Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Chemical and Biological Defense Program	Date: May 2017
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
Total Program Element	-	276.560	266.231	406.789	-	406.789	365.017	353.393	294.527	262.443	Continuing	Continuing
CA5: *CONTAMINATION AVOIDANCE (EMD)*	-	55.468	50.203	127.499	-	127.499	95.222	86.003	39.725	34.712	Continuing	Continuing
CM5: *HOMELAND DEFENSE (EMD)*	-	6.880	11.224	21.411	-	21.411	0.000	0.000	0.000	0.000	0	39.515
CO5: *COLLECTIVE PROTECTION (EMD)*	-	7.228	4.224	8.546	-	8.546	10.802	5.333	4.930	0.000	0	41.063
DE5: *DECONTAMINATION SYSTEMS (EMD)*	-	16.015	9.984	15.686	-	15.686	6.349	12.037	16.527	13.516	Continuing	Continuing
IP5: *INDIVIDUAL PROTECTION (EMD)*	-	19.720	11.427	14.481	-	14.481	11.600	4.500	3.371	3.370	Continuing	Continuing
IS5: *INFORMATION SYSTEMS (EMD)*	-	20.043	27.323	25.677	-	25.677	23.159	22.594	21.182	22.814	Continuing	Continuing
MB5: *MEDICAL BIOLOGICAL DEFENSE (EMD)*	-	80.412	106.223	136.553	-	136.553	170.330	196.813	183.836	160.146	Continuing	Continuing
MC5: *MEDICAL CHEMICAL DEFENSE (EMD)*	-	64.773	39.504	47.388	-	47.388	38.499	18.325	16.966	20.491	Continuing	Continuing
TE5: *TEST & EVALUATION (EMD)*	-	6.021	6.119	9.548	-	9.548	9.056	7.788	7.990	7.394	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. Operating forces have a critical need for defense against worldwide proliferation of CB warfare capabilities and for medical treatment of CB casualties. Congress directed centralized management of Department of Defense (DoD) CB Defense initiatives, both medical and non-medical. This program element supports the Engineering and Manufacturing Development (EMD) of medical and physical CB defensive equipment and materiel. Projects within BA5 are structured to consolidate Joint and Service-unique tasks within four commodity areas: contamination avoidance, individual and collective force protection, decontamination, and medical countermeasures. This consolidation provides for development and operational testing of equipment for Joint Service use and for Service-unique requirements.

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Contamination avoidance efforts under this system development program will provide U.S. forces with real-time hazard assessment capabilities. They include multi-agent point and remote chemical detection for ground, aircraft, and shipboard applications; automated warning and reporting systems; integrated radiation detection and monitoring equipment; and enhanced battlefield reconnaissance capabilities. Force protection efforts will increase protection levels while decreasing physical and psychological burdens imposed by protective equipment.

The Secretary of Defense is responsible for research, development, acquisition, and deployment of medical countermeasure equipment and materiel 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 the U.S. population, must support military commanders practical operational requirements and deployment strategies and must emphasize prevention of injury and illness and protection of the force. Preventive measures in this EMD, such as vaccines and chemical 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 satisfy the need for greater flexibility in military planning and operations. When vaccines and other prophylactic medical countermeasures are not available, efforts on this EMD support pre-hospitalization treatment, en-route care, hospital care, and long-term clinical outcomes. Specific items in this category include CB diagnostics, and therapeutics to mitigate the consequences of biologic threats and exposure to ionizing radiation due to nuclear or radiological attacks.

The Department of Defense coordinates its efforts with the Departments of Health and Human Services 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 Department of Defense'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.

The projects in this program element support efforts in the engineering and manufacturing phase of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Chemical and Biological Defense Program	Date: May 2017
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B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	282.147	266.231	412.287	-	412.287
Current President's Budget	276.560	266.231	406.789	-	406.789
Total Adjustments	-5.587	0.000	-5.498	-	-5.498
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	-5.587	-			
• SBIR/STTR Transfer	0.000	-			
• Other Adjustments	0.000	-	-5.498	-	-5.498

Change Summary Explanation

Funding: FY18 - Adjustments ($5M) due to fact-of-life changes and to support efforts in advanced development.

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program			Date: May 2017
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) CA5 / *CONTAMINATION AVOIDANCE (EMD)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
CA5: *CONTAMINATION AVOIDANCE (EMD)*	-	55.468	50.203	127.499	-	127.499	95.222	86.003	39.725	34.712	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports Engineering and Manufacturing Development and Low Rate Initial Production (EMD/LRIP) of an array of reconnaissance, detection and identification equipment, and warning systems. 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) Enhanced Maritime Biological Detection (EMBD); (2) Joint Nuclear Biological Chemical Radiological System (JNBCRS) (3)The Joint Handheld Bio-Agent Identifier (JHBI); (4) Joint Biological Tactical Detection System (JBTDS); (5) Next Generation Chemical Detector (NGCD); (6) Non-Traditional Agent (NTA) Defense Support, (7) the Global Biosurveillance Technology Initiatives (GBTI); and (7)

The Enhanced Maritime Biological Detection (EMBD) program as a FY17 new start will transition a technology from the Assessment of Environmental Detection (AED) leg of the Joint USFK Portal and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD) to a program of record for the US Navy (USN). The EMBD will address Navy detection and identification capability gaps and replace the 135 Joint Biological Point Detection Systems (JBPDS) currently fielded to the Navy. The EMBD system will provide improved detection sensitivity, lower false alarms and a modernized computing architecture. The EMBD program will complete development and testing, integration and production of a lower cost biological point detection system that will detect, collect and identify biological warfare agent aerosols. The EMBD will provide automated warning and provide a reduced sustainment cost while protecting the shipboard personnel.

Joint Nuclear Biological Chemical Radiological System (JNBCRS) is the sensor suite upgrade to the Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV). The NBCRV Sensor Suite (NBCRV SS) is the Mission Equipment Package for the Stryker NBCRV and consists of chemical point detectors, a standoff chemical vapor detector, a biological point detector, a chemical vapor sampling system, point radiological detector, a standoff radiological detector, and a Sensor Processing Group. The NBCRV SS provides the Stryker NBCRV the ability to detect, identify, collect, report, and mark, Nuclear Biological Chemical (NBC) Hazards. The NBCRV Sensor Suite Upgrade will improve chemical, biological and nuclear detection and identification capabilities, increase the maneuver speed of the NBCRV when conducting NBC missions, and reduce sustainment costs over the current system.

The Joint Handheld Bio-Agent Identifier (JHBI) program is a Joint Service Acquisition Category (ACAT) III program consisting of two increments to address an existing United States Special Operations Command (USSOCOM) requirement for handheld, multiplexed, environmental, bio-agent identification. The JHBI program was initiated under the Joint Biological Tactical Detection System (JBTDS) and will provide three different handheld bio-identification systems for the rapid and accurate identification of organisms at the point of contact for multiple mission types. The proposed JHBI systems will be handheld, Polymerase Chain Reaction-based, multiplexed devices for the analysis of powder or liquid environmental biological samples. JHBI capabilities will provide Special Operations Forces with timely and accurate identification of 8 or more bio-agents at the point of need. JHBI Increment 1 is anticipated to serve as a supplemental capability to the BioFire RAZOR with Increment 2 fielding the complete replacement of the RAZOR by FY20.

