/ Low Rate Initial Production Decision	1	2022	1	2022
MPD - Full Rate Production Decision	2	2022	2	2022
MPD - Initial Operational Capability	4	2022	4	2022
MPD - Full Operational Capability	4	2023	4	2023
MPD - Operational Test (OT)	1	2022	3	2022

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program			Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	Project (Number/Name) IP4 / *INDIVIDUAL PROTECTION (ACD&P)*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
IP4: *INDIVIDUAL PROTECTION (ACD&P)*	-	4.517	5.145	4.000	-	4.000	2.000	2.000	3.000	0.000	0.000	20.662
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for Advanced Component Development and Prototypes (ACD&P). Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, Concept of Operations (CONOPS) and Tactics, Techniques, and Procedures (TTPs).

Efforts included in this project are: (1) the Uniform Integrated Protection Ensemble Increment 2 and the Uniform Integrated Protection Ensemble Family of Systems (UIPE FoS). In FY19, CBRN Uniform Integrated Protection Ensemble Increment 2 (UIPE 2) will transition to CBRN Uniform Integrated Protection Ensemble Family of Systems (UIPE FoS).

UIPE FoS will develop a family of systems that will provide the broad spectrum of users individual percutaneous protective equipment with the ability to operate in a contaminated environment with no or minimal degradation in performance. UIPE FoS will seek to address the broader scope of the UIPE Initial Capabilities Document (ICD), to include protection from operationally relevant traditional, non-traditional, and advanced chemical, biological, radiological, and nuclear/Toxic Industrial Material threats likely to be encountered during joint force operations.

The UIPE Increment 2 is being transitioned to UIPE FoS because the program will have more than one solution to meet the Warfighters needs. This is reflected not only in the name change but in the structure of the program. The program is designed to meet mission area needs, not individual Service needs. There are four Mission Areas: Land, Air, Sea, and Homeland Defense. Each of the Mission Areas has unique mission requirements that the UIPE FoS solutions will seek to fulfill.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: 1) UIPE - Increment 2	3.235	5.145	-
Description: Concept Design Evaluation/Technology Maturation and Risk Reduction ***FY 2018 Plans:*** Initiate and complete Gated Material Test to determine capability solutions that will enter into the Design Phase. Activities scheduled in the Design Phase include: Perform Design Verification Testing, Review Prototype Designs, Detailed Design, and Design Lockdown. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.			
Title: 2) UIPE - Increment 2	1.282	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** IP4 / *INDIVIDUAL PROTECTION (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Description: Develop Tactical Advanced Threat Protective Ensemble (TATPE)			
Title: 3) UIPE FoS ***Description:*** Concept Design Evaluation/Technology Maturation and Risk Reduction ***FY 2019 Plans:*** Complete Design Phase activities. Manufacture prototypes for Gated system testing. Conduct early user testing. Update the Business Case Analysis (BCA). ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred from another funding line.	-	-	4.000
Accomplishments/Planned Programs Subtotals	4.517	5.145	4.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• IP5: *INDIVIDUAL PROTECTION (EMD)*	13.580	14.481	9.953	-	9.953	5.471	4.709	6.556	6.770	Continuing	Continuing
• JI0002: *JS AIRCREW MASK (JSAM)*	33.423	36.782	54.775	-	54.775	60.278	63.806	63.110	44.478	Continuing	Continuing
• JI0003: *JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)*	65.374	48.493	16.927	-	16.927	18.166	0.000	0.000	0.000	0.000	148.960
• MA0401: *CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)*	16.025	10.990	13.064	-	13.064	13.820	12.424	13.805	8.906	Continuing	Continuing

Remarks

D. Acquisition Strategy

CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)

The UIPE Increment 2 will use an evolutionary acquisition strategy to develop a family of systems that will provide the Warfighter percutaneous protection from operationally relevant traditional and non-traditional CBRN threats. The acquisition strategy allows for multiple decision points throughout product development, which

provides flexibility to accelerate mature commercial-off the-shelf/non-developmental item solutions and fully develop less mature solutions. The family of systems will be developed based on Service mission profiles with the goal being to minimize operational burden and provide improved fit, function, and integration with the current Warfighter kits compared to legacy systems. Pre-Milestone A activities included the exploration of available state of the art technologies through market research, Requests for Information, and a challenge competition; shaping realistic requirements by exploring trade space of novel technologies; and identified protection offered by non-chemical biological (CB) combat gear. The Technology Maturation and Risk Reduction (TMRR) phase will reduce technology, engineering, integration, and life-cycle cost risk. During this phase, the program will focus on forming mission profile areas designed to narrow the focus of solutions designed specifically for a certain Warfighter functional area. Early testing will aide in deciding what is possible for each mission profile area and feed information into the trade space analysis. Developmental/Operational Testing will assess the ability of the solution to meet requirements, demonstrate system technical performance in accordance with the operational requirements, and demonstrate performance in realistic conditions. An Other Transaction Authority (OTA) contracting approach will be used to procure informational white papers during the 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. Procurement will be through either the OTA or a more traditional contracting vehicle.

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

The UIPE Family of Systems (FoS) will use an evolutionary acquisition strategy to develop a family of systems that will provide the Warfighter percutaneous protection from operationally relevant traditional and non-traditional CBRN threats. The family of systems will be developed based on Service mission profiles (Land, Sea, Air and Homeland Defense) with the goal being to minimize operational burden and provide improved fit, function, and integration with the current Warfighter kits compared to legacy systems. Pre-Milestone A activities included the exploration of available state of the art technologies through market research, Requests for Information, and a challenge competition; shaping realistic requirements by exploring trade space of novel technologies; and identified protection offered by non-chemical biological (CB) combat gear. The Technology Maturation and Risk Reduction (TMRR) phase will reduce technology, engineering, integration, and life-cycle cost risk. During this phase, the program will focus on forming mission profile areas designed to narrow the focus of solutions designed specifically for a certain Warfighter functional area. Early testing will aide in deciding what is possible for each mission profile area and feed information into the trade space analysis. Developmental/Operational Testing will assess the ability of the solution to meet requirements, demonstrate system technical performance in accordance with the operational requirements, and demonstrate performance in realistic conditions. An Other Transaction Authority (OTA) contracting approach will be used to procure informational white papers during the 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. Procurement will be through either the OTA or a more traditional contracting vehicle. Once Milestone B is achieved for the Family of Systems each mission profile will be broken out onto their own budget lines.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** IP4 / *INDIVIDUAL PROTECTION (ACD&P)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UIPE - HW SB - Tactical Advanced Threat Protective Ensemble (TATPE)	MIPR	US Army Natick Soldier RD&E Center : Natick, MA	0.416	0.523	Oct 2016	0.000		0.000		-		0.000	0.000	0.939	0.000
UIPE - HW SB - TATPE Design Development/ Configuration	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.100	Oct 2016	0.000		0.000		-		0.000	0.000	0.100	0.000
UIPE - HW S - Design Concept Development	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.403	Nov 2016	0.000		0.000		-		0.000	0.000	0.403	0.000
UIPE FOS - HW S - Prototype Development	Various	TBD : TBD	0.000	0.000		0.000		1.000	Nov 2018	-		1.000	0.000	1.000	0.000
		Subtotal	0.416	1.026		0.000		1.000		-		1.000	0.000	2.442	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UIPE - TD/D S - Integrated Product Team (IPT), Program, Engineering, and Technical Support	MIPR	Various : Various	2.263	1.949	Oct 2016	1.809	Nov 2017	0.000		-		0.000	0.000	6.021	0.000
UIPE - TD/D S - Tactical Advanced Threat Protective Ensemble (TATPE) Concept Design/ Engineering	MIPR	US Army Natick Soldier RD&E Center : Natick, MA	1.261	0.153	Oct 2016	0.000		0.000		-		0.000	0.000	1.414	0.000
UIPE - TD/D S - TATPE Engineering Analysis	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.506	Feb 2017	0.000		0.000		-		0.000	0.000	0.506	0.000
UIPE - ES S - Systems Engineering (SRR/PDR)	MIPR	Various : Various	0.000	0.270	Jul 2017	0.000		0.000		-		0.000	0.000	0.270	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** IP4 / *INDIVIDUAL PROTECTION (ACD&P)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UIPE FOS - ES C - ES C - UIPE - TD/D S - Integrated	MIPR	Various : Various	0.000	0.000		0.000		0.546	Nov 2018	-		0.546	0.000	0.546	0.000
UIPE FOS - ES S - UIPE - ES S - Systems	MIPR	Various : Various	0.000	0.000		0.000		0.546	Nov 2018	-		0.546	0.000	0.546	0.000
		Subtotal	3.524	2.878		1.809		1.092		-		1.092	0.000	9.303	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UIPE - DTE S - Design Concept/System Level Testing - Aircrew testing and test planning	MIPR	Various : Various	2.850	0.094	Nov 2016	2.594	Nov 2017	0.000		-		0.000	0.000	5.538	0.000
UIPE FOS - DTE S - UIPE - DTE S - Design	MIPR	Various : Various	0.000	0.000		0.000		1.000	Nov 2018	-		1.000	0.000	1.000	0.000
		Subtotal	2.850	0.094		2.594		1.000		-		1.000	0.000	6.538	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UIPE - PM/MS S - Program Management Support	MIPR	Various : Various	0.976	0.519	Nov 2016	0.742	Jan 2018	0.000		-		0.000	0.000	2.237	0.000
UIPE FOS - PM/MS C - UIPE - PM/MS S	MIPR	Various : Various	0.000	0.000		0.000		0.908	Nov 2018	-		0.908	0.000	0.908	0.000
		Subtotal	0.976	0.519		0.742		0.908		-		0.908	0.000	3.145	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program			Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	Project (Number/Name) IP4 / *INDIVIDUAL PROTECTION (ACD&P)*	

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.766	4.517		5.145		4.000		-		4.000	0.000	21.428	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** IP4 / *INDIVIDUAL PROTECTION (ACD&P)*

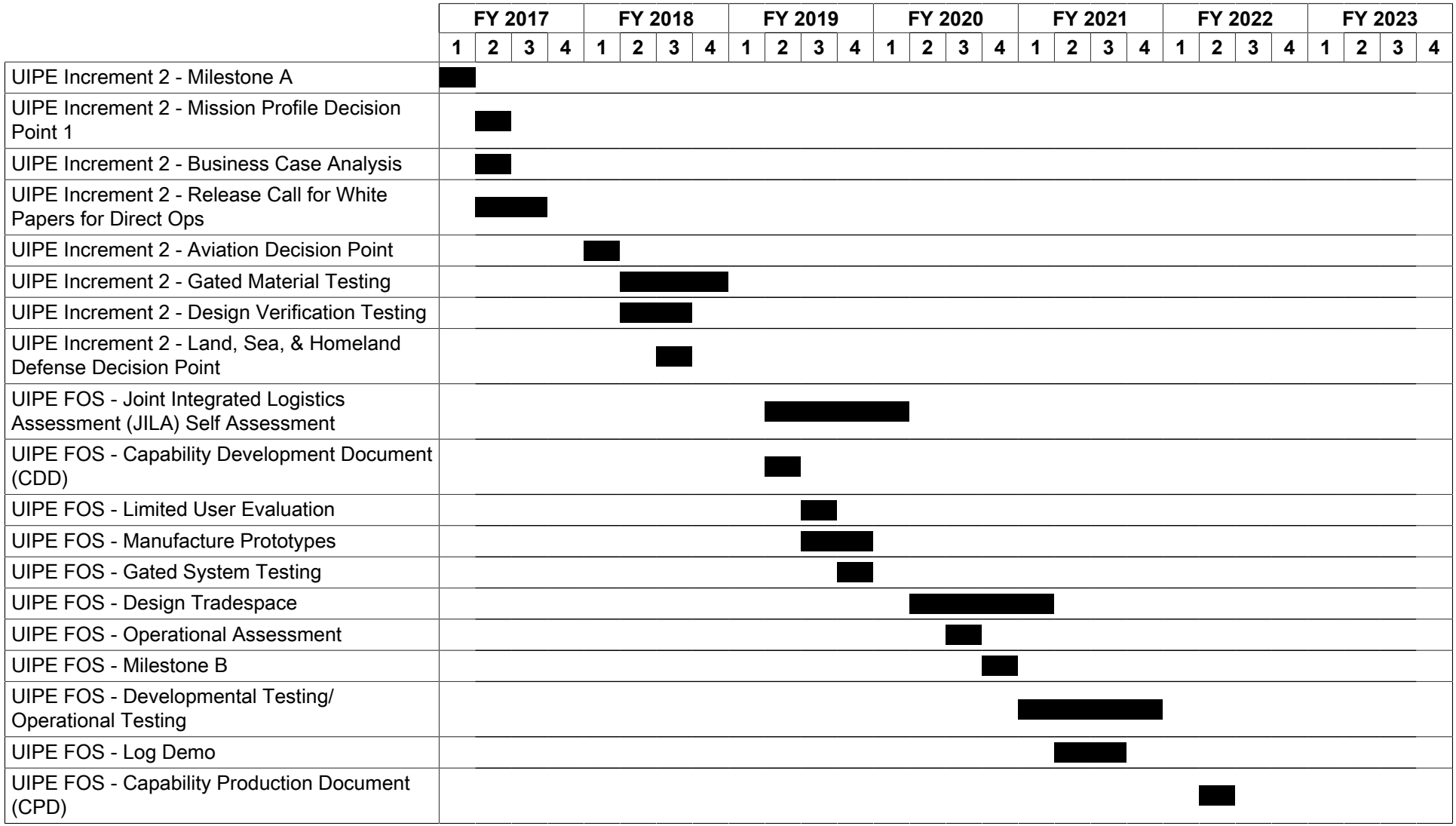

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** IP4 / *INDIVIDUAL PROTECTION (ACD&P)*

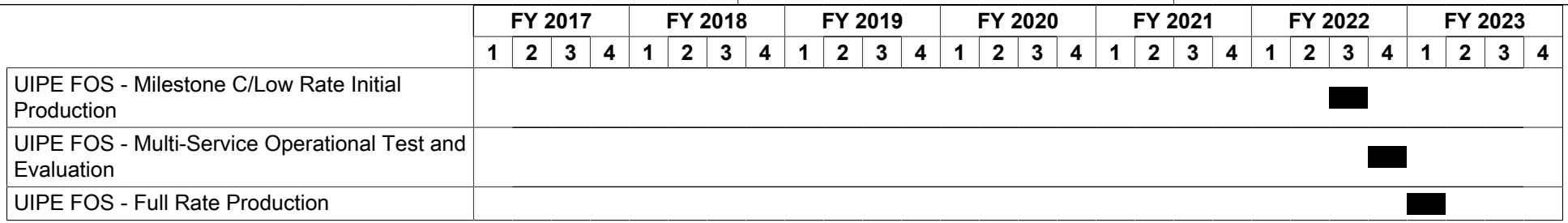

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** IP4 / *INDIVIDUAL PROTECTION (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
UIPE Increment 2 - Milestone A	1	2017	1	2017
UIPE Increment 2 - Mission Profile Decision Point 1	2	2017	2	2017
UIPE Increment 2 - Business Case Analysis	2	2017	2	2017
UIPE Increment 2 - Release Call for White Papers for Direct Ops	2	2017	3	2017
UIPE Increment 2 - Aviation Decision Point	1	2018	1	2018
UIPE Increment 2 - Gated Material Testing	2	2018	4	2018
UIPE Increment 2 - Design Verification Testing	2	2018	3	2018
UIPE Increment 2 - Land, Sea, & Homeland Defense Decision Point	3	2018	3	2018
UIPE FOS - Joint Integrated Logistics Assessment (JILA) Self Assessment	2	2019	1	2020
UIPE FOS - Capability Development Document (CDD)	2	2019	2	2019
UIPE FOS - Limited User Evaluation	3	2019	3	2019
UIPE FOS - Manufacture Prototypes	3	2019	4	2019
UIPE FOS - Gated System Testing	4	2019	4	2019
UIPE FOS - Design Tradespace	2	2020	1	2021
UIPE FOS - Operational Assessment	3	2020	3	2020
UIPE FOS - Milestone B	4	2020	4	2020
UIPE FOS - Developmental Testing/Operational Testing	1	2021	4	2021
UIPE FOS - Log Demo	2	2021	3	2021
UIPE FOS - Capability Production Document (CPD)	2	2022	2	2022
UIPE FOS - Milestone C/Low Rate Initial Production	3	2022	3	2022
UIPE FOS - Multi-Service Operational Test and Evaluation	4	2022	4	2022
UIPE FOS - Full Rate Production	1	2023	1	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program			Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	Project (Number/Name) IS4 / *INFORMATION SYSTEMS (ACD&P)*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
IS4: *INFORMATION SYSTEMS (ACD&P)*	-	4.989	5.941	0.854	-	0.854	0.291	0.075	0.071	0.068	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for Advanced Component Development and Prototypes (ACD&P) responsible for providing the information architecture and applications for shaping the battlespace against the Chemical, Biological, Radiological and Nuclear (CBRN) threat. 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) the Biosurveillance Portal (BSP); (2) the Joint Effects Model (JEM); (3) the Joint Warning and Reporting Network (JWARN); and (4) the Software Support Activity (SSA).

The BSP program addresses USSOCOM requirements contained in an approved Information Systems Capability Development Document (IS CDD). BSP is a web-based enterprise environment that facilitates collaboration, communication, and information sharing in support of the detection, management, and mitigation of man-made and naturally occurring biological events. BSP bridges the communication gaps in the biosurveillance domain to provide a central access point for biosurveillance information and situational awareness for DoD, interagency and allied partners supporting the early identification and response to biological events.

BSP provides an integrated suite of web-based components designed to support public health officers, environmental officers, clinicians, physicians, and CBRN personnel as they maintain their situational awareness of local, regional, and global biological threats to the force. BSP does not duplicate existing DoD capabilities, but rather leverages existing tools and technologies to provide users across multiple organizations and disciplines with a centralized "one-stop shop" for all of their biosurveillance resources.

The Joint Effects Model (JEM) is a web-based software application that supplies the Department of Defense (DoD) with the one and only accredited tool to effectively model and simulate the effects of Chemical, Biological, Radiological and Nuclear (CBRN) weapon strikes and incidents. JEM is capable of providing all Warfighters with the ability to accurately model and predict the time-phased impact of CBRN and Toxic Industrial Chemical/Material (TIC/TIM) events and effects. JEM supports planning to mitigate the effects of Weapons of Mass Destruction (WMD) and to provide rapid estimates of hazards and effects into the Common Operational Picture (COP).

Follow-on increments of JEM will refine and display hazard areas in near real time to reflect inputs such as meteorological, oceanographic, or actual agent concentration data. JEM will automatically receive input data from the Command, Control, Communications, Computers and Intelligence (C4I) system on which it resides, such as historical climatology, local observations, weather forecasts, natural environmental threats (i.e.: pandemic influenza, etc.), terrain data, intelligence information, or population data. JEM will also allow manual user input for factors such as concentrations of chemical warfare agents or actual exposure measurements and forecast sheltering stay-times and provide for modeling sheltering time through user-defined scenarios.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** IS4 / *INFORMATION SYSTEMS (ACD&P)*

The Joint Warning and Reporting Network (JWARN) is an accredited Department of Defense (DOD) warning and reporting system that provides a standardized warning and reporting capability for Chemical, Biological, Radiological and Nuclear (CBRN) and Toxic Industrial Materials (TIM) incidents.

JWARN supports the Joint Force Commander (JFC) by improving force protection capabilities for units operating in chemical, biological, radiological and nuclear environments. JWARN provides an over-lay of CBRN 1-6 reports on the Common Operational Picture, displayed through Service provided C4I systems resident at all echelons of command. JWARN will be operated by CBRN and non-CBRN trained personnel operating in the operations center at various command nodes. This provides commanders with situational awareness to inform decision making for force protection criteria, unmasking operations, decontamination, and continuity of operations in a contaminated environment. Future sensor configurations will forward sensor inputs directly to JWARN via established communication lanes, removing the man-in-the-loop requirement with the current system configuration. JWARN will be information system classification agnostic and must be able to operate on unclassified, secret, top secret, and mission partner IT Systems without increasing system operator requirement, i.e.: sensor to COP via one communication loop. As a result, sensors will then be able to communicate with JWARN on the same network, regardless of classification.

The Software Support Activity (SSA) is a Chem-Bio Defense user developmental support and service organization to facilitate net-centric interoperability of systems in acquisition for the Warfighter. The SSA provides the CBRN Warfighter with Joint Service solutions for Cybersecurity/Information Assurance (IA), Integrated Architectures, Data Management/Modeling, Interoperability Certifications, Verification, Validation and Accreditation (VV&A) to support interoperable and integrated net-centric, service-oriented solutions for CBRN systems. The SSA emphasizes development of reference implementations to guide Government and industry system and software developers to ensure that their products meet common interoperability standards. The latest technologies/products include the definition of a Common CBRN Sensor Integration Standard (CCSI) and the CBRN Data Model. These technologies and direct enablers for the development of CBRN integrated sensor networks and the dissemination of CBRN information across all users. The SSA directly supports Chemical and Biological Defense Program (CBDP) initiatives by providing common service oriented architectures and frameworks for the collection and dissemination of Bio-Surveillance and other critical CBRN information.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: 1) BSP	0.389	0.382	0.201
Description: Program Management ***FY 2018 Plans:*** Continue management and oversight of technology development and transition efforts for new technologies and capabilities designed to satisfy BSP requirements. ***FY 2019 Plans:*** Continue management and oversight of technology development and transition efforts for new technologies and capabilities designed to satisfy BSP requirements. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Title: 2) BSP	0.711	0.693	0.361

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Description: Product Development ***FY 2018 Plans:*** Continue prototyping, developing, and evaluating new technologies, models, and tools from both internal and external developers for transition into BSP. Two planned technology transitions from the Tech Base in FY17 and two in FY18. ***FY 2019 Plans:*** Complete remaining efforts for prototyping, developing, and evaluating new technologies, models, and tools from both internal and external developers for transition into BSP as needed. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase.			
Title: 3) JEM 2 ***Description:*** Prototyping and Development ***FY 2018 Plans:*** Continue integration of emerging science and technology capabilities received from Advanced Technical Development (ATD) phase and defined in Requirements Definition Package 3 and 4. ***FY 2019 Plans:*** Continue integration of emerging science and technology capabilities received from Advanced Technical Development (ATD) phase and defined in Requirements Definition Package (RDP) 3 and 4. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	0.594	0.115	0.075
Title: 4) JEM 2 ***Description:*** Test & Evaluation (T&E)	0.169	-	-
Title: 5) JEM 2 ***Description:*** Management Support	0.107	-	-
Title: 6) JEM 2 ***Description:*** Technical Support	0.207	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: 7) JWARN 2 ***Description:*** Prototyping ***FY 2018 Plans:*** Continue software prototyping efforts supporting JWARN development for all three Requirements Definition Packages (RDPs). ***FY 2019 Plans:*** Transition capabilities from advanced component development and prototype effort to system development. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase.	0.737	0.834	0.022
Title: 8) JWARN 2 ***Description:*** Product Development ***FY 2018 Plans:*** Continue JWARN Technology Demonstrations and User Assessments to evaluate and prove component and subsystem maturity of critical science and technology, system performance, and validate requirements within the IT BOX construct and Agile Process developed software prototype(s). ***FY 2019 Plans:*** Complete JWARN Technology Demonstrations and User Assessments to evaluate and prove component and subsystem maturity of critical science and technology, system performance, and validate requirements within the IT BOX construct and Agile Process developed software prototype(s). ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase.	0.636	1.383	0.037
Title: 9) JWARN 2 ***Description:*** Test and Evaluation (T&E) ***FY 2018 Plans:*** Continue Government developmental testing and analysis of component and subsystem maturity, to include Technology Readiness Assessment(s), of software submitted for evaluation during prototyping. Continue the DoD Information Assurance	0.311	0.744	0.020

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Certification and Accreditation and Joint Interoperability Certification process. Conduct Operational Test and Evaluation (OT&E) of Capability Drop (CD) 1.4 for USA, USMC, USAF and (CD) 2.2 & 2.3 for USA and Joint C2 Host Systems. ***FY 2019 Plans:*** Complete Government developmental testing and analysis of component and subsystem maturity, to include Technology Readiness Assessment(s), of software submitted for evaluation during prototyping. Complete the DOD Information Assurance Certification and Accreditation and Joint Interoperability Certification process. Complete Operational Test (OT) of the JWARN systems (CD 2.1, 2.2, 2.4, & 2.5) capabilities to CBRN-IS and Army, Marine, and Navy. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase.			
Title: 10) JWARN 2 ***Description:*** Program Management Support ***FY 2018 Plans:*** Continue to provide strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program within IT BOX construct and Agile Software development process. Award Re-compete contract for prime developer. ***FY 2019 Plans:*** Complete the strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program within IT BOX construct and Agile Software development process. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase.	0.292	0.657	0.017
Title: 11) JWARN 2 ***Description:*** Technical Support ***FY 2018 Plans:*** Continue to provide engineering and technical support for JWARN development under the IT BOX construct and Agile Software development processes. Continue independent system verification, validation, and class type accreditation as required. ***FY 2019 Plans:***	0.736	1.037	0.027

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** IS4 / *INFORMATION SYSTEMS (ACD&P)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Complete the engineering and technical support for JWARN development under the IT BOX construct and Agile Software development processes. Complete the independent system verification, validation, and class type accreditation as required. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Production and Deployment Phase.			
Title: 12) SSA ***Description:*** Integrated Architecture ***FY 2018 Plans:*** Continue required modifications to the integrated Architecture on host platforms and document the infrastructure and technical standards, developing an acquisition Cybersecurity/IA strategy. ***FY 2019 Plans:*** Continue required modifications to the integrated Architecture on host platforms and document the infrastructure and technical standards, developing an acquisition Cybersecurity/IA strategy. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	0.100	0.096	0.094
Accomplishments/Planned Programs Subtotals	4.989	5.941	0.854

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• IS5: *INFORMATION SYSTEMS (EMD)*	24.868	25.677	23.281	-	23.281	22.542	18.221	14.006	7.822	Continuing	Continuing
• IS7: *INFORMATION SYSTEMS (OP SYS DEV)*	10.293	12.203	15.552	-	15.552	16.951	16.492	15.163	13.211	Continuing	Continuing
• G47101: *JOINT WARNING & REPORTING NETWORK (JWARN)*	3.889	0.981	0.502	-	0.502	0.445	0.400	0.375	0.380	Continuing	Continuing
• JC0208: *JOINT EFFECTS MODEL (JEM)*	3.069	0.983	0.911	-	0.911	0.696	0.731	0.746	0.761	Continuing	Continuing
• JS5230: *SOFTWARE SUPPORT ACTIVITY (SSA)*	0.300	0.096	0.094	-	0.094	0.082	0.075	0.071	0.068	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• JX0301: *BIOSURVELLENCE PORTAL (BSP)*	1.220	1.171	1.148	-	1.148	1.133	1.018	0.716	0.000	0.000	6.406

Remarks

D. Acquisition Strategy

BIOSURVEILLANCE PORTAL (BSP)

The Biosurveillance Portal (BSP) program will continue to meet the requirements as set forth in the USSOCOM Information Systems Capability Development Document (IS CDD), 19 May 2014. The BSP program will utilize the JROC's "IT Box" construct for program requirements, management, and development. The intent is to provide the next generation of capability with current and future technologies in less time and fielding products to the DoD utilizing an incremental delivery approach. IT Box enables programs to tailor the incrementally fielded software program model in the DODI 5000.02 to conduct multiple, more frequent fielding events in lieu of a single fielding event. Capabilities will be developed and delivered in a series of Capability Drops (CDs). There are two planned Production Capability Drops and two Engineering Capability Drops planned in each FY. Developmental Testing (DT) and end-to-end tests (E2E) will be conducted for each CD to verify capabilities prior to delivery to the Warfighter. User Feedback Events (UFEs) will be conducted with identified Users to elicit feedback on developed capabilities and input on required adjustments to address new technologies. Initial Operational Capability (IOC) was achieved in July 2016. A Full Operational Test & Evaluation will be conducted prior to Final Operational Capability to be delivered in 3QFY20.