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The Joint Biological Tactical Detection System (JBTDS) program will develop, integrate, test, and produce the first lightweight, low cost biological surveillance system that will detect, collect, and identify biological warfare agent aerosols. JBTDS will provide warning through the Joint Warning And Reporting Network (JWARN) and archive sample for follow-on analyses. JBTDS, providing near real-time local audio and visual alarm, may be employed by any Military User. JBTDS components will be man-portable, battery-operable, and easy to employ. JBTDS will provide notification of a hazard and enhance battle space awareness to protect and preserve the force. When networked, JBTDS will augment existing biological detection systems to provide a theater-wide seamless array capable of biological detection, identification and warning to support time sensitive force protection decisions. The JBTDS will provide lightweight, handheld identifiers specifically designed for environmental identification missions conducted by Special Purpose Units (SPU) for the screening and confirmation of unknown sample in the field. JBTDS will initiate engineering and redesign studies to support the integration of components into Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV).

The Next Generation Chemical Detector (NGCD) is several detection systems for vapor and aerosol monitoring (NGCD 1), location of liquid and solids on surfaces (NGCD 2), and sampling multiple phases of matter (NGCD 3). NGCD will detect and identify non-traditional agents, chemical warfare agents (CWAs), 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. These sensors will improve detection, consequence management and reconnaissance, and weapons of mass destruction (WMD) interdiction capabilities. The scope of the project includes detection of chemical 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 Non-Traditional Agent (NTA) Defense program supports the on-going chemical and biological (CB) defense efforts as acquisition programs address emerging threat requirements across the full spectrum of commodities. Dedicated initiatives and projects will develop and transition information, technologies, and capabilities into acquisition options and efforts (e.g. Programs of Record, Enhanced Capability Demonstrations, and Accelerated Acquisition) that account for the breadth and depth of advanced, emerging, and unknown CB threats and span the full range of defense missions. The NTA Defense program will provide essential enablers such as threat understanding; operational impacts of performance trades; and comprehensive, integrated, and layered defense concepts against advanced, emerging, and unknown CB threats. The program will support a balanced portfolio which will target capabilities to reduce operational and tactical risk from technology gaps inherent from emerging threats. Additional efforts in conducting systems engineering analysis will occur in order to identify and consolidate capability knowledge gaps and prioritize required investments. These initiatives allow the CBDP to mitigate risk against emerging threats and better prepare the warfighter to deal with technological surprise across the full range of military missions.

The Global Biosurveillance Technology Initiative (GBTI) will research and characterize laboratory networks and develop algorithms to identify key nodes, having the greatest potential to compress the time between disease event initiation and the production of actionable data. Key node data generation will be augmented in direct support of existing programs of record such as the Common Analytical Laboratory System (CALS).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: 1) EMBD - Government Support	-	2.205	3.620
FY 2017 Plans:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Provide Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support for USN variant. ***FY 2018 Plans:*** Continue Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support for USN variant.			
Title: 2) EMBD - IDP Transition ***FY 2018 Plans:*** Initiate detector Technical Data Package (TDP) transition to Industry and government test support.	-	-	2.000
Title: 3) EMBD - Prototype Acquisition ***FY 2018 Plans:*** Initiate acquisition of seven prototype systems for contractor developmental testing (DT) and government DT/ Operational Assessment (OA).	-	-	5.958
Title: 4) EMBD - Live Agent Testing ***FY 2018 Plans:*** Initiate live agent testing to verify detector performance against remaining agents not tested in JUPITR Advanced Technology Demonstration (ATD).	-	-	2.000
Title: 5) EMBD - IPT Support ***FY 2017 Plans:*** Initiate combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) during Engineering and Manufacturing Development (EMD) Phase for USN variant. ***FY 2018 Plans:*** Continue combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) during Engineering and Manufacturing Development (EMD) Phase.	-	1.123	0.500
Title: 6) EMBD - LMI ***FY 2017 Plans:*** Initiate development of Logistics Management Information (LMI) for USN variant.	-	0.671	-
Title: 7) JHBI ***FY 2018 Plans:***	-	-	0.990

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Conduct and complete Developmental and Operational testing of all three systems. Complete Low Rate Initial Production and Initial Operational Test and Evaluation. Field all three systems at Full Operational Capability with screening and confirmatory assays.			
Title: 8) JNBCRS 1 ***FY 2018 Plans:*** Initiate and continue the design, build, test, and integrated logistics task of the Stryker NBCRV Sensor Suite.	-	-	17.952
Title: 9) JBTDS ***FY 2016 Accomplishments:*** Continued the EMD Contract - development and delivery of first increment of test articles (including the 17 detector/collectors: $20,502 each, 18 collectors: $12,540, 17 identifiers: $39,708, and 14 base stations: $28,995 each, consumables consist of the following 117 identifier consumables: $115 each, and 354 collector consumables: $25 each). The EMD Contract also includes Program Management, Logistics and Test Support. ***FY 2017 Plans:*** Complete the EMD Contract (including 45 test articles at $70,342 each, 1050 consumables at $134 each). ***FY 2018 Plans:*** Continue the EMD Contract for program management, logistics and test support.	8.675	3.599	0.700
Title: 10) JBTDS ***FY 2016 Accomplishments:*** Continued development and design of a tactical common identifier using the identification system down-selected from Next Generation Diagnostic System (NGDS) Increment 1 program. ***FY 2017 Plans:*** Continue development and design of a tactical identifier using the BioFire Film Array identification system from NGDS Increment 1 program. ***FY 2018 Plans:*** Continue development and design of a tactical identifier using the BioFire Film Array identification system from NGDS Increment 1 program.	6.431	5.300	8.891
Title: 11) JBTDS ***FY 2016 Accomplishments:***	7.735	6.032	8.983

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continued Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, testing and evaluation, scheduling, and technical support. ***FY 2017 Plans:*** Continue Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, testing and evaluation, scheduling, and technical support. ***FY 2018 Plans:*** Continue Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, testing and evaluation, scheduling, and technical support.			
Title: 12) JBTDS ***FY 2016 Accomplishments:*** Continued combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) during EMD Phase. ***FY 2017 Plans:*** Continue and complete combat developer, test community and Service representation (i.e. IPT and working groups) during EMD Phase. ***FY 2018 Plans:*** Continue combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) during EMD Phase.	2.966	2.140	3.016
Title: 13) JBTDS ***FY 2016 Accomplishments:*** Continued developmental planning and testing to include live agent, environmental false alarm, shipboard operations, outdoor interferent and military standard testing. ***FY 2017 Plans:*** Continue and complete developmental planning and testing to include live agent, environmental false alarm, outdoor interferent and military standard testing. ***FY 2018 Plans:*** Complete developmental planning and testing to include live agent, environmental false alarm, and outdoor interferent.	4.299	4.218	1.120
Title: 14) JBTDS ***FY 2016 Accomplishments:***	0.600	-	0.400

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continued sensor calibration standards effort for routine maintenance, metrology and calibration capability for detection systems. ***FY 2018 Plans:*** Complete sensor calibration standards effort for routine maintenance, metrology and calibration capability for detection systems.			
Title: 15) JBTDS ***FY 2016 Accomplishments:*** Initiated reliability growth model for EMD phase testing. ***FY 2017 Plans:*** Continue reliability growth model for EMD phase testing. ***FY 2018 Plans:*** Continue reliability growth model for EMD phase testing.	0.043	0.075	0.120
Title: 16) JBTDS ***FY 2016 Accomplishments:*** Continued the verification and validation of military utility model. ***FY 2018 Plans:*** Continue the verification and validation of military utility model.	0.100	-	0.250
Title: 17) JBTDS ***FY 2016 Accomplishments:*** Initiated and completed combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) for USN variant.	0.225	-	-
Title: 18) JBTDS ***FY 2016 Accomplishments:*** Initiated and completed developmental testing to include live agent, environmental false alarm, shipboard operations, outdoor interferent and military standard testing for USN variant.	0.431	-	-
Title: 19) JBTDS ***FY 2016 Accomplishments:*** Provided Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support for USN Variant.	1.444	-	-
Title: 20) JBTDS	-	2.670	0.150

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2017 Plans: Continue engineering redesign study on the JBTDS system to meet Nuclear Biological Chemical Reconnaissance Vehicle(NBCRV) platform requirements. ***FY 2018 Plans:*** Conduct and complete evaluation and engineering redesign study on the JBTDS system to meet NBCRV platform requirements.			
Title: 21) JBTDS ***FY 2016 Accomplishments:*** Initiated production of BWAs for live agent aerosol testing. ***FY 2018 Plans:*** Complete production of BWAs for live agent aerosol testing.	0.814	-	2.600
Title: 22) JBTDS ***FY 2018 Plans:*** Initiate Operational Assessment which includes end users and biological simulants.	-	-	3.350
Title: 23) JBTDS ***FY 2016 Accomplishments:*** Conducted development of three lightweight, handheld bio-identification systems with screening assays to meet the needs of Special Purpose Units (SPUs). Completed Increment 1 Developmental Testing and Operational Assessment.	6.087	-	-
Title: 24) JBTDS ***FY 2016 Accomplishments:*** Conducted Government strategic/tactical planning, Government systems engineering, program management, costing, technology assessment, testing and evaluation, scheduling, and technical support for SPUs.	0.334	-	-
Title: 25) Next Generation Chemical Detector (NGCD) ***FY 2017 Plans:*** Award a minimum of three EMD contracts. (including 20 NGCD 3 systems at $150K each, 20 NGCD 2 systems at $50K each and 37 NGCD 1 systems at $15K each). ***FY 2018 Plans:*** Complete testing of ruggedized sensors	-	13.132	1.200
Title: 26) Next Generation Chemical Detector (NGCD)	1.599	3.695	18.045

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2016 Accomplishments: Continued Government Program Management and system engineering support. ***FY 2017 Plans:*** Continue Government Program Management. Finalize and conduct milestone B for NGCD 1, NGCD 2, and NGCD 3. Initiate EMD. ***FY 2018 Plans:*** Continue Government Program Management (transition NGCD 1-3 from BA4 to BA5). Finalize and conduct MSB for NGCD 2 and 3. Initiate EMD.			
Title: 27) NGCD ***Description:*** Chemical Reconnaissance & Explosive Screening Set(CRESS) Engineering Studies ***FY 2016 Accomplishments:*** Conducted engineering studies.	0.705	-	-
Title: 28) NGCD ***Description:*** NGCD 1 EMD Contract ***FY 2018 Plans:*** Implement Detailed Design, conduct Critical Design Review (CDR), buy 75 test articles for Production Qualification Test (PQT). Continue EMD.	-	-	11.274
Title: 29) NGCD ***Description:*** NGCD 2- EMD Contract ***FY 2018 Plans:*** Initiate EMD. Conduct Preliminary Design Review (PDR), buy 5 test articles at 85K each for customer test.	-	-	11.236
Title: 30) NGCD ***Description:*** NGCD 3- EMD Contract ***FY 2018 Plans:*** Initiate EMD. Conduct Preliminary Design Review (PDR), buy 5 test articles at 150K each for customer test.	-	-	9.835
Title: 31) NGCD	-	-	4.847

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Description: NGCD 1 - Test ***FY 2018 Plans:*** Begin Production Qualification Test (PQT). Testing includes PQT Chamber testing and PQT Survivability / Interoperability/ Environmental testing.			
Title: 32) NGCD ***Description:*** NGCD 2 - Test ***FY 2018 Plans:*** Conduct customer test for threat library verification.	-	-	0.750
Title: 33) NGCD ***Description:*** NGCD 3- Test ***FY 2018 Plans:*** Conduct customer test for threat library verification.	-	-	0.800
Title: 34) NTA Defense - Threat Understanding/Military Utility and Supportability ***FY 2016 Accomplishments:*** Initiated planning for expanded threat space characterization. Continued analysis of threat understanding for further emerging classes, Non-traditional agents, to enable refinement of technology and capability gaps identified during mission analysis. Utilized mission analysis outputs to develop initial Military Assessments (MUAs) and Table Top Exercises (TTXs) that inform requirement development.	1.553	-	-
Title: 35) NTA Defense - Systems Engineering ***FY 2016 Accomplishments:*** Executed mission modeling to identify enterprise (multi-commodity) NTA solutions to support accelerated and enduring material solution development. Completed initial Integration Portfolio Analytics (IPA) tool development.	2.285	-	-
Title: 36) NTA Defense - Test and Evaluation ***FY 2016 Accomplishments:***	5.106	1.174	1.188

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Utilized emerging threat test bed for system/component technology evaluation against emerging and unforeseen threats, prepared data inputs into Systems Engineering processes that conduct solution set, specifically in detection and IP, analyses. Procured equipment use for technical/operational assessments with user groups. ***FY 2017 Plans:*** Continue to utilize advanced and emerging CB threat test bed facilities and methodologies to evaluate new and emerging component technologies for the enterprise to inform and refine technology development strategies. Initiate planning for MUAs and TTXs to inform lab and field trials evaluating new and emerging component technologies. ***FY 2018 Plans:*** Continue to utilize advance and emerging threat test bed facilities and methodologies to evaluate new and emerging component technologies for the enterprise to inform and refine technology development strategies. Initiate planning for the MUAs and TTXs to inform lab and field trials evaluating new and emerging component technologies. Continue to prioritize efforts to address Advanced Threat requirements for existing programs of record and user groups. Conduct characterization of protective equipment across many classes of threat compounds, to determine ability to meet program requirements. Continued engagement of user groups with Advanced Threat requirements through TTXs and field trials.			
Title: 37) NTA Defense - Strategic Coordination ***FY 2016 Accomplishments:*** Continued to synchronize acquisition strategies across interagency and international NTA initiatives according to DoD/CBDP guidance. Continued to update and maintain NTA Library.	1.132	-	-
Title: 38) Global Biosurveillance Technology Initiative (GBTI) ***FY 2016 Accomplishments:*** Continued ongoing efforts to procure additional assays for biological warfare agents and emerging infectious diseases to support the GBTI labs. ***FY 2017 Plans:*** Complete initial efforts to optimize and procure additional assays for biological warfare agents and emerging infectious diseases to support the GBTI labs for demonstration and method validation purposes at GBTI stakeholder labs. These activities leverage the efforts of other partner OGAs to include DTRA JSTO and CDC to ensure that all aspects of the CBD portfolio are captured. These assays, now multi-plexed, allow lab staff to test one sample against many targets, compresses discovery to decision timeline for decision makers, and, for the first time, put advanced characterization and genomic sequencing tools in labs at or near the sample collection site, as opposed to relying solely on reach back support in the United States. ***FY 2018 Plans:***	1.277	0.834	1.685