JOINT EFFECTS MODEL (JEM)

JEM 2 acquisition will utilize the JROC's "IT Box" construct for software development. The intent is to provide the next generation of capability with current and future technologies, as stated in the IS ICD, in less time and fielding products to the service more frequently than an incremental delivery approach.

IT Box enables programs to tailor the incrementally fielded software program model in the DODI 5000.02 to conduct multiple, more frequent fielding events in lieu of a single fielding event. Programs conduct a single Milestone B (MS B) decision by the Milestone Decision Authority (MDA) that covers the entire program. MS B is followed by a series of supporting Build Decisions (BDs) associated with each RDP as they are released. The supporting BDs will ensure incorporation of mature technology and development efforts culminating in incremental deliveries of capability to Joint and Service Command and Control (C2) architectures. Instead of a single Milestone C (MS C) decision and fielding event for one increment, the program will return to the MDA for more frequent fielding decisions, as often as annually, as portions of capability are determined suitable and operationally effective. These multiple fielding efforts are based on providing capabilities with the most value to the operators based on Warfighter priorities/needs, maturation of the technology being incorporated and available resources supporting the effort.

As part of this strategy a single JEM integrator, General Dynamics Information Technology (GDIT), was selected as the prime development contract in March 2017.

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The current contractor for JEM 2 will provide all capabilities defined in the Requirement Definition Package 1 (RDP-1), Capability Drop 1.1 (CD 1.1), Capability Drop 1.2 (CD 1.2), and RDP-2 / CD 2.1, CD 2.2, and CD 2.3 documents. It is anticipated that the JRO will release further RDP-1 CDs, RDP-3, and RDP-4 prior to contract completion. The contract awarded in March 2017 includes scope for developing the remaining capabilities under the JEM 2.0 contract. The contract utilizes full and open competition and is referred to as the JEM development, modernization and sustainment contract.

An over-arching MS B and Build Decision for RDP-1 were approved by the MDA in Q4 FY14, and a CD1.1 Fielding Decision and a RDP-2 Build Decision were approved in Q3 FY16. Each subsequent RDP will have a single Build Decision and each CD will have an associated Fielding Decision.

It is anticipated JEM 2 capabilities will transition to CBRN-IS in Fiscal Year 2023.

JOINT WARNING & REPORTING NETWORK (JWARN)

JWARN 2 utilizes the JROC's "IT Box" construct for software requirements management and development. The intent is to provide the next generation of capability with current and future technologies, as stated in the IS ICD, in less time and away from an incremental delivery approach. This effort is being executed under a Cost-Plus-Award Term Incentive structure to gain maximum benefit to the Government in maintaining the fielded baseline and future software capability development and was awarded under a full and open competition Request for Proposal (RFP).

IT Box enables programs to tailor the incrementally fielded software program model in the DODI 5000.02 to conduct multiple, more frequent fielding events in lieu of a single fielding event. Programs conduct a single Milestone B (MS B) decision by the Milestone Decision Authority (MDA) that covers the entire program. MS B is followed by a series of supporting Build Decisions (BDs) associated with each RDP as they are released. The supporting BDs will ensure incorporation of mature technology and development efforts culminating in incremental deliveries of capability to Joint and Service Command and Control (C2) architectures. Instead of a single Milestone C (MS C) decision and fielding event for one increment, the program will return to the MDA for more frequent fielding decisions, as often as annually, as portions of capability are determined suitable and operationally effective. These multiple fielding efforts are based on providing capabilities with the most value to the operators based on Warfighter priorities/needs, maturation of the technology being incorporated and available resources supporting the effort.

The JWARN Program will find an appropriate Sensor Connectivity Capability (SCC) to facilitate the transfer of CBRN sensor information from legacy CBRN sensors to DoD networks. This solution will be external to the CBRN Sensors and Service-identified network transmission device(s).

The current contractor for JWARN 2 will provide all capabilities defined in the Requirement Definition Package 1 (RDP-1) and RDP-2 documents. It is anticipated that the JRO will release further RDP-3 and RDP-4 prior to contract completion.

As part of the strategy for a single JWARN integrator, a follow-on contract Request for Proposal (RFP) is targeted for release Q4 FY17 with a targeted award date of Q3 FY18. The follow-on contractor for JWARN 2 will provide all capabilities defined in the Requirement Definition Package 1 (RDP-1), Capability Drop 1.1 (CD 1.1), Capability Drop 1.2 (CD 1.2), and RDP-2 / CD 2.1 documents. It is anticipated that the JRO will release further RDP-1 CDs, RDP-3, and RDP-4 prior to contract

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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completion. The follow-on contract in FY18 will include scope for developing the remaining capabilities under the JEM 2.0 contract. The JWARN follow-on contract will utilize full and open competition and will be referred to as the JWARN software development and maintenance contract.

It is anticipated JWARN 2 capabilities will transition to CBRN IS in Fiscal Year 2023.

SOFTWARE SUPPORT ACTIVITY (SSA)

The SSA provides enterprise-wide services and coordination across all CBDP programs that contain data or software, or are capable of linking to the Global Information Grid (GIG). The SSA facilitates interoperability, integration, and supportability of existing and developing IT and National Security Systems (NSS). This will be followed by coordination to facilitate the concepts of interoperability, integration and supportability of enterprise-wide services. Next follows work with user communities to develop and demonstrate enterprise-wide common architectures, products and services. The SSA will support the application of the enterprise-wide architectures, products and services into the programs, with verification of compliance with the defined products and services.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - SW S - Software Development	FFRDC	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.687	0.711	Dec 2016	0.693	Dec 2017	0.361	Dec 2018	-		0.361	Continuing	Continuing	0.000
JEM - 2 - SW SB - Prototype development	C/CPFF	General Dynamics Information Technologies : Fairfax, VA	6.141	0.594	Apr 2017	0.115	Apr 2018	0.075	Apr 2019	-		0.075	Continuing	Continuing	0.000
JWARN - 2- SW S - Prototype Dev Follow-On	C/CPAF	TBD : TBD	0.000	0.000		0.000		0.059	Jun 2019	-		0.059	Continuing	Continuing	0.000
JWARN - 2- SW S - Prototype Development	C/CPFF	Northrop Grumman Corp. : Winter Park, FL	8.739	1.373	Dec 2016	2.217	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	15.567	2.678		3.025		0.495		-		0.495	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JEM - 2 - TD/D SB - Engineering support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	3.065	0.207	Nov 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JWARN - 2 ES S - Engineering Support	MIPR	Various : Various	7.413	0.736	Dec 2016	1.037	Dec 2017	0.027	Dec 2018	-		0.027	Continuing	Continuing	0.000
SSA - TD/D C - Engineering Support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	0.290	0.100	Dec 2016	0.096	Dec 2017	0.094	Dec 2018	-		0.094	Continuing	Continuing	0.000
		Subtotal	10.768	1.043		1.133		0.121		-		0.121	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JEM - 2 - OTE S - OT&E	MIPR	Various : Various	2.698	0.169	Dec 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JWARN - 2 - OTHT SB - Gov't developmental testing	MIPR	Various : Various	2.785	0.311	Dec 2016	0.744	Dec 2017	0.020	Dec 2018	-		0.020	Continuing	Continuing	0.000
		Subtotal	5.483	0.480		0.744		0.020		-		0.020	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - PM/MS S - Program Management Support	Various	Various : Various	0.373	0.389	Dec 2016	0.382	Dec 2017	0.201	Dec 2018	-		0.201	Continuing	Continuing	0.000
JEM - 2 - PM/MS C - Program Management	C/CPFF	Battelle Memorial Institute : Columbus, OH	2.228	0.107	Jun 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JWARN - 2 - PM/MS SB - Program management	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	4.503	0.292	Dec 2016	0.657	Dec 2017	0.017	Nov 2018	-		0.017	Continuing	Continuing	0.000
		Subtotal	7.104	0.788		1.039		0.218		-		0.218	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	38.922	4.989		5.941		0.854		-		0.854	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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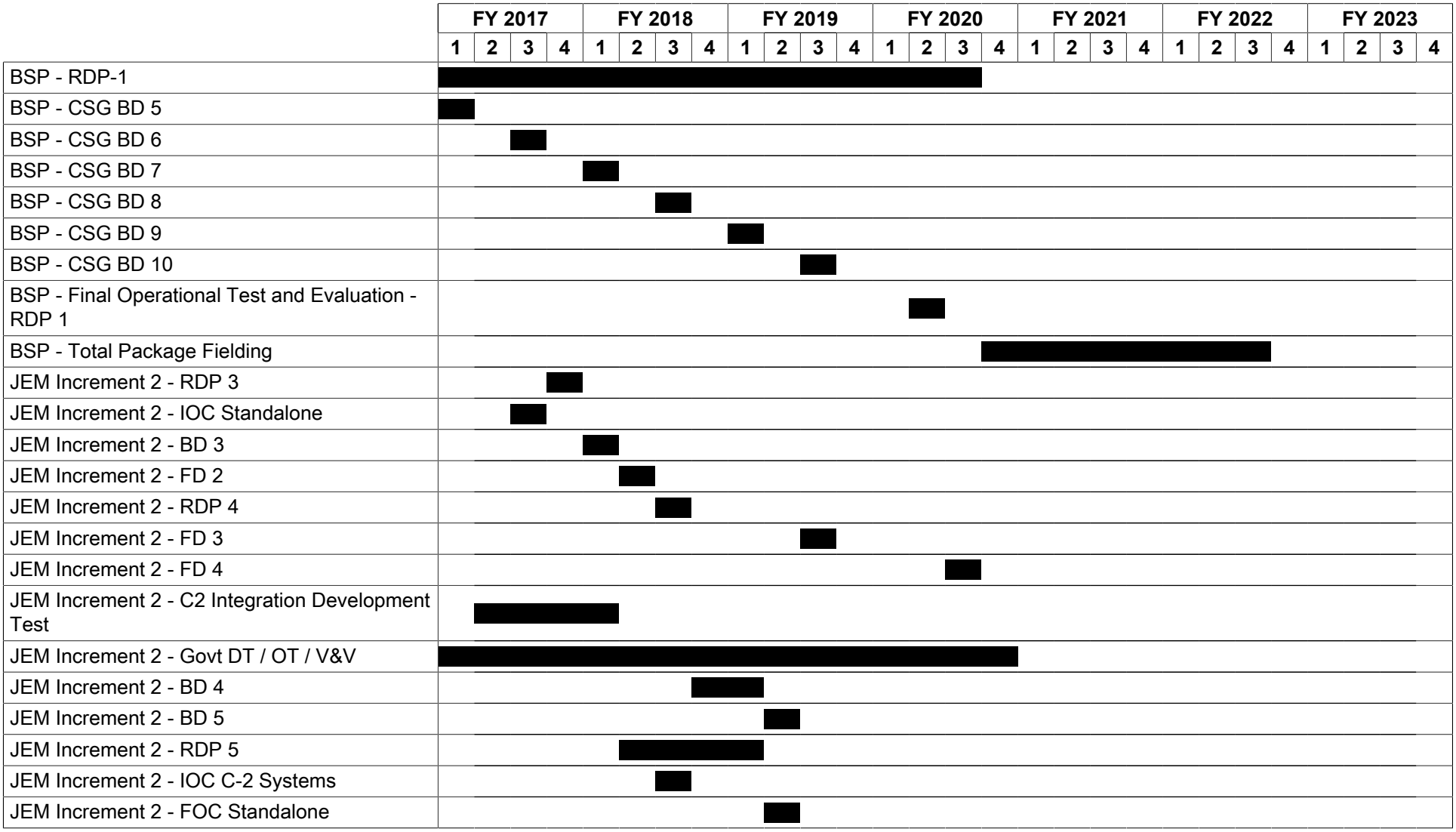

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** IS4 / *INFORMATION SYSTEMS (ACD&P)*