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Complete network analysis to document sample and data flows, identify areas of synergy, and prioritize projects between the GBTI office and the GBTI stakeholder labs. The results of the network analysis will be used to determine the best methods for integrating data and information streams among the labs in order to create a robust data pipeline that feeds the identification of unknown threats, evaluation of countermeasures, and the development of new countermeasures.			
Title: 39) GBTI ***FY 2016 Accomplishments:*** Continued ongoing efforts for bioinformatics integration for Global Biosurveillance Technology Initiative (GBTI). ***FY 2017 Plans:*** Completed initial efforts for bioinformatics integration and demonstration for Global Biosurveillance Technology Initiative (GBTI). The Bioinformatics effort, in conjunction with whole genomic sequencing, provides a robust and unique capability to the Warfighter, especially is OCONUS and geographically disparate areas. The next generation sequencing provides for a screening capability for pathogens for which there are no assays, provides a mechanism to determine when pathogens are no longer detected by assays, and provides analytical tools that are rapidly changing with regard to analysis capabilities. The utilization of whole genomic sequencing will assist in determining existing network limitations and capabilities for data sharing. ***FY 2018 Plans:*** Engage with stakeholder laboratories to track projects of mutual interest with the Chemical Biological Defense Program. Projects will cover a variety of activities and will provide data and information used to facilitate the identification of unknown threats and the development of new countermeasures. Will transition S3S and EDGE from DTRA-JSTO to support the engagement with stakeholder laboratories for the generation of data and information that support countermeasure development.	0.688	0.667	2.754
Title: 40) GBTI ***FY 2016 Accomplishments:*** Continued ongoing efforts for three open architecture analytical platforms to be fielded and technology insertion of additional capabilities in support the GBTI labs. ***FY 2017 Plans:*** Complete initial efforts for three open architecture analytical platforms for sustainment and demonstration of standardized equipment suite and procedures in support the GBTI labs. Operational assessment projects are the GBTI laboratories include metagenomic pathogen discovery, evaluation of GBTI optimized multi-plex assay panels, and high throughput surveillance projects with potential for regional or global impact within context of local health issues. The information gleaned from the operational assessments will assess the baseline of each laboratory, identify and address the gaps, and determining the impact of standardized equipment and operating procedures between laboratories. The Warfighter has a well-trained laboratory staff at 25	0.939	2.668	1.285

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
locations worldwide that can assist in conducting high throughput sample assessments and providing vital information to decision makers in a more concise timeframe, than previously when CONUS reachback support was required. ***FY 2018 Plans:*** Complete identification, test, and evaluation of new technologies with potential expeditionary analytical applications and their interoperability with existing systems as well as other new technologies.			
Accomplishments/Planned Programs Subtotals	55.468	50.203	127.499

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• CA4: *CONTAMINATION AVOIDANCE (ACD&P)*	74.684	42.308	29.211	-	29.211	33.181	27.908	20.208	14.131	Continuing	Continuing
• JF0100: *JOINT CHEMICAL AGENT DETECTOR (JCAD)*	27.134	7.547	4.253	-	4.253	3.500	0.000	0.000	0.000	0	42.434
• JF0104: *NEXT GEN CHEMICAL DETECTOR (NGCD)*	0.000	2.378	0.000	-	0.000	1.722	15.872	61.516	86.432	Continuing	Continuing
• MC0100: *JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)*	12.900	1.956	0.500	-	0.500	0.000	0.000	0.000	7.655	Continuing	Continuing
• MC0101: *CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)*	111.248	90.094	94.424	-	94.424	93.269	59.358	45.924	55.062	Continuing	Continuing
• MX0001: *JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)*	0.000	0.000	0.000	-	0.000	0.000	46.724	68.825	75.502	Continuing	Continuing

Remarks

D. Acquisition Strategy

ENHANCED MARITIME BIOLOGICAL DETECTION (EMBD)

The Enhanced Maritime Biological Detection (EMBD) program will use a streamlined acquisition strategy. This approach is based on the mature technology that will transition from the Assessment of Environmental Detection (AED) leg of the Joint USFK Portal and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD) to a program of record for the US Navy. The EMBD program is expected to transition to a pre-MS C upon selection from AED and will make

maximum use of the testing that has been done to field the replacement for the 135 Joint Biological Point Detection Systems (JBPDS) in the Navy. An RFP will be released in FY17 for a competitive procurement.

JOINT HANDHELD BIO-AGENT IDENTIFIER (JHBI)

The JHBI program will pursue a collaborative accelerated acquisition strategy to incrementally deliver capability to USSOCOM. JHBI will use commercial items to procure candidate systems from 3 vendors for further development and fielding. JHBI Increment 1 is co-managed and co-executed through an acquisition partnership between the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) and USSOCOM to expand the relationship between JPEO-CBD and USSOCOM and to leverage acquisition and subject matter expertise on both sides to reduce acquisition timelines and improve customer satisfaction. Specifically, JHBI is using the USSOCOM requirement validation and test and evaluation resources from program inception through Milestone C. The JHBI program acquired test-articles of a single commercial-off-the-shelf (COTS) platform with relevant assays for the JHBI Combat Evaluation (CV), which served as the decision gate for the completion of the Technology Maturation and Risk Reduction (TMRR) phase. To mitigate risk, additional technologies were identified and inserted into JHBI Increment 1 during the TMRR phase.

JOINT NBC RECONNAISSANCE SYSTEM - STRYKER (JNBCRS)

The Nuclear Biological Chemical Reconnaissance Vehicle Sensor Suite (NBCRV SS) Upgrade is a single-step in the evolutionary acquisition strategy for the Stryker Nuclear Biological Chemical Reconnaissance Vehicle. The contract approach to integrate of chemical point detectors, a standoff chemical vapor detector, a biological point detector, a chemical vapor sampling system, point radiological detector, a standoff radiological, and a Sensor Processing Group is to utilize competitive contracting. The contract approach for the upgrade of the Sensor Processing group is to use Armament Research Development and Engineering Center (ARDEC).

JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)

The JBTDS program will use an evolutionary acquisition strategy. Under this approach, capability is developed based on current technologies, recognizing up front the need for potential technology insertion as technology advances to provide better and more cost effective capabilities. Technology insertions will provide militarily useful and supportable operational capabilities that can be developed, produced, deployed, and sustained. JBTDS will make maximum use of commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) technology. The JBTDS program is coordinating with Common Analytical Laboratory System and Next Generation Diagnostic System (NGDS) to share information and leverage potential common identification technology solutions. JBTDS utilized NGDS contract vehicle to research and develop a JBTDS tactical variant identifier. Identifier testing will take place during EMD to evaluate technologies against requirements and find the best solution(s) for the warfighter. Full and open competition was utilized at MS B for the Engineering and Manufacturing Development (EMD) contract with options for Low Rate Initial Production and Full Rate Production. Chemring Detection Systems was awarded the EMD contract on 2 April 2015. The JBTDS will address legacy SPU requirements gaps/deficiencies where they exist through the streamlined development and optimization of COTS/GOTS systems; awarded 3 sole-source contracts in July 2015 under the National Security exemption to full and open competition.

NEXT GENERATION CHEMICAL DETECTOR (NGCD)

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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System Engineering and market survey results suggested the most effective way to develop NGCD was to divide the program into four unique capabilities to detect and identify the full spectrum of chemical compounds in all phases of matter. There are four capability areas, of which three; NGCD 1, NGCD 2 and NGCD 3 were awarded contracts in the Technical Maturation and Risk Reduction Phase. The fourth capability - personal chemical detection is still in technology development. The Government awarded ten (10) contracts in June 2014 to support Technology Maturation Risk Reduction (TMRR) acquisition phase activities in three of the four capability areas: three (3) contracts for the NGCD 1 capability, four (4) contracts for the NGCD 2 capability, and three (3) contracts for the NGCD 3 capability; only 9 are still under contract. Full and Open competition will be used to award at MS B Engineering and Manufacturing Development (EMD) contracts with production options for each capability.

NON TRADITIONAL AGENT DEFENSE (NTA DEFENSE)

The Non-Traditional Agent (NTA) Defense program supports the Chemical Biological Defense Program (CBDP) to develop countermeasures for all emerging threats across all commodities. The NTA Defense program consists of a number of projects and initiatives through various types of contract actions (full and open competition, task order/modifications, DLA) that enhance the CBDP's portfolio and mission and feed directly into Programs of Record, Enhanced Capability Demonstrations, and Acquisition Programs. NTA Defense efforts: (1) evaluate COTS and GOTS technologies and systems, (2) conduct demonstrations and experiments, (3) integrate Intelligence Community threat analysis, operational risk analysis with systems technical performance to identify technologies or systems that can be rapidly developed, and deployed, and/or transitioned to an Acquisition Program for technology insertion or derive an Engineering Change Proposal (ECP) to a fielded system, and (4) provide coordination of DoD, interagency, international NTA projects.

GLOBAL BIO TECH INITIATIVE (GBTI)

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

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program			Date: May 2017
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - HW C - Detector	MIPR	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	0.000	0.000		0.000		2.000	Jan 2018	-		2.000	Continuing	Continuing	0.000
EMBD - HW S - Prototype Development and Manufacturing	MIPR	TBD : TBD	0.000	0.000		0.000		5.958	Mar 2018	-		5.958	Continuing	Continuing	0.000
JNBCRS 1 - HW - Sensor Processing Group Development	MIPR	Armament Research : Development and Engineering Center, Piccatinny, NJ	0.000	0.000		0.000		1.200	Feb 2018	-		1.200	Continuing	Continuing	0.000
JNBCRS 1 - HW-Sensor Suite Development	C/CPIF	Various : Various	0.000	0.000		0.000		13.301	Dec 2017	-		13.301	Continuing	Continuing	0.000
JBTDS - HW S - EMD Contract Award	C/CPIF	Chemring Detection Systems : Inc., Charlotte, NC	5.937	7.675	Nov 2015	3.599	Nov 2016	0.700	Dec 2017	-		0.700	Continuing	Continuing	0.000
JBTDS - HW C - Tactical Common Identifier	C/CPFF	BioFire Dx : Salt Lake City, UT	7.118	6.431	Mar 2016	5.300	Nov 2016	8.891	Mar 2018	-		8.891	Continuing	Continuing	0.000
JBTDS - HW C - NBCRV Platform Integration	MIPR	TBD : TBD	0.000	0.000		2.670	Mar 2017	0.150	Dec 2017	-		0.150	Continuing	Continuing	0.000
JBTDS - HW C - SPU	SS/FFP	Biomeme : Philadelphia, PA	1.660	2.389	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - HW C - SPU Genedrive	SS/FFP	Epistem : Manchester, UK	2.533	1.702	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - HW C - SPU Mobile Analysis Platform (MAP)	SS/CPFF	Ibis : Carlsbad, CA	1.995	1.996	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype Build	C/CPIF	Smiths Detection : Edgewood, MD	0.453	0.000		13.132	Dec 2016	1.200	Dec 2017	-		1.200	Continuing	Continuing	0.000
NGCD - HW S - NGCD 1	C/CPIF	TBD : TBD	0.000	0.000		0.000		11.274	Nov 2017	-		11.274	Continuing	Continuing	0.000
NGCD - HW S - NGCD 2	C/CPIF	TBD : TBD	0.000	0.000		0.000		11.236	Jan 2018	-		11.236	Continuing	Continuing	0.000
NGCD - HW S - NGCD 3	C/CPIF	TBD : TBD	0.000	0.000		0.000		9.835	Dec 2017	-		9.835	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program			Date: May 2017
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NTA DEFENSE - HW S - Systems Engineering	C/CPFF	Various : Various	0.000	1.905	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Strategic Coordination	MIPR	Various : Various	1.314	1.091	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Fielded Equipment Characterization	MIPR	Various : Various	0.002	0.000		0.645	Mar 2017	0.000		-		0.000	Continuing	Continuing	0.000
GBTI - HW S - GBTI - CRP Assay Optimization	MIPR	Battelle Memorial Institute : Columbus, OH	0.000	1.277	Dec 2015	1.000	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	21.012	24.466		26.346		65.745		-		65.745	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - ES S - OTA/OGA Service Representation USN Variant	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.000	0.000		1.123	Mar 2017	0.500	Jan 2018	-		0.500	Continuing	Continuing	0.000
EMBD - ILS S - OTA/OGA Service Representation USN Variant	MIPR	Various : Various	0.000	0.000		0.671	Mar 2017	0.000		-		0.000	Continuing	Continuing	0.000
JHBI - ES S - Engineering and IPT Support	MIPR	Various : Various	0.000	0.000		0.000		0.490	Nov 2017	-		0.490	Continuing	Continuing	0.000
JNBCRS 1 - ES - Engineering Support	MIPR	Various : Various	0.000	0.000		0.000		0.748	Nov 2017	-		0.748	Continuing	Continuing	0.000
JBTDS - ES C - Engineering Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	2.000		0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBTDS - ES S - OTA/OGA Service Representation	MIPR	Various : Various	3.073	2.966	Mar 2016	2.140	Mar 2017	3.016	Mar 2018	-		3.016	Continuing	Continuing	0.000
JBTDS - ES S - Biosensor Calibration Effort	MIPR	Naval Research Lab (NRL) : Washington, DC	1.675	0.600	Mar 2016	0.000		0.400	Mar 2018	-		0.400	Continuing	Continuing	0.000
JBTDS - ILS S - Reliability Growth Model	MIPR	United States Army Materiel Systems Analysis Activity(AMSAA) : Aberdeen Proving Ground, MD	0.000	0.043	Mar 2016	0.075	Mar 2017	0.120	Mar 2018	-		0.120	Continuing	Continuing	0.000
JBTDS - ES S - OTA/ OGA Representation USN Variant	MIPR	Various : Various	0.000	0.225	Jun 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - ES S - Joint Service T&E/SE IPT	MIPR	Various : Various	0.000	0.705	Oct 2015	0.000		3.010	Oct 2017	-		3.010	Continuing	Continuing	0.000
NTA DEFENSE - ES C - Support	C/CPFF	Various : Various	0.000	0.235	Jan 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - ES S - Analysis and Evaluation	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.183	0.058	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - TD/D C - Integrated Product Team (IPT) Support	MIPR	Various : Various	2.008	0.000		0.124	Mar 2017	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	6.939	6.832		4.133		8.284		-		8.284	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - DTE C - Live Agent Testing	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		0.000		2.000	Jul 2018	-		2.000	Continuing	Continuing	0.000
JHBI - DTE S - Test and Evaluation Support	MIPR	Various : Various	0.000	0.000		0.000		0.500	Nov 2017	-		0.500	Continuing	Continuing	0.000
JNBCRS 1 - DTE - Test and Evaluation	MIPR	Various : Various	0.000	0.000		0.000		0.700	Jul 2018	-		0.700	Continuing	Continuing	0.000
JBTDS - DTE S - Developmental Testing	MIPR	Various : Various	0.499	0.766	Mar 2016	4.218	Mar 2017	0.720	Mar 2018	-		0.720	Continuing	Continuing	0.000
JBTDS - DTE S - V&V of JBTDS Military Utility Model	FFRDC	Institute for Defense Analysis (IDA) : Alexandria, VA	0.464	0.100	Dec 2015	0.000		0.250	Dec 2017	-		0.250	Continuing	Continuing	0.000
JBTDS - DTE S - Development Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.089	Mar 2016	0.000		0.400	Mar 2018	-		0.400	Continuing	Continuing	0.000
JBTDS - DTE S - Dynamic Aerosol Generation System	MIPR	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	0.444	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - DTE S - Battelle	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.814	Mar 2016	0.000		2.600	Mar 2018	-		2.600	Continuing	Continuing	0.000
JBTDS - DTE S - Various	MIPR	Various : Various	0.000	0.000		0.000		3.350	Dec 2017	-		3.350	Continuing	Continuing	0.000
JBTDS - DTE S - Development Testing USN Variant	MIPR	Various : Various	0.000	0.431	Jun 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - NGCD 1 - PQT Chamber Test	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		3.200	Dec 2017	-		3.200	Continuing	Continuing	0.000
NGCD - NGCD 1 - PQT Survivability /	MIPR	Various : Various	0.000	0.000		0.000		1.647	Dec 2017	-		1.647	Continuing	Continuing	0.000