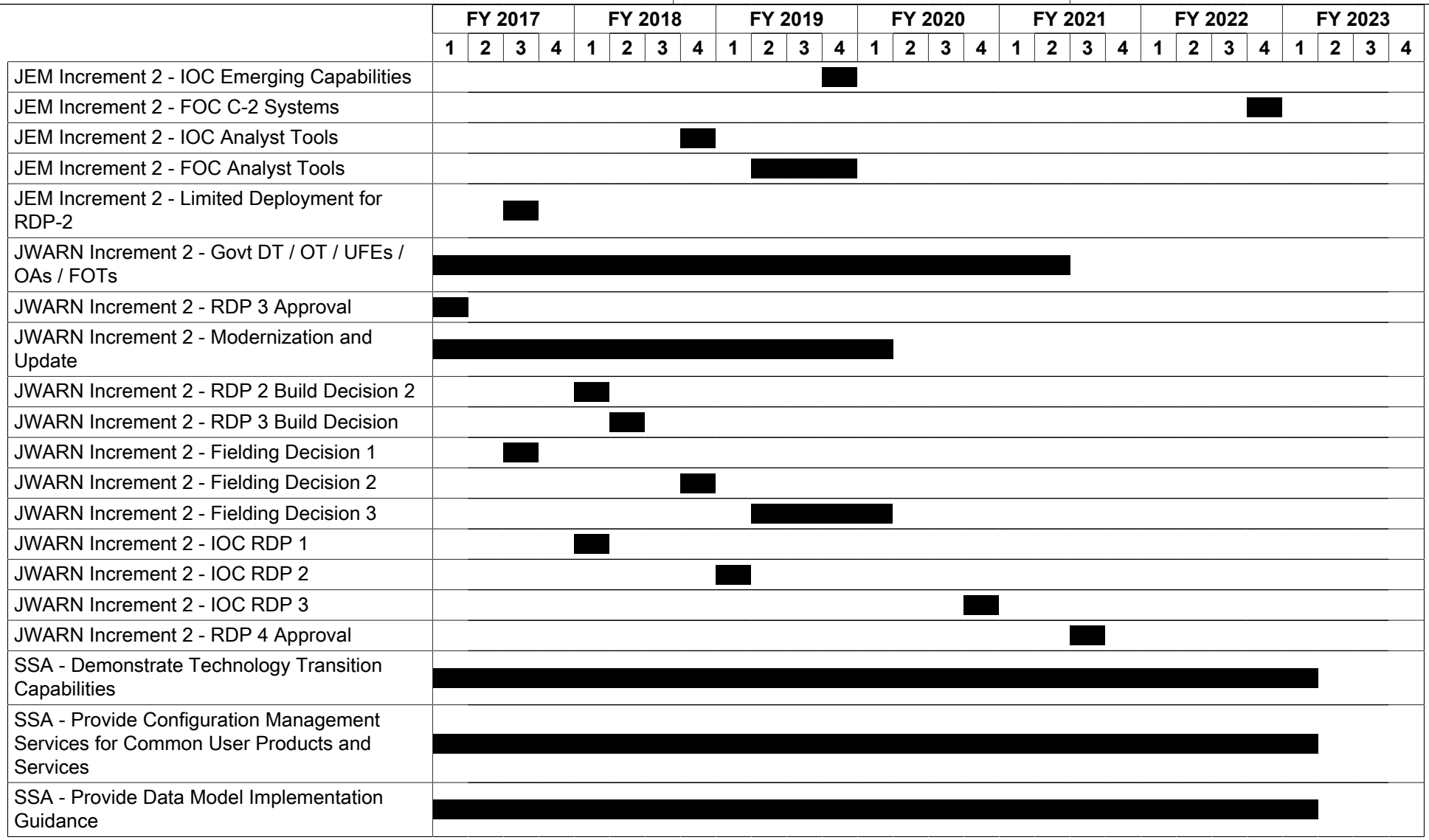

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
BSP - RDP-1	1	2017	3	2020
BSP - CSG BD 5	1	2017	1	2017
BSP - CSG BD 6	3	2017	3	2017
BSP - CSG BD 7	1	2018	1	2018
BSP - CSG BD 8	3	2018	3	2018
BSP - CSG BD 9	1	2019	1	2019
BSP - CSG BD 10	3	2019	3	2019
BSP - Final Operational Test and Evaluation - RDP 1	2	2020	2	2020
BSP - Total Package Fielding	4	2020	3	2022
JEM Increment 2 - RDP 3	4	2017	4	2017
JEM Increment 2 - IOC Standalone	3	2017	3	2017
JEM Increment 2 - BD 3	1	2018	1	2018
JEM Increment 2 - FD 2	2	2018	2	2018
JEM Increment 2 - RDP 4	3	2018	3	2018
JEM Increment 2 - FD 3	3	2019	3	2019
JEM Increment 2 - FD 4	3	2020	3	2020
JEM Increment 2 - C2 Integration Development Test	2	2017	1	2018
JEM Increment 2 - Govt DT / OT / V&V	1	2017	4	2020
JEM Increment 2 - BD 4	4	2018	1	2019
JEM Increment 2 - BD 5	2	2019	2	2019
JEM Increment 2 - RDP 5	2	2018	1	2019
JEM Increment 2 - IOC C-2 Systems	3	2018	3	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JEM Increment 2 - FOC Standalone	2	2019	2	2019
JEM Increment 2 - IOC Emerging Capabilities	4	2019	4	2019
JEM Increment 2 - FOC C-2 Systems	4	2022	4	2022
JEM Increment 2 - IOC Analyst Tools	4	2018	4	2018
JEM Increment 2 - FOC Analyst Tools	2	2019	4	2019
JEM Increment 2 - Limited Deployment for RDP-2	3	2017	3	2017
JWARN Increment 2 - Govt DT / OT / UFEs / OAs / FOTs	1	2017	2	2021
JWARN Increment 2 - RDP 3 Approval	1	2017	1	2017
JWARN Increment 2 - Modernization and Update	1	2017	1	2020
JWARN Increment 2 - RDP 2 Build Decision 2	1	2018	1	2018
JWARN Increment 2 - RDP 3 Build Decision	2	2018	2	2018
JWARN Increment 2 - Fielding Decision 1	3	2017	3	2017
JWARN Increment 2 - Fielding Decision 2	4	2018	4	2018
JWARN Increment 2 - Fielding Decision 3	2	2019	1	2020
JWARN Increment 2 - IOC RDP 1	1	2018	1	2018
JWARN Increment 2 - IOC RDP 2	1	2019	1	2019
JWARN Increment 2 - IOC RDP 3	4	2020	4	2020
JWARN Increment 2 - RDP 4 Approval	3	2021	3	2021
SSA - Demonstrate Technology Transition Capabilities	1	2017	1	2023
SSA - Provide Configuration Management Services for Common User Products and Services	1	2017	1	2023
SSA - Provide Data Model Implementation Guidance	1	2017	1	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program			Date: February 2018
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COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MB4: *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*	-	58.800	83.999	73.090	-	73.090	35.432	26.460	13.317	6.506	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project includes medical countermeasures, development of reagents, assays, diagnostic equipment, biosurveillance and supporting efforts.

This Advanced Component Development and Prototypes (ACD&P) Project supports:

The Medical Countermeasures Platform (MCMPT) effort is focused on applying proven platform technologies to streamline medical countermeasure (MCM) delivery to the Force by reducing developmental risks, accelerating schedule to FDA licensure, and reducing development costs. In addition, this effort will employ platform technologies to support a rapid response capability to novel and emerging threats. A platform is a technology that can counter a variety of threat agents using standardized discovery, design, manufacturing, and testing processes to accelerate MCM delivery to the Force. The first platform being established is the Advanced Development and Manufacturing Antibody Technologies (ADAMANT). Efforts will center on leveraging the DOD's Advanced Development and Manufacturing facility. It is a new start in FY18.

The Department of Defense (DoD) supports the Technology Maturation and Risk Reduction (TMRR) phase for 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 biological warfare (BW) agents. Vaccines have been identified as the most efficient countermeasure against the validated threat of BW weapons.

The Medical Countermeasure BSL-4 GLP Test and Evaluation capability performs T&E and provides the essential data packages to support US Food and Drug Administration approval of leading biodefense medical countermeasure candidates to protect the Warfighter and the Nation. This capability provides dedicated capacity for DoD to conduct biosafety level-4 (BSL-4) Good Laboratory Practice (cGLP) T&E studies to meet programmatic needs following all applicable regulatory, biosurety, and safety standards.

The Countermeasures for Multi-Drug Resistance-Bacterial (CMDR-B) program develops medical countermeasures (MCMs) for Service members for protection against multi-drug resistant (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 NGDS Family of Systems program provides Chemical, Biological and Radiological (CBR) threat and infectious disease diagnostic capabilities across several echelons of care, as well as for environmental sample analysis as part of the Common Analytical Laboratory System (CALS). The NGDS Increment 1 provides an U.S. Food and Drug Administration (FDA)-cleared reusable, portable biological pathogen diagnostic system to Army, Air Force and Navy deployable Combat Health Support units, to support near real-time patient treatment decision making, force health protection decision making and CBRN situational awareness. NGDS Increment

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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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.

The Filovirus Vaccine (VAC FILO) Program develops vaccines that will offer protection against the threat of Ebola and Marburg viruses. The program office is prioritizing the development and delivery of a licensed Marburg vaccine while working with Science & Technology to further develop Ebola vaccine candidates to meet the DoD requirement. The current budget supports development of multiple Marburg prototypes to protect against the BW threat through TMRR phase. The DoD anticipates that the Food and Drug Administration (FDA) will approve a vaccine using the Animal Rule, which allows for the demonstration of efficacy in a relevant animal model(s).

The Next Generation Anthrax Vaccine (NGA) program seeks to provide a more robust vaccine for Anthrax, which is a validated bioweapon threat to the Force. The current anthrax vaccine dose schedule requires multiple doses to be fully protective. Health and Human Services is developing a next generation vaccine for post exposure to anthrax. The DoD is seeking to leverage HHS development efforts and initiate preliminary assay development and qualification studies to extend the label to include pre exposure. This effort could potentially lead to an improved dosing schedule for the next generation anthrax vaccine.

The Ricin toxin is a validated bioweapon threat that is lethal, available and easily produced. The Ricin vaccine program (VAC Ricin) supports one DoD vaccine candidate including manufacturing cGMP lots; and the continuation of animal model and assay development studies. The Ricin Vaccine will protect the Warfighter against aerosolized exposure to ricin toxin.

The Western, Eastern, and Venezuelan Equine Encephalitis (VAC WEVEE) Vaccine program initiated competitive prototypes in FY13 to reduce program risk, and is developing multiple prototypes through the Technology Development Phase. The Western, Eastern, and Venezuelan Equine Encephalitis (VAC WEVEE) Vaccine will protect the Warfighter against aerosolized exposure to three strains of alphaviruses; western, eastern and Venezuelan equine encephalitis viruses. Services have prioritized the development and delivery of a licensed Venezuelan Equine Encephalitis (VEE) vaccine. In FY19 the VAC WEVEE program will shift to the VAC VEE program.

The Antiviral Therapeutic Program (AV TX) will develop and deliver FDA approved antiviral therapeutics for the warfighter. Drug products will be developed targeting the pathogens on the biological warfare threat lists, such as Ebola. This includes viruses of interest from the following families: Filoviridae, Alphaviridae, Arenaviridae, Bunyaviridae, and Flaviviridae. 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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: 1) MCMPT	-	0.500	5.477
Description: ADAMANT Rapid Response			
FY 2018 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Initiate development of standardized design capabilities to support a rapid response. ***FY 2019 Plans:*** Continue and ramp up development of standardized design capabilities to support a rapid response. Initiate refinement of the ADAMANT manufacturing process to support a rapid response capability. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to accelerated development effort.			
Title: 2) MCMPT ***Description:*** ADAMANT BOT A/B ***FY 2019 Plans:*** Initiate Phase 1 clinical trial of ADAMANT BOT A/B to test the intramuscular route of administration and the lypho formulation. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to accelerated development effort.	-	-	3.436
Title: 3) MCMPT ***Description:*** ADAMANT MCM (Optimization Phase) ***FY 2019 Plans:*** Initiate optimization of ADAMANT. Efforts will involve the antigen target identification against a known threat, generation of cell banking, and initiating engineering manufacturing efforts to support delivery of a product MCM. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to accelerated development effort.	-	-	4.601
Title: 4) MCMPT ***Description:*** Vaccine Platform ***FY 2019 Plans:*** Initiate manufacturing efforts for the vaccine platform capability (platform #2). ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to accelerated development effort.	-	-	2.398
Title: 5) MCMPT	-	-	3.482

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Description: Program Management ***FY 2019 Plans:*** Continue to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to accelerated development effort.			
Title: 6) BSL-4 GLP T&E ***Description:*** Clinical Studies ***FY 2018 Plans:*** Conduct two GLP BSL-4 T&E medical countermeasure non-human primate studies in a safe and secure environment, implement laboratory draw-down and transition to new facility, continue to provide strategic planning, program management, and scheduling for GLP BSL-4 T&E capability. ***FY 2019 Plans:*** Conduct two GLP BSL-4 T&E medical countermeasure non-human primate studies in a safe and secure environment, implement laboratory draw-down and transition to new facility, continue to provide strategic planning, program management, and scheduling for GLP BSL-4 T&E capability. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters.	5.444	5.885	7.121
Title: 7) CMDR-B ***Description:*** Medical Countermeasures	2.230	-	-
Title: 8) CMDR-B ***Description:*** Manufacture of Developmental Drug Product ***FY 2018 Plans:*** Complete the manufacture of developmental drug product that will support a Pre-EUA Package for Y. Pestis. ***FY 2018 to FY 2019 Increase/Decrease Statement:***	0.800	5.162	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Decrease due to fact of life change in the program/project.			
Title: 9) CMDR-B ***Description:*** Anti-Bacterial Therapeutics ***FY 2018 Plans:*** Award anti-bacterial therapeutics prototype proposals under the JPM MCS OTA Consortium. ***FY 2019 Plans:*** Execute anti-bacterial therapeutics prototype proposals under the JPM MCS OTA Consortium. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to fact of life change in the program/project.	-	3.163	8.291
Title: 10) NGDS 2 ***Description:*** Chemical Diagnostic System ***FY 2019 Plans:*** Continue to develop and mature prototypes for Chemical agent diagnostics. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	-	-	6.504
Title: 11) NGDS 2 ***Description:*** Immunoassay Diagnostics ***FY 2019 Plans:*** Initiate prototyping for immunoassay diagnostic capability. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	-	-	2.000
Title: 12) NGDS 2 ***Description:*** Chemical Diagnostics ***FY 2018 Plans:***	-	4.950	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Develop and mature prototypes for Chemical Agent Diagnostics. Develop and mature single-use, disposable assays for BW targets. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.			
Title: 13) NGDS 2 ***Description:*** Program Management ***FY 2019 Plans:*** Continue strategic/tactical planning, Government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, regulatory and technical support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	-	-	4.380
Title: 14) AV TX ***Description:*** Gilead Filo Candidate ***FY 2018 Plans:*** Initiate dose ranging and additional efficacy studies in non-human primates (NHPs) for the treatment of Filovirus infections. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	19.496	13.077	-
Title: 15) AV TX ***Description:*** Enabling Technology ***FY 2018 Plans:*** Continue studies to identify biomarkers in NHPs exposed to Alpha viruses, and demonstration of relevance of the NHP model. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	1.740	2.756	-
Title: 16) AV TX ***Description:*** Enabling Technology ***FY 2018 Plans:***	1.942	2.213	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Continue refinement of the marmoset model for inhalational Filovirus infections and testing of medical countermeasures (MCM) against infections. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.			
Title: 17) AV TX ***Description:*** Enabling Technology ***FY 2018 Plans:*** Continue pipeline drug screening to identify new candidates and accelerate product development in non-human primates. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	6.716	7.697	-
Title: 18) VAC FILO ***Description:*** Assay Development, Nonclinical Efficacy, and Safety ***FY 2018 Plans:*** Continue clinical and nonclinical immunological testing to establish a correlate of protection for each Marburg vaccine prototype. ***FY 2019 Plans:*** Continue clinical and nonclinical immunological testing to establish a correlate of protection for each Marburg vaccine prototype. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	1.908	4.646	4.800
Title: 19) VAC FILO ***Description:*** Manufacturing ***FY 2018 Plans:*** Optimize manufacturing processes for each Marburg vaccine prototype. Continue stability testing. ***FY 2019 Plans:*** On going optimization of manufacturing processes for each Marburg vaccine prototype. Continue stability testing. ***FY 2018 to FY 2019 Increase/Decrease Statement:***	3.518	5.600	2.200