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Interoperability/ Enviromental															
NGCD - NGCD 2- Customer Testing	MIPR	Various : Various	0.000	0.000		0.000		0.750	Jun 2018	-		0.750	Continuing	Continuing	0.000
NGCD - NGCD 3 - Customer Testing	MIPR	Various : Various	0.000	0.000		0.000		0.800	Mar 2018	-		0.800	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Equipment	MIPR	Defense Logistics Agency : Philadelphia, PA	0.000	3.653	May 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Developmental Test and Evaluation	C/CPFF	MRIGlobal : Kansas City, MO	0.000	0.000		0.000		0.174	Jan 2018	-		0.174	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Developmental Test and Evaluation #2	C/CPFF	Battelle Memorial Institute : Columbus, OH	1.728	0.059	Mar 2016	0.000		0.436	Mar 2018	-		0.436	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Developmental Test and Evaluation #3	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.280	0.000		0.300	Dec 2016	0.261	Jan 2018	-		0.261	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Analysis and Evaluation	FFRDC	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	1.545	1.750	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
GBTI - Test and Evaluation of Technology Refresh Candidates	MIPR	Various : Various	0.000	0.000		0.000		1.285	Dec 2017	-		1.285	Continuing	Continuing	0.000
		Subtotal	4.516	8.106		4.518		19.073		-		19.073	-	-	0.000

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - PM/MS S - PM/ System Engineering Support USN Variant	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.000		2.205	Dec 2016	3.620	Dec 2017	-		3.620	Continuing	Continuing	0.000
JNBCRS 1 - PM - Program Management and System Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.000		0.000		2.003	Nov 2017	-		2.003	Continuing	Continuing	0.000
JBTDS - PM/MS SB - Program Management and System Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	12.719	9.735	Dec 2015	6.032	Dec 2016	8.983	Dec 2017	-		8.983	Continuing	Continuing	0.000
JBTDS - PM/MS C - Program Management and System Engineering Support USN Variant	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	1.444	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - PM/MS SB - Program Management and System Engineering Support SPU	MIPR	Various : Various	0.404	0.334	Feb 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - PM/MS C - Program Management and Systems Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	1.625	1.599	Dec 2015	3.695	Dec 2016	15.035	Dec 2017	-		15.035	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NTA DEFENSE - PM/MS S - Program Management Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	4.358	1.325	Mar 2016	0.105	Dec 2016	0.317	Dec 2017	-		0.317	Continuing	Continuing	0.000
GBTI - PM/MS C - GBTI - Laboratory Operational Demonstrations	MIPR	Various : Various	0.000	0.939	Dec 2015	2.369	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
GBTI - PM/MS S - GBTI - Network Analysis and Characterization	MIPR	Various : Various	0.000	0.000		0.000		1.685	Jun 2018	-		1.685	Continuing	Continuing	0.000
GBTI - PM/MS C - GBTI - Project Engagement	MIPR	Various : Various	0.000	0.000		0.000		2.754	Nov 2017	-		2.754	Continuing	Continuing	0.000
GBTI - PM/MS C - Bioinformatics	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.688	Jan 2016	0.800	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	19.106	16.064		15.206		34.397		-		34.397	-	-	0.000

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	51.573	55.468		50.203		127.499		-		127.499	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