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Decrease due to change in program/project technical parameters.			
Title: 20) VAC FILO ***Description:*** Clinical Trials ***FY 2018 Plans:*** Continue Phase 1 clinical trials for each Marburg vaccine prototype. ***FY 2019 Plans:*** Continue Phase 1 clinical trial for Marburg vaccine prototype; including the development of EBOLA vaccine candidates that meet the DoD requirement. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase due to change in program/project technical parameters.	2.500	5.000	10.600
Title: 21) VAC FILO ***Description:*** Program Management ***FY 2018 Plans:*** Continue to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2019 Plans:*** Continue to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	1.000	2.500	2.800
Title: 22) VAC NGA ***Description:*** NonClinical ***FY 2018 Plans:*** Extend the label to pre-exposure to anthrax ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	-	1.282	-
Title: 23) VAC RIC	1.149	0.495	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Description: Development Activities ***FY 2018 Plans:*** Complete stability testing of GMP material which began in 2014 at University of Nebraska Lincoln and USAMRIID. Finish manufacturing technology transfer to the ADM capability. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project is entering completion and all activities will be closed.			
Title: 24) VAC VEE ***Description:*** Clinical Trials ***FY 2019 Plans:*** Continue Phase I Clinical Trials for competitive prototypes that were initiated under the WEVEE VAC program. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	-	-	3.800
Title: 25) VAC VEE ***Description:*** Program Management ***FY 2019 Plans:*** Initiate strategic/tactical planning, Government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, regulatory and technical support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Minor change due to routine program adjustments.	-	-	1.200
Title: 26) VAC WEVEE ***Description:*** NonClinical ***FY 2018 Plans:*** Complete non-clinical safety, efficacy and IND-enabling studies for competitive prototypes. Continue Phase 1 Clinical Trail for the VLP vaccine prototype. Tech transfer manufacturing process for VLP vaccine candidate to the DOD ADM. ***FY 2018 to FY 2019 Increase/Decrease Statement:***	2.994	4.911	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Program/project funding transferred to another funding line.			
Title: 27) VAC WEVEE ***Description:*** Manufacturing ***FY 2018 Plans:*** Continue Phase 1 Clinical Trial for Virus Replicon Particle (VRP) candidate. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	2.973	5.182	-
Title: 28) VAC WEVEE ***Description:*** Clinical Trials ***FY 2018 Plans:*** Continue Phase 1 Clinical Trials for competitive prototypes. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	2.000	6.500	-
Title: 29) VAC WEVEE ***Description:*** Program Management ***FY 2018 Plans:*** Continue strategic/tactical planning, Government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, regulatory and technical support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	2.390	2.480	-
Accomplishments/Planned Programs Subtotals	58.800	83.999	73.090

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• MB5: *MEDICAL BIOLOGICAL DEFENSE (EMD)*	92.313	136.553	107.815	-	107.815	141.385	170.160	154.262	153.288	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program			Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	6.999	11.950	9.850	-	9.850	3.728	6.060	6.532	2.969	Continuing	Continuing
• JM2222: *BIOSCAVENGER (BSCAV)*	0.000	0.000	0.000	-	0.000	0.000	0.000	3.943	3.943	Continuing	Continuing
• JM6677: *ADVANCED ANTICONVULSANT SYSTEM (AAS)*	0.000	0.000	0.360	-	0.360	0.360	2.700	2.700	4.000	Continuing	Continuing
• JM8788: *NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)*	5.095	6.938	5.842	-	5.842	2.919	4.826	2.644	4.704	Continuing	Continuing
• JX0005: *DOD BIOLOGICAL VACCINE PROCUREMENT (VACCINES)*	0.185	0.183	0.183	-	0.183	0.183	0.182	0.182	0.182	Continuing	Continuing
• JX0210: *DEFENSE BIOLOGICAL PRODUCTS ASSURANCE PROGRAM (DBPAP)*	1.005	0.995	0.975	-	0.975	0.972	0.874	0.788	0.764	Continuing	Continuing
• JX0300: *BIOSURVEILLANCE (BSV)*	2.600	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.600

Remarks

D. Acquisition Strategy

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. BA5 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. The early stage efforts (BA4) are to develop standardized design capabilities to support a rapid response. Once established, future programs will be able to leverage this capability for the development of specific medical countermeasures. It is anticipated that these efforts will leverage the Other Transactions Authority through the medical OTA consortium.

BSL4 GOOD LABORATORY PRACTICES TEST & EVALUATION (BSL4 GLP T&E)

The Medical Countermeasure Systems (MCM) BSL-4 T&E capability continues to utilize and maintain a testing capability at the existing and planned new US Army Medical Research Institute of Infectious Diseases (USAMRIID) facilities. MCM BSL-4 T&E costs support testing of MCMs against threats that require high-level

containment using non-human primates. The period of FY18 and beyond will focus on transition of the capability to the new USAMRIID facility, after which Full Operational Capability (FOC) will be reached.

COUNTERMEASURES FOR DRUG RESISTANT BACTERIA (CMDR-B)

The CMDR-B Program develops MCMs for MDR (multi-drug resistant) bacteria, including BWAs and organisms that are genetically modified to be MDR and resulting bio-toxins. To meet the requirement to prevent or minimize the effects from MDR Bacterial exposures, the CMDR-B program will follow an integrated product development process and undergo independent regulatory affairs processes to achieve an FDA approved drug. The CMDR-B program is establishing collaborative relationships with DoD, other USG entities, and commercial partners in order to populate the MDR pipeline which will help reduce program risk, potentially lower program cost, and accelerate delivery of MCMs to the Warfighter. Leveraging collaborative Department of Defense (DoD), United States Government, and industry efforts will reduce program risk, lower program cost, and accelerate the delivery of therapeutics to the Warfighter. The program has established a translational team with the Joint Science and Technology Office for animal model work and pipeline candidates that could transition to CMDR-B for Advanced Development. The CMDR-B program also has a partnership with DHHS/BARDA to manufacture developmental drug product that will support an Interim Fielding Capability for a plague therapeutic for post-exposure protection and treatment. The CMDR-B program intends to have a Milestone B Decision Review in 1QFY19. Results from the program investment in Non-Human Primate Pivotal efficacy testing, conducted in TMRR phase, in FY17 may result in Technical Readiness Level (TRL) 8 mature candidates being ready for further development.

NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)

The NGDS program was a MS A to MS C - Limited Deployment acquisition strategy, with MS C approval granted in Dec 2016 for limited production and fielding. NGDS 1 will replace the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17.

The NGDS 2 program addresses CBR agents and concepts of employment (COEs) that the NGDS 1 Film Array does not address. More than one materiel solution is required to expand the scope of CBR agent diagnostics across multiple echelons of care. 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 initiated prototyping of a man-portable diagnostic capability in FY17, while continuing to conduct risk reduction efforts for the other capabilities. 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 anticipated to be cost-plus awards under the medical Other Transactions Authority (OTA), to take advantage of non-traditional Defense contractor offerings.

ANTI-VIRAL THERAPEUTICS (AV TX)

The acquisition strategy combined the Hemorrhagic Fever Virus (HFV) and Emerging Infectious Diseases Therapeutics (EID TX) Program efforts beginning in FY17, into a single program to develop and deliver FDA approved antiviral countermeasures. Independent market research conducted in FY15 identified multiple candidates appropriate for advanced development at varying stages of maturity. A source selection was conducted targeting award in FY16. The candidate selected for entry into the EMD phase of development will be executed under the Antiviral Therapeutic program in FY17. The candidate selected for entry into the TMRR phase will

be deferred for award until FY17 when BA4 funding is available to the program. The overall regulatory approach of the program remains to pursue development of a products to FDA approval under the Animal Rule. The program will conduct human clinical safety studies, pilot and pivotal animal efficacy, and toxicology studies, required for FDA approval. The performers will submit New Drug Applications/Biologic License Agreements for the therapeutics during the EMD Phase.

FILOVIRUS (VAC FILO)

The Filovirus Vaccine Program acquisition strategy supports the development of multiple vaccines through the Technology Maturation and Risk Reduction (TMRR) phase that will offer protection against the threat of Ebola and Marburg viruses. During this phase a manufacturing process is developed. This process will be used to produce current Good Manufacturing Practices (cGMP) lots suitable for Phase 1 clinical trials. In addition, animal safety and efficacy studies will be conducted to support an Investigational New Drug (IND) submission to the FDA and conduct Phase 1 clinical trials. These efforts will support a MS B decision and entry into the Engineering, Manufacturing, and Development (EMD) phase. At Milestone B (MS B), the best Marburg vaccine prototype will be selected through a full and open competition to transition to the Engineering and Manufacturing Development (EMD) phase with the delivery of an FDA licensed Marburg vaccine. It is anticipated that the EMD phase contract will be a mix of Cost Plus and Fixed Price. In addition, the program office may leverage the Advanced Development and Manufacturing capability, and other DoD agencies and laboratories to include the United States Army Medical Research Institute of Infectious Diseases (USAMRIID). Following a successful MS B, the program will conduct manufacturing qualification/validation, expanded clinical and nonclinical testing, and assay qualification and validation efforts. These efforts will support the Biological Licensure Application (BLA) submission to the Food and Drug Administration (FDA) and licensure of a Marburg vaccine.

NEXT GENERATION ANTHRAX VACCINE (VAC NGA)

The Next Generation Anthrax vaccine program strategy supports the development and qualification of immunological assays and required reference materials to support potential future anthrax vaccine programs. Once qualified, these assays will provide the DOD with data to support future decisions related to the anthrax pre-exposure vaccine program.

RICIN VACCINE (VAC RIC)

The Ricin Vaccine Program acquisition strategy supports the development of a single vaccine through the Technology Maturation and Risk Reduction (TMRR) phase that will offer protection against the threat of aerosolized ricin toxin. The Government will serve as the integrator during the TMRR phase by managing and coordinating the various vaccine development efforts. Additionally, the Program Office will partner with DoD agencies and laboratories to include U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).

VENEZUELAN EQUINE ENCEPHALITIS VACCINE (VAC VEE)

The VEE acquisition strategy uses a parallel evaluation of Virus Replicon Particle (VRP) and Virus Like Particle (VLP) vaccine prototypes through a Phase 1 clinical trials to achieve competitive prototyping in the Technology Development phase. Several potential decision points will be used to assess the prototypes for possible down select. The schedule is based on a down select to one prototype. The Government will serve as the integrator during this phase by managing and coordinating the

various vaccine development efforts. At MS B, the best prototype will be selected through a full and open competition to transition to the Engineering and Manufacturing Development (EMD) phase, with delivery of a FDA-licensed WEVEE vaccine. The development efforts will be a Cost Plus and Firm Fixed Price CLINs. Additionally, the Program Office will partner with Health and Human Services/National Institute of Allergies and Infectious Diseases (HHS/NIAID), DoD agencies, and laboratories to include U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID). This DoD program is the Public Health Emergency Medical Countermeasures lead for the advanced development of this vaccine and is leveraging expertise across the Federal and International sectors to ensure programmatic success.

WESTERN EASTERN VENEZUELAN EQUINE ENCEPH VACCINE (VAC WEVEE)

The Western, Eastern, and Venezuelan Equine Encephalitis (VAC WEVEE) Vaccine program initiated competitive prototypes in FY13 to reduce program risk, and is developing multiple prototypes through the Technology Development Phase. The Western, Eastern, and Venezuelan Equine Encephalitis (VAC WEVEE) Vaccine will protect the Warfighter against aerosolized exposure to three strains of alphaviruses; western, eastern and Venezuelan equine encephalitis viruses. Services have prioritized the development and delivery of a licensed Venezuelan Equine Encephalitis (VEE) vaccine. In FY19 the VAC WEVEE program will shift to the VAC VEE program.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCMPT - HW S - Rapid Response	C/CPFF	TBD : TBD	0.000	0.000		0.450	Jan 2018	4.980	Dec 2018	-		4.980	Continuing	Continuing	0.000
MCMPT - HW S - Vaccine Platform Manufacturing Efforts	C/CPFF	TBD : TBD	0.000	0.000		0.000		2.180	Dec 2018	-		2.180	Continuing	Continuing	0.000
MCMPT - HW S - ADAMANT MCM Manufacturing	C/CPFF	TBD : TBD	0.000	0.000		0.000		4.183	Dec 2018	-		4.183	Continuing	Continuing	0.000
CMDR-B - Advanced Development Contract	C/CPIF	TBD : TBD	0.000	0.000		0.000		5.537	Jan 2019	-		5.537	Continuing	Continuing	0.000
CMDR-B - Advanced Development Contract 1	C/CPIF	Glaxo Smith Kline : Columbia, MD	2.700	2.830	May 2017	6.407	Feb 2018	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - HW C - NGDS 2 Immunoassay Diagnostic Prototyping	Various	TBD : TBD	0.000	0.000		0.000		2.000	Dec 2018	-		2.000	Continuing	Continuing	0.000
NGDS - HW C - NGDS 2 Develop and mature prototypes for Chemical Agent Diagnostics	Various	TBD : TBD	0.000	0.000		4.950	Mar 2018	6.504	Dec 2018	-		6.504	Continuing	Continuing	0.000
AV TX - Gilead Filo Candidate - Pilot Aerosol Animal Efficacy Studies	C/FP	Gilead Sciences : San Francisco, CA	0.000	15.044	Dec 2016	10.062	Mar 2018	0.000		-		0.000	Continuing	Continuing	0.000
AV TX - Enabling Technologies - Manufacturing Process Optimization and Scale Up	C/CPIF	University of Pittsburgh : Pittsburgh, PA	0.000	1.335	Dec 2016	2.120	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
AV TX - Enabling Technologies - Phase 1 Safety Trials	C/CPIF	Defense Science & Technology Lab (DSTL) : Salisbury Wiltshire, UK	0.000	1.490	May 2017	1.703	Mar 2018	0.000		-		0.000	Continuing	Continuing	0.000
AV TX - Enabling Technologies - Non Human Primate Animal Model Enhancement	MIPR	US Army Medical Research Institute of Infectious Disease	0.000	5.015	Feb 2017	5.923	Mar 2018	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		(USAMRIID) : Fort Detrick, MD													
VAC FILO - HW S - Non Clinical Studies	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	17.630	1.908	Dec 2016	4.114	Dec 2017	4.800	Dec 2018	-		4.800	Continuing	Continuing	0.000
VAC FILO - SW GFPR - Manufacturing Multiple Prototypes	C/CPFF	Various : Various	12.854	0.000		3.200	Dec 2017	2.200	Dec 2018	-		2.200	Continuing	Continuing	0.000
VAC RIC - SW GFPR - Manufacturing Tech Transfer, animal model & assay development	Various	Various : Various	1.700	0.256	Mar 2017	0.240	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
VAC VEE - Prototypes Phase 1 Clinical Trials	C/CPIF	Various : Various	0.000	0.000		0.000		3.800	Dec 2018	-		3.800	Continuing	Continuing	0.000
VAC WEVEE - HW S - Manufacturing and Process Development	MIPR	National Institute of Allergy & Infectious Diseases : Bethesda, MD	19.957	2.439	Dec 2016	0.090	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
VAC WEVEE - HW S - Manufacturing and Process Development #2	MIPR	Battelle Memorial Institute : Columbus, OH	3.730	1.000	Dec 2016	5.820	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	58.571	31.317		45.079		36.184		-		36.184	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
VAC FILO - ES S - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	3.028	0.350	Dec 2016	0.160	Dec 2017	0.040	Dec 2018	-		0.040	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
VAC RIC - ES S - Regulatory Integration	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	0.442	0.090	Dec 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC WEVEE - ES S - Regulatory Integration	MIPR	National Institute of Allergy & Infectious Diseases : Bethesda, MD	2.978	0.150	Dec 2016	0.600	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
VAC WEVEE - ES S - Regulatory Integration #2	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	0.293	0.150	Dec 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	6.741	0.740		0.760		0.040		-		0.040	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCMPT - DTE S - ADAMANT BOT A/B Phase 1 Clinical Trial	C/CPFF	TBD : TBD	0.000	0.000		0.000		3.124	Dec 2018	-		3.124	Continuing	Continuing	0.000
BSL4 GLP T&E - DTE SB - T&E Facility	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	17.749	5.444	Dec 2016	5.885	Dec 2017	7.121	Dec 2018	-		7.121	Continuing	Continuing	0.000
VAC FILO - OTHT SB - Testing, Evaluation, and Clinical Trials	C/CPFF	Battelle Memorial Institute : Columbus, OH	37.317	3.300	Dec 2016	5.424	Dec 2017	6.400	Dec 2018	-		6.400	Continuing	Continuing	0.000
VAC FILO - OTE C - Assay Development Prototype 1	C/CPIF	Various : Various	10.649	2.000	Dec 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
VAC FILO - OTE C - Assay Development Prototype 2	C/CPIF	Various : Various	8.056	0.368	Mar 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - OTHT SB - Testing, Evaluation, and Clinical Trials#2, #3	C/CPIF	Various : Various	1.650	0.000		3.437	Dec 2017	4.200	Dec 2018	-		4.200	Continuing	Continuing	0.000
VAC NGA - DTE C - Non-Clinical Testing	C/CPFF	TBD : TBD	0.000	0.000		1.000	Jan 2018	0.000		-		0.000	Continuing	Continuing	0.000
VAC RIC - OTHT C - Stability Testing	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	1.450	0.803	Dec 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC RIC - OTHT C - Stability Testing #2	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	1.901	0.000		0.255	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
VAC WEVEE - OTE C - Test and Evaluation Assay Development	MIPR	Battelle Memorial Institute : Columbus, OH	11.787	4.500	Dec 2016	6.000	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
VAC WEVEE - OTE C - Clinical Trial (Prototype)	MIPR	Various : Various	3.070	0.000		4.000	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	93.629	16.415		26.001		20.845		-		20.845	Continuing	Continuing	N/A

Remarks

A contractual mechanism to access the ADM capability is pending for FY17.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCMPT - PM/MS S - Management	Allot	JPM Medical Countermeasure	0.000	0.000		0.050	Jan 2018	2.135	Dec 2018	-		2.135	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Systems (JPM MCS) : Fort Detrick, MD													
MCMPT - PM/MS C Program Management	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		2.792	Dec 2018	-		2.792	Continuing	Continuing	0.000
CMDR-B - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.215	0.000		0.441	Jan 2018	1.244	Jan 2019	-		1.244	Continuing	Continuing	0.000
CMDR-B - PM/MS SB - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.392	0.200	Jan 2017	0.218	Jan 2018	0.236	Jan 2019	-		0.236	Continuing	Continuing	0.000
CMDR-B - PM/MS SB - Management Support #3	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.082	0.000		0.563	Jan 2018	0.746	Jan 2019	-		0.746	Continuing	Continuing	0.000
CMDR-B - PM/MS SB - Contractor Systems Engineering/ Program Management Support	C/FP	Various : Various	0.323	0.000		0.696	Jan 2018	0.528	Jan 2019	-		0.528	Continuing	Continuing	0.000
NGDS - PM/MS SB - Product Management Systems Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	2.650	0.000		0.000		1.159	Dec 2018	-		1.159	Continuing	Continuing	0.000
NGDS - PM/MS S - Product Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.933	Dec 2018	-		1.933	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS - PM/MS S - Product Management Support #2	MIPR	Various : Various	1.000	0.000		0.000		1.288	Dec 2018	-		1.288	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	3.482	Jan 2017	1.365	Jan 2018	0.000		-		0.000	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	1.174	Jan 2017	1.742	Jan 2018	0.000		-		0.000	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Management Support #3	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.000	0.972	Jan 2017	0.676	Jan 2018	0.000		-		0.000	Continuing	Continuing	0.000
AV TX - PM/MS - SB Management Support	C/FP	Various : Various	0.000	1.382	Jan 2017	2.152	Jan 2018	0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - PM/MS - Joint Vaccine Acquisition Program Management	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	3.390	1.000	Dec 2016	1.411	Dec 2017	2.760	Dec 2018	-		2.760	Continuing	Continuing	0.000
VAC NGA - PM/MS SB - Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.282	Nov 2017	0.000		-		0.000	Continuing	Continuing	0.000
VAC VEE - PM/MS S - Program Manager Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.200	Dec 2018	-		1.200	Continuing	Continuing	0.000
VAC WEVEE - PM/MS S - Program Manager Support	Allot	JPM Medical Countermeasure	2.661	1.000	Dec 2016	2.000	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	Project (Number/Name) MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Systems (JPM MCS) : Fort Detrick, MD													
VAC WEVEE - PM/MS C - Contractor Systems Engineering Program Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	2.837	1.118	Dec 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC WEVEE - PM/MS S - Joint Vaccine Acquisition Program Management	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.454	0.000		0.563	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	15.004	10.328		12.159		16.021		-		16.021	Continuing	Continuing	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	173.945	58.800		83.999		73.090		-		73.090	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