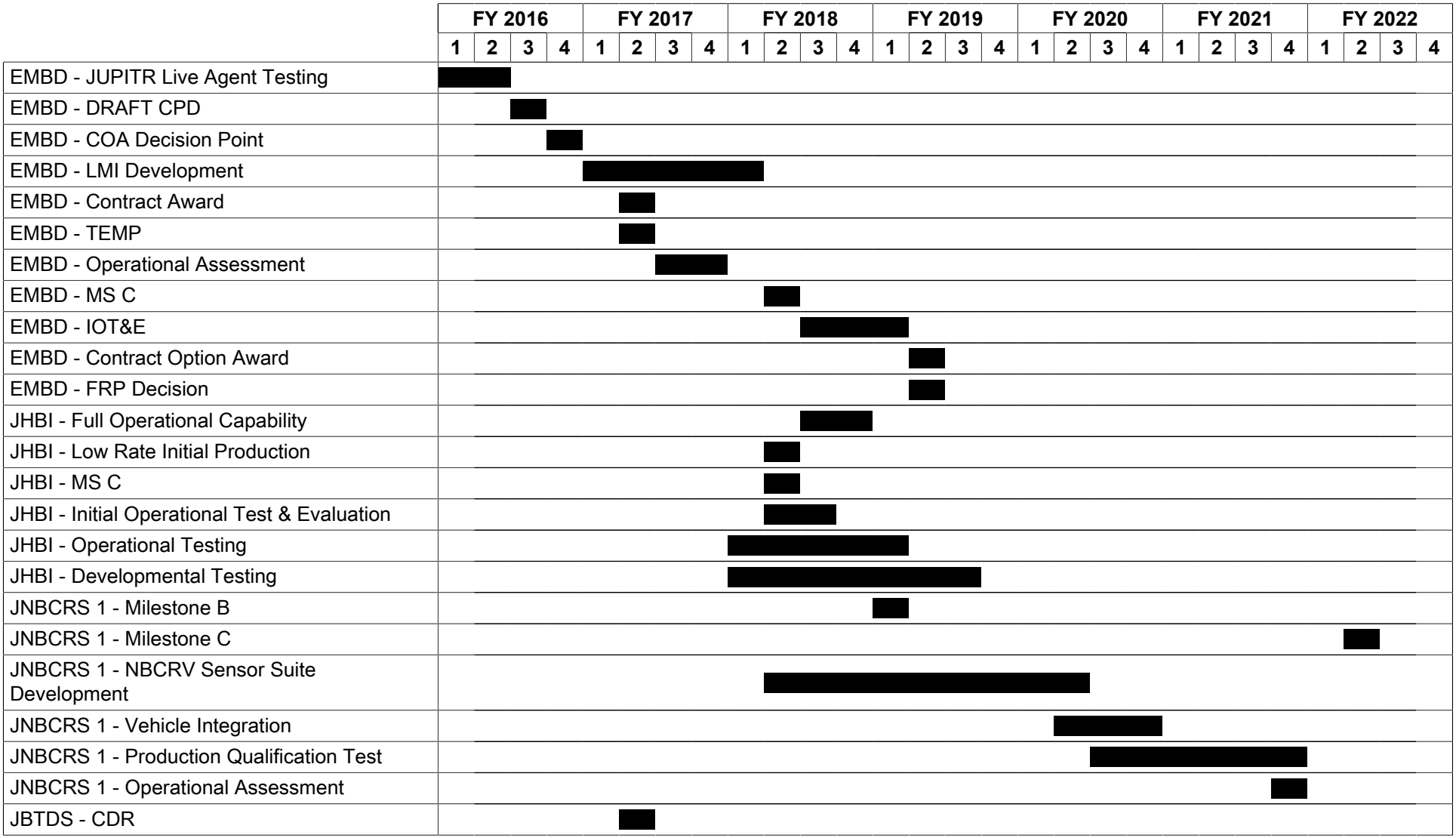

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

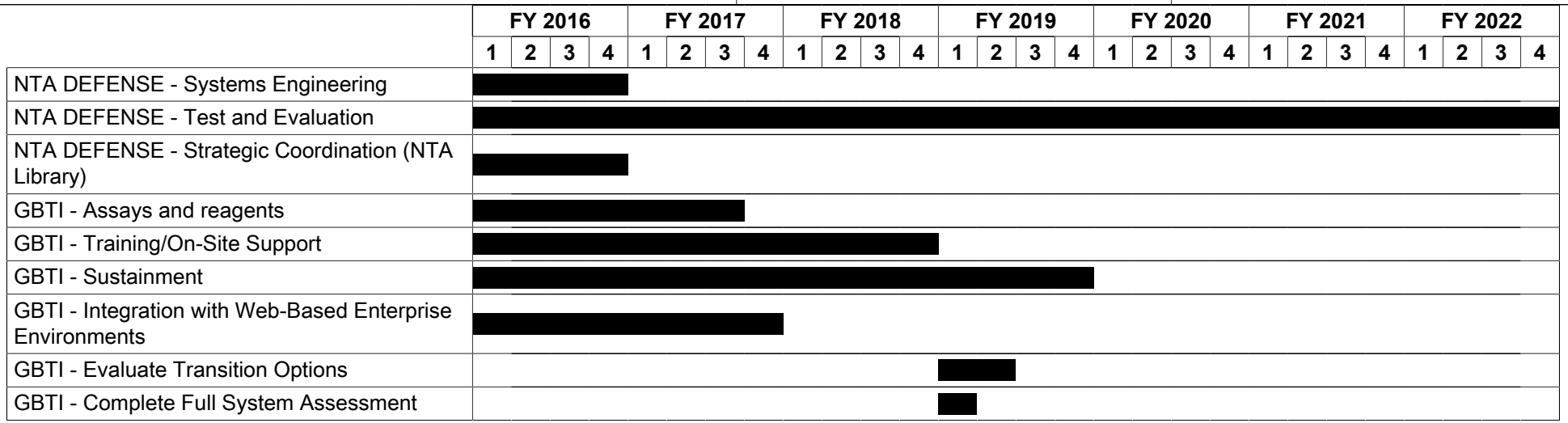

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
EMBD - JUPITR Live Agent Testing	1	2016	2	2016
EMBD - DRAFT CPD	3	2016	3	2016
EMBD - COA Decision Point	4	2016	4	2016
EMBD - LMI Development	1	2017	1	2018
EMBD - Contract Award	2	2017	2	2017
EMBD - TEMP	2	2017	2	2017
EMBD - Operational Assessment	3	2017	4	2017
EMBD - MS C	2	2018	2	2018
EMBD - IOT&E	3	2018	1	2019
EMBD - Contract Option Award	2	2019	2	2019
EMBD - FRP Decision	2	2019	2	2019
JHBI - Full Operational Capability	3	2018	4	2018
JHBI - Low Rate Initial Production	2	2018	2	2018
JHBI - MS C	2	2018	2	2018
JHBI - Initial Operational Test & Evaluation	2	2018	3	2018
JHBI - Operational Testing	1	2018	1	2019
JHBI - Developmental Testing	1	2018	3	2019
JNBCRS 1 - Milestone B	1	2019	1	2019
JNBCRS 1 - Milestone C	2	2022	2	2022
JNBCRS 1 - NBCRV Sensor Suite Development	2	2018	2	2020
JNBCRS 1 - Vehicle Integration	2	2020	4	2020
JNBCRS 1 - Production Qualification Test	3	2020	4	2021

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JNBCRS 1 - Operational Assessment	4	2021	4	2021
JBTDS - CDR	2	2017	2	2017
JBTDS - DT	1	2016	2	2018
JBTDS - Operational Assessment	3	2018	3	2018
JBTDS - Capability Production Document	2	2018	1	2019
JBTDS - Milestone C	2	2019	2	2019
JBTDS - PVT	1	2021	2	2021
JBTDS - OT	4	2017	2	2018
JBTDS - FRP Decision	3	2021	3	2021
JBTDS - IOC	4	2021	4	2021
NGCD - Acceleration	1	2016	4	2018
NGCD - NGCD (1-3) TMRR	1	2016	3	2017
NGCD - NGCD 1 - Milestone B	4	2017	4	2017
NGCD - NGCD 1 - EMD Contract	1	2019	2	2020
NGCD - NGCD 1 - Milestone C	2	2020	2	2020
NGCD - NGCD 1 - LRIP	2	2020	4	2021
NGCD - NGCD 1 - FRP Decision	4	2021	4	2021
NGCD - NGCD 2 - Milestone B	3	2018	3	2018
NGCD - NGCD 2 - EMD Contract	3	2018	4	2020
NGCD - NGCD 2 - Milestone C	1	2021	1	2021
NGCD - NGCD 2 - LRIP	2	2021	4	2022
NGCD - NGCD 3 - Milestone B	2	2018	2	2018
NGCD - NGCD 3 - EMD Contract	2	2018	3	2020
NGCD - NGCD 3 - Milestone C	3	2020	3	2020
NGCD - NGCD 3 - LRIP	3	2020	3	2022

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
NGCD - NGCD 3 - FRP	3	2022	3	2022
NTA DEFENSE - Threat Understanding	1	2016	2	2016
NTA DEFENSE - Systems Engineering	1	2016	4	2016
NTA DEFENSE - Test and Evaluation	1	2016	4	2022
NTA DEFENSE - Strategic Coordination (NTA Library)	1	2016	4	2016
GBTI - Assays and reagents	1	2016	3	2017
GBTI - Training/On-Site Support	1	2016	4	2018
GBTI - Sustainment	1	2016	4	2019
GBTI - Integration with Web-Based Enterprise Environments	1	2016	4	2017
GBTI - Evaluate Transition Options	1	2019	2	2019
GBTI - Complete Full System Assessment	1	2019	1	2019

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program			Date: May 2017
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COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
CM5: *HOMELAND DEFENSE (EMD)*	-	6.880	11.224	21.411	-	21.411	0.000	0.000	0.000	0.000	0	39.515
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project supports Engineering and Manufacturing Development of the following program: The Common Analytical Laboratory System capability (CALS) will be modular, scalable and adaptable to a variety of concept of operations (CONOPS) and environmental conditions. Currently, fielded systems have been designed and fielded independently by the services with the intent of meeting a specific unit requirement. As a result, multiple mobile lab configurations exist with differing sustainment tails and lacking in commonality. The CALS will provide common analytical capabilities packaged to meet the specific CONOPS and mission of the gaining unit. The analytical capabilities will detect and identify Chemical Warfare Agents (CWAs), Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs) and Biological Warfare Agents (BWAs). Users of the system will include the National Guard Bureau Civil Support Teams, the Army 20th Support Command, the Army Medical Laboratory, the Air Force, the Marine Corps, and the Navy.

There will be three variants of CALS as detailed below:

1. Field Confirmatory Integrated System (FC-IS) Variant - NGB and Marine Corp User
-Integrates CBR systems into a common make / model 20-foot International Standard Organization (ISO) container. The container will be integrated onto the International Durastar vehicle to support employment.

2. Theater Validation Integrated System (TV-IS) Variant - Army User
-Similar to the FC-IS but provides a higher level of confidence in analytical results through the use of orthogonal (complimentary) technologies and an expanded analytical suite. This system employs multiple standardized ISO containers, which will be integrated onto one Family of Medium Tactical Vehicles (FMTV) and one trailer, to support the needed additional laboratory space.