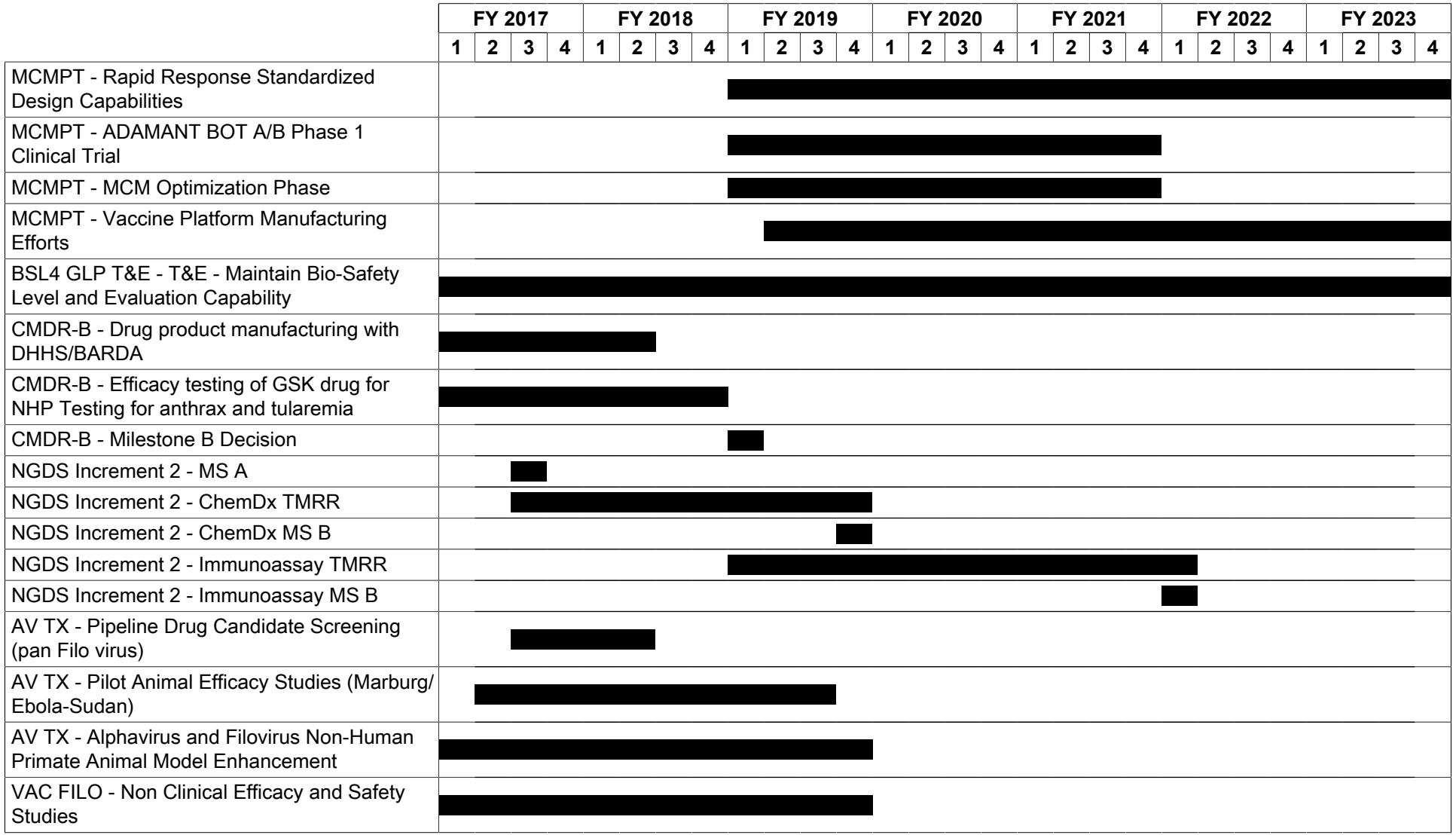

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

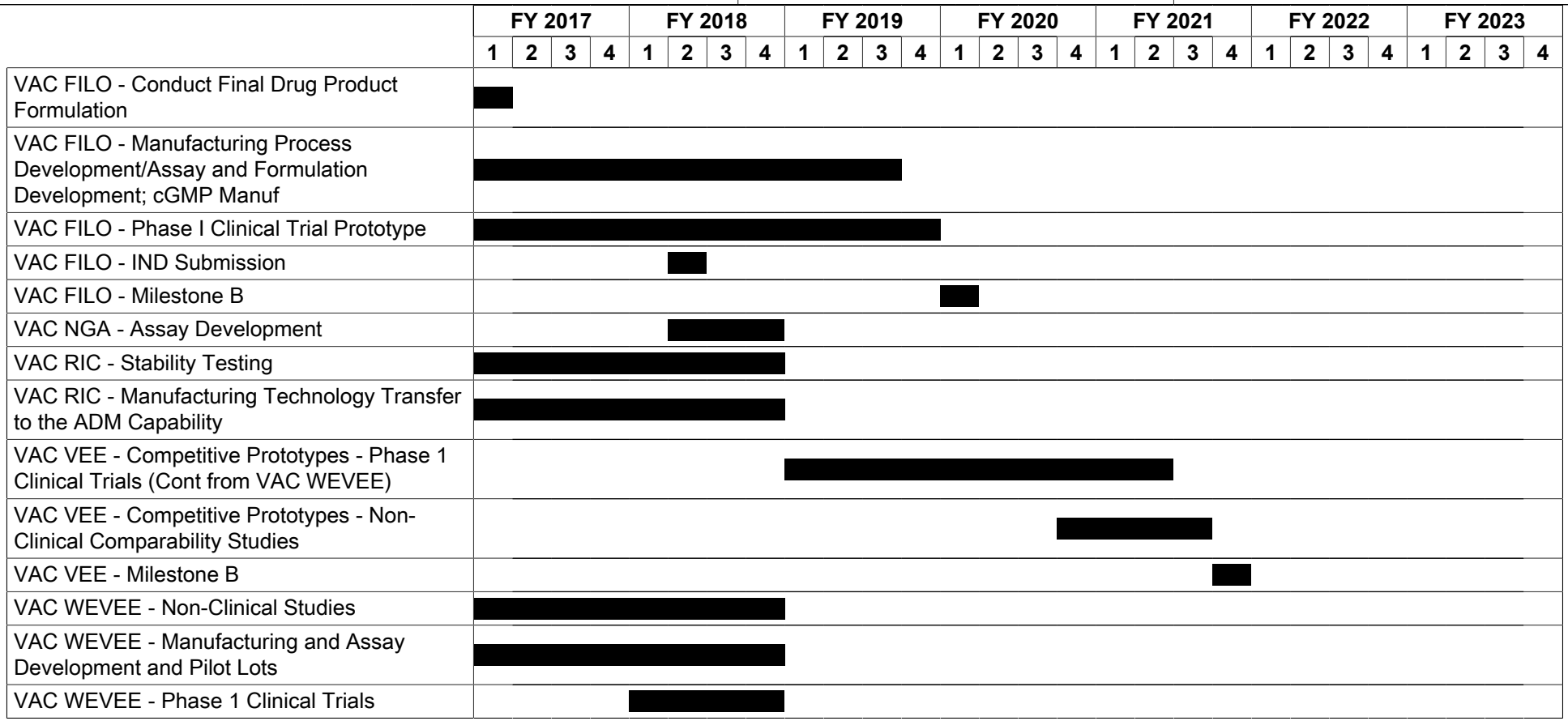

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MCMPT - Rapid Response Standardized Design Capabilities	1	2019	4	2023
MCMPT - ADAMANT BOT A/B Phase 1 Clinical Trial	1	2019	4	2021
MCMPT - MCM Optimization Phase	1	2019	4	2021
MCMPT - Vaccine Platform Manufacturing Efforts	2	2019	4	2023
BSL4 GLP T&E - T&E - Maintain Bio-Safety Level and Evaluation Capability	1	2017	4	2023
CMDR-B - Drug product manufacturing with DHHS/BARDA	1	2017	2	2018
CMDR-B - Efficacy testing of GSK drug for NHP Testing for anthrax and tularemia	1	2017	4	2018
CMDR-B - Milestone B Decision	1	2019	1	2019
NGDS Increment 2 - MS A	3	2017	3	2017
NGDS Increment 2 - ChemDx TMRR	3	2017	4	2019
NGDS Increment 2 - ChemDx MS B	4	2019	4	2019
NGDS Increment 2 - Immunoassay TMRR	1	2019	1	2022
NGDS Increment 2 - Immunoassay MS B	1	2022	1	2022
AV TX - Pipeline Drug Candidate Screening (pan Filo virus)	3	2017	2	2018
AV TX - Pilot Animal Efficacy Studies (Marburg/Ebola-Sudan)	2	2017	3	2019
AV TX - Alphavirus and Filovirus Non-Human Primate Animal Model Enhancement	1	2017	4	2019
VAC FILO - Non Clinical Efficacy and Safety Studies	1	2017	4	2019
VAC FILO - Conduct Final Drug Product Formulation	1	2017	1	2017
VAC FILO - Manufacturing Process Development/Assay and Formulation Development; cGMP Manuf	1	2017	3	2019
VAC FILO - Phase I Clinical Trial Prototype	1	2017	4	2019
VAC FILO - IND Submission	2	2018	2	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** MB4 / *MEDICAL BIOLOGICAL DEFENSE (ACD&P)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
VAC FILO - Milestone B	1	2020	1	2020
VAC NGA - Assay Development	2	2018	4	2018
VAC RIC - Stability Testing	1	2017	4	2018
VAC RIC - Manufacturing Technology Transfer to the ADM Capability	1	2017	4	2018
VAC VEE - Competitive Prototypes - Phase 1 Clinical Trials (Cont from VAC WEVEE)	1	2019	2	2021
VAC VEE - Competitive Prototypes - Non-Clinical Comparability Studies	4	2020	3	2021
VAC VEE - Milestone B	4	2021	4	2021
VAC WEVEE - Non-Clinical Studies	1	2017	4	2018
VAC WEVEE - Manufacturing and Assay Development and Pilot Lots	1	2017	4	2018
VAC WEVEE - Phase 1 Clinical Trials	1	2018	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program			Date: February 2018
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	Project (Number/Name) MC4 / *MEDICAL CHEMICAL DEFENSE (ACD&P)*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
MC4: *MEDICAL CHEMICAL DEFENSE (ACD&P)*	-	4.816	5.165	2.790	-	2.790	4.675	3.975	7.098	7.098	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for the development of medical materiel and other medical equipment items necessary for the Technology Maturation and Risk Reduction phase of the acquisition life cycle for the advanced development of Medical Countermeasures (MCMs) for chemical warfare agents including diagnostic equipment, prophylactic, pre-treatment, and therapeutic drugs, and individual/casualty decontamination compounds. A family-of-systems approach for medical defense against chemical warfare agents is required to provide protection, to sustain performance in a chemical environment, and to provide for self-aid/buddy-aid and medical treatment of chemical casualties. Fielding of prophylactic, pre-treatment, and therapeutic drugs and medical devices requires Food and Drug Administration (FDA) approval. Given the family-of-systems approach for development of chemical MCMs for the treatment of nerve agent intoxication, multiple long-term studies are required to obtain FDA approval to deliver products that effectively integrate with current and projected therapeutic regimens. Efficacy testing of most candidate drugs against chemical warfare agents cannot be conducted in humans; therefore, animal surrogate models must be developed and employed. The program currently includes: (1) Emerging Threats and (2), the Improved Nerve Agent Treatment System (INATS) an enhanced nerve agent treatment regimen consisting of an improved oxime to replace the current fielded oxime 2-pralidoxime chloride (2-PAM).

The Emerging Threats program provides for the development of medical materiel and other medical equipment items necessary to provide an effective capability for medical defense against chemical warfare agent threats facing U.S. forces in the field. The Emerging Threats program is specifically supporting the discovery, characterization, development, and fielding of FDA-approved therapeutic medical countermeasures (MCMs) to protect the warfighter against operational exposures to the opioid class of pharmaceutical-based agents (PBAs), a high priority. This FY19 new start consists of transitioning a medical countermeasure against carfentanil into advanced development no later than FY2020.

The Improved Nerve Agent Treatment System (INATS) advanced development provides an enhanced capability treatment regimen offering greater protection over a broader spectrum of toxic nerve agent threats. Components of the development include (1) a new and improved oxime (replacing 2-pralidoxime chloride (2-PAM)) to provide protection across current and emerging threats, (2) nonclinical studies to demonstrate the safety of the pyridostigmine bromide (PB) product, and (3) insertion of a centrally-acting (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), while expanding warfighter pretreatment options.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: 1) Emerging Threats	-	-	0.990
Description: Regulatory			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
FY 2019 Plans: Initiate regulatory studies for FDA approval. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project is new start effort in FY 2019.			
Title: 2) INATS ***Description:*** Non-clinical	1.051	-	-
Title: 3) INATS ***Description:*** Clinical ***FY 2018 Plans:*** Continue and complete OXIME Phase 1 clinical trial. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Engineering and Manufacturing Development Phase.	1.665	1.085	-
Title: 4) INATS ***Description:*** Non-clinical ***FY 2018 Plans:*** Continue & complete OXIME non-clinical studies. ***FY 2019 Plans:*** Complete OXIME non-clinical studies. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Engineering and Manufacturing Development Phase.	1.984	1.925	0.615
Title: 5) INATS ***Description:*** Manufacturing ***FY 2018 Plans:*** Complete CMC Manufacturing of trial material ***FY 2019 Plans:***	-	0.730	0.275

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Complete Chemistry, Manufacturing, and Controls (CMC) Manufacturing of trial material. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Engineering and Manufacturing Development Phase.			
Title: 6) INATS ***Description:*** Animal Studies ***FY 2018 Plans:*** Continue rabbit, rat & NHP cause of death studies ***FY 2019 Plans:*** Complete rabbit, rat & NHP cause of death studies. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project transitioned to Engineering and Manufacturing Development Phase.	0.116	1.425	0.910
Accomplishments/Planned Programs Subtotals	4.816	5.165	2.790

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• MC5: *MEDICAL CHEMICAL DEFENSE (EMD)*	51.903	47.388	62.092	-	62.092	38.576	40.607	31.746	25.740	Continuing	Continuing
• JM6677: *ADVANCED ANTICONVULSANT SYSTEM (AAS)*	0.000	0.000	0.360	-	0.360	0.360	2.700	2.700	4.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

EMERGING THREAT CHEMICAL THERAPEUTICS (EMRT)

The Medical Countermeasures Systems Joint Program Management Office (JPM-MCS), an element of the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) provides U.S. military forces and the nation safe, effective, and innovative medical solutions to counter CBRN threats. This program provides for the development of medical materiel and other medical equipment items necessary to provide an effective capability for medical defense against chemical warfare agent threats facing U.S. forces in the field. It supports efforts to develop and produce FDA-approved therapeutic and prophylactic solutions to counter emerging

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threats. This program includes the Emerging Threats (EMRT) program, which consists of transitioning a medical countermeasure against carfentanil into advanced development no later than FY2020. This strategy will consider use of already existing candidates for incorporation into an autoinjector-based capability, if found to meet DoD requirements.

IMPROVED NERVE AGENT TREATMENT SYSTEM (INATS)

The INATS' evolutionary Acquisition Strategy has expanded to insert a centrally-acting (CA) anticholinergic agent. This strategy employs an incremental approach to provide independent, and more rapid development and delivery in a combined treatment regimen of (1) an improved oxime, and (2) CA capabilities, and to evaluate safety of PB when treating exposure of other traditional and novel organophosphorous nerve agents. 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 oxime and centrally acting formulation development efforts, nonclinical toxicology and efficacy studies, clinical safety studies, and nonclinical studies to evaluate safety of pyridostigmine bromide (PB) when used to counter other traditional and novel organophosphorus nerve agents. In the Engineering and Manufacturing Development (EMD) phase for the oxime and CA components, the Government will engage with commercial partner(s) to ensure that INATS development and manufacture is in accordance with Food and Drug Administration (FDA) regulations and guidelines; the commercial partner(s) will perform a Phase 2 human clinical safety study, nonclinical toxicology studies and definitive animal efficacy studies; the commercial partner(s) will also oversee the manufacture of improved oxime and CA formulations and delivery system that is stable under operationally relevant temperatures. The Government will submit a New Drug Application and seek FDA approval for the INATS products. In the Production and Deployment (P&D) Phase, the Government will pursue full-rate and stockpile production, conduct any FDA mandated post-marketing surveillance studies, and will transfer contracting/ logistical responsibilities to the Defense Logistics Agency (DLA) while remaining to monitor program performance through disposal as the life-cycle manager.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMRT - HW C - Emerging Threats	C/CPFF	TBD : TBD	0.000	0.000		0.000		0.900	Nov 2018	-		0.900	Continuing	Continuing	0.000
INATS - HW C - CMC Manufacturing of trial material	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.460	0.000		0.695	Dec 2017	0.262	Dec 2018	-		0.262	Continuing	Continuing	0.000
INATS - Develop bulk drug substance	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.851	Jan 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	0.460	0.851		0.695		1.162		-		1.162	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INATS - ES S -Regulatory Integration, IND, and NDA Support Efforts	C/CPFF	Battelle Memorial Institute : Columbus, OH	1.501	0.150	Apr 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	1.501	0.150		0.000		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 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INATS - DTE S - Oxime Non-clinical Studies	C/CPFF	Battelle Memorial Institute : Columbus, OH	1.924	1.734	Jan 2017	1.900	Nov 2017	0.000		-		0.000	Continuing	Continuing	0.000
INATS - DTE C - Cause of Death studies	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.540	0.106	Jul 2017	1.395	Oct 2017	0.875	Nov 2018	-		0.875	Continuing	Continuing	0.000
INATS - DTE C - Oxime Phase 1 Clinical Trial	C/CPFF	Battelle Memorial Institute : Columbus, OH	2.585	1.555	Jan 2017	0.950	Nov 2017	0.585	Nov 2018	-		0.585	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	5.049	3.395		4.245		1.460		-		1.460	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMRT - PM/MS C - PM/MS S - Chemical and Biological Medical Systems	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		0.090	Nov 2018	-		0.090	Continuing	Continuing	0.000
INATS - PM/MS S - Chemical and Biological Medical Systems	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.020	0.420	Jan 2017	0.225	Jan 2018	0.078	Jan 2019	-		0.078	Continuing	Continuing	0.000
		Subtotal	1.020	0.420		0.225		0.168		-		0.168	Continuing	Continuing	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.030	4.816		5.165		2.790		-		2.790	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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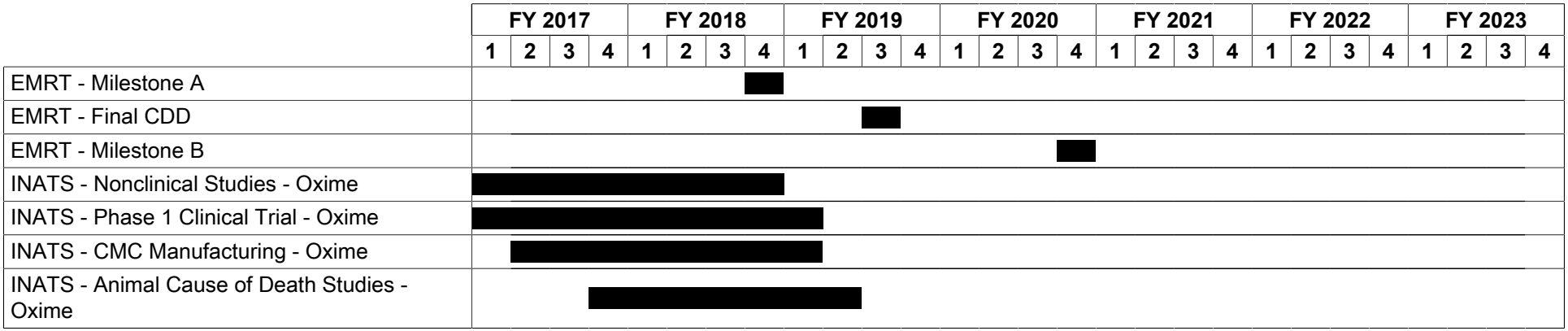

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EMRT - Milestone A	4	2018	4	2018
EMRT - Final CDD	3	2019	3	2019
EMRT - Milestone B	4	2020	4	2020
INATS - Nonclinical Studies - Oxime	1	2017	4	2018
INATS - Phase 1 Clinical Trial - Oxime	1	2017	1	2019
INATS - CMC Manufacturing - Oxime	2	2017	1	2019
INATS - Animal Cause of Death Studies - Oxime	4	2017	2	2019

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program											Date: February 2018	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*				Project (Number/Name) TE4 / *TEST & EVALUATION (ACD&P)*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
TE4: *TEST & EVALUATION (ACD&P)*	-	11.747	9.157	6.581	-	6.581	5.170	5.165	3.549	3.549	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the Chemical Biological Defense Portfolio (CBDP) Product Director, Test, Equipment, Strategy, and Support (PD TESS). Project will continue as Chem Bio Material Assessment Infrastructure (CBMAI) beginning in fiscal year 2019. TESS/CBMAI provides test infrastructure products to support testing and evaluating chemical and biological defense systems throughout the life cycle acquisition process. TESS/CBMAI products are aligned in three areas to include: (1) Analysis and Requirements; (2) Laboratory; (3) Field. The program name changed to highlight the Assessment function, which includes: analysis and analytical products conducted in support of infrastructure improvements.

(1) Analysis and Requirements: The products for this area are the analyses of requirements and justification of needs for test infrastructure to support acquisition efforts (e.g. Programs of Record (PORs), Advanced Technology Demonstrations (ATDs), and Accelerated Acquisition). The result is a verified need for component upgrades to existing test infrastructure, dynamic laboratory upgrades to existing test infrastructure, or initiation of new test infrastructure.

(2) Laboratory: The products for this area are the Non-Traditional Agent Defense Test System (NTADTS) and improvements to the Dynamic Test Chamber (DTC). The NTADTS provides a new capability to conduct chemical defense testing against current and emerging threat agents. The NTADTS supports testing of decontamination, collective protection, individual protection, and contamination avoidance products. The DTC provides a new capability for testing chemical point detection systems against chemical warfare agents in various environmental conditions. The CBD acquisition programs supported are Aerosol-Vapor Chemical Agent Detector (AVCAD) (formerly Next Generation Chemical Detector (NGCD 1)), Proximity Chemical Agent Detector (PCAD) (formerly NGCD 2), Multiphase Chemical Agent Detector (MPCAD) (formerly NGCD 3), Wearable Chemical Agent Detector (WCAD) (formerly NGCD 4), Uniform Integrated Protection Ensemble (UIPE) Increment 2 and Common Analytical Laboratory System (CALS). Future efforts will include the development of test methods and methodologies for additional classes of agents.

(3) Field: The products for this area are Test Grid, Open Architecture Data Management System (OADMS) (formerly Safari Test Grid), Joint Ambient Breeze Tunnel (JABT), and Active Standoff Chamber (ASC). The Test Grid effort provides a fully instrumented grid for chemical and biological simulant field test capabilities that integrate referee systems; dissemination equipment; real-time cloud tracking capability; meteorological equipment; a wireless network; and a Data Management System (DMS) software to track and display the simulant cloud; and provide status of all of the equipment in the network at Dugway Proving Ground (DPG). OADMS is an all-inclusive, open architecture, mobile management service functioning wirelessly, capable of integrating, controlling, commanding and managing all assets required to conduct chemical and biological (CB) tests at any Major Range Test Facility Base (MRTFB). OADMS provides algorithms and graphical user interfaces for automating real-time visualization, raw data, computation, hosts data collection and indefinite storage that can go to any MRTFB for CB Testing. The JABT and ASC improvements will provide a tech refresh to existing infrastructure and allow establishment of test data correlation between laboratory-tunnels-field for test results. The CBD acquisition programs supported are the Joint Expeditionary Collective Protection (JECP), Next Generation Chemical Detector (NGCD), Joint Biological Tactical Detection System

(JBTDS), Uniform Integrated Protection Ensemble (UIPE), and the Joint USFK Point and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD).

Experimentation and demonstration will be used to reduce risk and inform supporting materiel solutions, CONOPS and TTPs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: 1) PD TESS - Program Management ***FY 2018 Plans:*** Continue Government Integrated Product Team, program management, systems engineering and IPT support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	4.676	3.400	-
Title: 2) PD TESS - Non-Traditional Agent Defense Test System (NTADTS) ***Description:*** The NTADTS infrastructure is multi-component advanced threat test system designed to test CBDP equipment against advanced threats in all states of matter and under environmental conditions. ***FY 2018 Plans:*** Continue methodology development and continue test fixture design for additional classes of agent. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	1.965	2.756	-
Title: 3) PD TESS - Joint Ambient Breeze Tunnel (JABT) ***Description:*** Conduct study on methodology to prevent the wind channeling effect existing in the ASC to be implemented into the Test Grid Data Management System (DMS).	0.696	-	-
Title: 4) PD TESS - Active Standoff Chamber (ASC) ***Description:*** Connects the data collected in the chamber with the Test Grid Data Management System (DMS) for accuracy.	0.222	-	-
Title: 5) PD TESS - Test Infrastructure Analysis & Requirements (TIA&R) ***Description:*** Perform studies to determine what modification or additional test infrastructure is required to test programs of record based on their requirements. ***FY 2018 Plans:***	3.033	2.301	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Continue to analyze upcoming test infrastructure needs and requirements. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.			
Title: 6) PD TESS - Open Architecture Data Management System (OADMS) ***Description:*** Provides a plug-and-play capability to the Test Grid using Open Architecture protocol to integrate legacy systems. ***FY 2018 Plans:*** Integrate additional referee instrumentation and transition the capability to DPG. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred to another funding line.	1.155	0.700	-
Title: 7) CBMAI - Joint Ambient Breeze Tunnel (JABT) ***Description:*** Conduct study on methodology to prevent the wind channeling effect existing in the ASC to be implemented into the Test Grid Data Management System (DMS). ***FY 2019 Plans:*** Execute upgrades to the JABT. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred from another funding line.	-	-	0.500
Title: 8) CBMAI - Program Management ***Description:*** Program Management ***FY 2019 Plans:*** Continue Government Integrated Product Team, program management, systems engineering, and IPT Support. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred from another funding line.	-	-	2.081
Title: 9) CBMAI - Test Infrastructure Analysis & Requirements (TIA & R) ***Description:*** Performs studies to determine what modification or additional test infrastructure is required to test programs of record based on their requirements. ***FY 2019 Plans:***	-	-	3.500

Exhibit R-2A, RDT&E Project Justification: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Continue to analyze upcoming test infrastructure needs and requirements. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred from another funding line.			
Title: 10) CBMAI - Non-Traditional Agent Defense Test System (NTADTS) ***Description:*** The NTADTS infrastructure is multi-component advanced threat test system designed to test CBDP equipment against advanced threats in all states of matter and under environmental conditions. ***FY 2019 Plans:*** Complete methodology development and continue test fixture design for expanded test capabilities. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Program/project funding transferred from another funding line.	-	-	0.500
Accomplishments/Planned Programs Subtotals	11.747	9.157	6.581

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• TE5: *TEST & EVALUATION (EMD)*	2.744	9.548	9.056	-	9.056	7.788	7.990	7.394	7.394	Continuing	Continuing
• TE7: *TEST & EVALUATION (OP SYS DEV)*	2.551	6.605	6.318	-	6.318	5.416	5.733	5.733	5.733	Continuing	Continuing

Remarks

D. Acquisition Strategy

TEST EQUIPMENT, STRATEGY & SUPPORT (PD TESS)

TESS 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.

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.

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E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PD TESS - HW S - TI Analysis & Requirements	C/CPFF	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	0.097	Aug 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - HW S - TI Analysis & Requirements #2	C/CPFF	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	0.465	0.150	Jan 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - HW S - TI Analysis & Requirements #3	C/CPFF	MRIGlobal : Kansas City, MO	0.000	2.241	Mar 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - HW S - Joint Ambient Breeze Tunnel Upgrades	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.665	Jul 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - HW S - Active Stand-off Chamber Component Upgrades	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.222	Jul 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - HW S - Open Architecture Data Management System	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.405	Jul 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - HW S - TI Analysis & Requirements #4	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.038	Feb 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - NTA Defense Test System Design/Fabrication/ Installation	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	19.380	1.965	Nov 2016	2.756	Dec 2017	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Joint Ambient Breeze Tunnel Component Upgrade	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.031	Jul 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PD TESS - Test Infrastructure - HW S - Analysis & Requirements Capability Analyses	C/CPFF	Battelle Memorial Institute : Columbus, OH	1.088	0.507	Feb 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Open Architecture Data Management System	FFRDC	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	0.500	0.750	Jan 2017	0.700	Mar 2018	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Analysis & Requirements	C/CPFF	Various : Various	2.865	0.000		2.301	Jan 2018	0.000		-		0.000	Continuing	Continuing	0.000
CBMAI - HW S - NTA Defense System Design/ Fabrication/Installation	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		0.500	Dec 2018	-		0.500	Continuing	Continuing	0.000
CBMAI - HW S - Joint Ambient Breeze Tunnel Component Upgrades	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.000		0.000		0.500	Dec 2018	-		0.500	Continuing	Continuing	0.000
CBMAI - HW S - TI Analysis and Requirements	C/CPFF	Various : Various	0.000	0.000		0.000		2.800	Dec 2018	-		2.800	Continuing	Continuing	0.000
CBMAI - HW S - TI Analysis and Requirements #2	MIPR	Various : Various	0.000	0.000		0.000		0.700	Dec 2018	-		0.700	Continuing	Continuing	0.000
		Subtotal	24.298	7.071		5.757		4.500		-		4.500	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PD TESS - ES S - PD TESS - OPETS Support	C/CPFF	Patricio Enterprises : Inc., Woodbridge, VA	0.268	0.190	Feb 2017	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** TE4 / *TEST & EVALUATION (ACD&P)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBMAI - ES S - CBMAI OPETS Support	C/CPFF	Patricio Enterprises : Inc., Woodbridge, VA	0.000	0.000		0.000		0.250	Feb 2019	-		0.250	Continuing	Continuing	0.000
		Subtotal	0.268	0.190		0.000		0.250		-		0.250	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PD TESS - PM/MS S - Program Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	8.738	4.486	Dec 2016	3.400	Nov 2017	0.000		-		0.000	Continuing	Continuing	0.000
CBMAI - PM/MS C - Program Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.831	Dec 2018	-		1.831	Continuing	Continuing	0.000
		Subtotal	8.738	4.486		3.400		1.831		-		1.831	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.304	11.747		9.157		6.581		-		6.581	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** TE4 / *TEST & EVALUATION (ACD&P)*

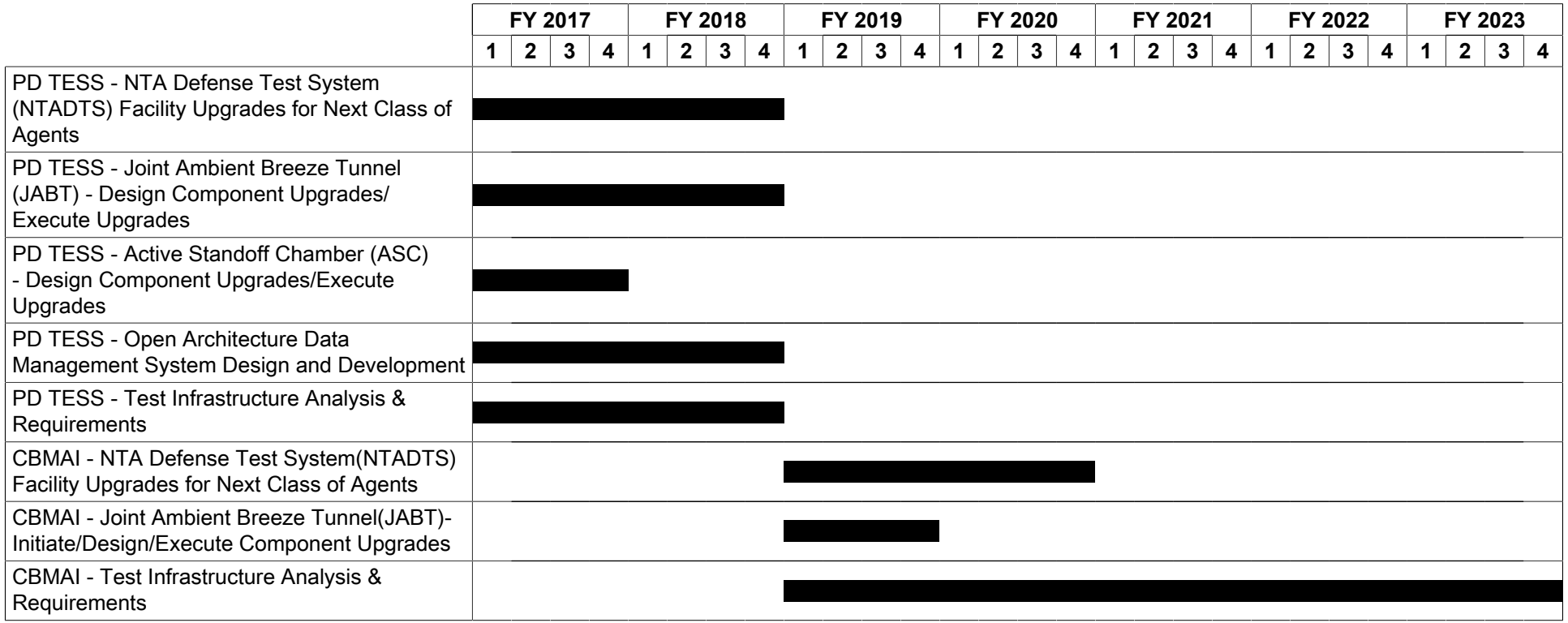

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Chemical and Biological Defense Program		Date: February 2018
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0603884BP / *CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)*	**Project (Number/Name)** TE4 / *TEST & EVALUATION (ACD&P)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
PD TESS - NTA Defense Test System (NTADTS) Facility Upgrades for Next Class of Agents	1	2017	4	2018
PD TESS - Joint Ambient Breeze Tunnel (JABT) - Design Component Upgrades/ Execute Upgrades	1	2017	4	2018
PD TESS - Active Standoff Chamber (ASC) - Design Component Upgrades/Execute Upgrades	1	2017	4	2017
PD TESS - Open Architecture Data Management System Design and Development	1	2017	4	2018
PD TESS - Test Infrastructure Analysis & Requirements	1	2017	4	2018
CBMAI - NTA Defense Test System(NTADTS) Facility Upgrades for Next Class of Agents	1	2019	4	2020
CBMAI - Joint Ambient Breeze Tunnel(JABT)- Initiate/Design/Execute Component Upgrades	1	2019	4	2019
CBMAI - Test Infrastructure Analysis & Requirements	1	2019	4	2023