3. Field Confirmatory Analytical Capability Sets (FC-ACS) Variant - Army, Navy, Air Force and NGB User - A palletized / transportable equipment subsets that allows them to be loaded into transport cases and palletized. Enables the users to receive the Chemical and Biological (CB) subsystems that meet their specific mission profiles.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: 1) CALS - Subsystem Component Test and Evaluation	2.930	-	-
FY 2016 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Completed EMD sub-system DT/OT in preparation for Milestone C.			
Title: 2) CALS - System Level Prototype Variant Development and Manufacturing ***FY 2017 Plans:*** Continue engineering changes and refurbishment of variant prototypes ensuring integration and connectivity between modules as a general system layout. ***FY 2018 Plans:*** Continue engineering changes and refurbishment of variant prototypes ensuring integration and connectivity between modules as a general system layout. Major system design changes are required during the EMD phase for the FC IS and TV IS variants, this was directed by the Joint Requirements Office (JRO)	-	3.648	6.554
Title: 3) CALS - System Level Test and Evaluation ***FY 2016 Accomplishments:*** Initated System Level Developmental Test (DT), Logistics Demonstration and contract verification testing for field confirmatory and theater validation variants. ***FY 2017 Plans:*** Continue System Level Developmental Test (DT), Logistics Demonstration and contract verification testing for field confirmatory and theater validation variants. ***FY 2018 Plans:*** Continue System Level Developmental Test (DT), Logistics Demonstration and contract verification testing for field confirmatory and theater validation variants. Initiate Operational Test for the Analytical Capability Sets (ACS).	0.150	3.182	7.293
Title: 4) CALS - System Integration Laboratory ***FY 2017 Plans:*** Continue system integration laboratory analysis risk reduction and activities to incorporate analysis of variant system configurations, capabilities, engineering controls, information assurance and DoD Information Assurance Certification and Accreditation Procedure (DIACAP) requirements. ***FY 2018 Plans:*** Complete system integration laboratory analysis risk reduction and activities to incorporate analysis of variant system configurations, capabilities, engineering controls, information assurance and DoD Information Assurance Certification and Accreditation Procedure (DIACAP) requirements.	-	0.400	0.642
Title: 5) CALS - Safety Release Internal Review Board	0.100	0.182	0.200

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2016 Accomplishments: Initiated the process for obtaining safety release for all CALS variants in preparation for Logistics Demonstration. Safety release for all equipment is required prior to utilizing active duty personnel for testing activities. ***FY 2017 Plans:*** Continue the process for obtaining safety release for all CALS variants in preparation for Logistics Demonstration. Safety release for all equipment is required prior to utilizing active duty personnel for testing activities. ***FY 2018 Plans:*** Continue the process for obtaining safety release for all CALS variants in preparation for Logistics Demonstration. Safety release for all equipment is required prior to utilizing active duty personnel for testing activities.			
Title: 6) CALS - System Engineering and Program Management ***FY 2016 Accomplishments:*** Continued System and Program Management Support to provide management and engineering, quality assurance and design support in preparation of Critical Design Review, manufacture of prototypes, and testing. ***FY 2017 Plans:*** Continue System and Program Management Support to provide management and engineering, quality assurance and design support in preparation of Critical Design Review, manufacture of prototypes, and testing. ***FY 2018 Plans:*** Continue System and Program Management Support to provide management and engineering, quality assurance and design support in preparation of Critical Design Review, manufacture of prototypes, and testing. Major system design changes are required during the EMD phase for the FC IS and TV IS variants, this was directed by the Joint Requirements Office (JRO).	3.700	3.812	6.722
Accomplishments/Planned Programs Subtotals	6.880	11.224	21.411

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• JS0004: *WMD - CIVIL SUPPORT TEAMS (WMD CST)*	8.206	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0	8.206
• JS0005: *COMMON ANALYTICAL LABORATORY SYSTEM (CALS)*	0.000	23.100	16.402	-	16.402	51.018	59.170	75.409	75.514	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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D. Acquisition Strategy

COMMON ANALYTICAL LABORATORY SYSTEM (CALS)

The Common Analytical Laboratory System (CALS) will be developed using an Incremental approach, leveraging both Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) analytical components to support the identification of Chemical, Biological, Radiological and Non-traditional agent materials in environmental samples technology. The (CALS) program is designed to provide an affordable, modular, scalable and sustainable field analytic capability that can be readily transported to meet the mission profile and requirements of the gaining organization. Increment 1 will consist of (3) variants which will be fielded, in accordance with mission need, to components of the Air Force, Army, Marines, Navy and National Guard Bureau requiring CBRN field confirmatory analytical detection capability. Post Milestone B (FY15), a hybrid contract (CPIF / FPI / FFP) was awarded to develop, design and build these system variant prototypes in order to conduct developmental test (DT) and evaluation. The Field Confirmatory Analytical Capability Set (FC ACS) will enter DT first and is expected to reach an early Milestone C - Low Rate Initial Production (LRIP) (FY17) followed by a Full Rate Production (FRP) Decision prior to the Milestone C (LRIP) (FY19) and (FRP) Decision for the FC and TV Integrated Systems. After each Milestone C, contracts will be awarded to produce the (3) variants of the Common Analytical Laboratory System using Fixed Price (FP) Contract vehicles.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - HW S - ACS Operational Test (OT)	C/FP	TBD : TBD	0.000	0.000		0.000		3.439	Mar 2018	-		3.439	0.000	3.439	0.000
CALS - HW S Prototype System Manufacturing	C/CPIF	Battelle Memorial Institute : Columbus, OH	24.596	0.000		3.648	Jan 2017	6.554	Dec 2017	-		6.554	0.000	34.798	0.000
CALS - HW S - NGDS Tactical Variant Alpha Prototype	C/CPFF	BioFire Dx : Salt Lake City, UT	1.501	0.000		0.000		0.354	Mar 2018	-		0.354	0.000	1.855	0.000
		Subtotal	26.097	0.000		3.648		10.347		-		10.347	0.000	40.092	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - ES S - CALS - Engineering Support System	C/FFP	Various : Various	4.843	2.930	Feb 2016	2.377	Feb 2017	3.308	Feb 2018	-		3.308	0.000	13.458	0.000
CALS - ES C - Other Government Agencies (DT/OT)	MIPR	Various : Various	0.000	0.000		0.000		0.946	Jan 2018	-		0.946	0.000	0.946	0.000
CALS - ES S - System Integration Laboratory Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.936	0.000		0.400	Jan 2017	0.642	Jan 2018	-		0.642	0.000	1.978	0.000
CALS - TD/D S - CALS - Safety Internal Review Board	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.182	Mar 2017	0.200	Mar 2018	-		0.200	0.000	0.382	0.000
		Subtotal	5.779	2.930		2.959		5.096		-		5.096	0.000	16.764	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - DTE S - DT/OT and LOGDEMO	C/CPIF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		0.000		1.267	Jan 2018	-		1.267	0.000	1.267	0.000
CALS - DTE S - System DT/OT and LOGDEMO	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.000		3.182	Feb 2017	1.818	Jan 2018	-		1.818	0.000	5.000	0.000
CALS - OTHT C - Operation Test Agencies	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.150	Jan 2016	0.000		1.977	Jan 2018	-		1.977	0.000	2.127	0.000
		Subtotal	0.000	0.150		3.182		5.062		-		5.062	0.000	8.394	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - PM/MS HW - Program Office - Planning and Programming	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	2.653	3.800	Mar 2016	1.435	Mar 2017	0.906	Jan 2018	-		0.906	0.000	8.794	0.000
		Subtotal	2.653	3.800		1.435		0.906		-		0.906	0.000	8.794	0.000

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	34.529	6.880		11.224		21.411		-		21.411	0.000	74.044	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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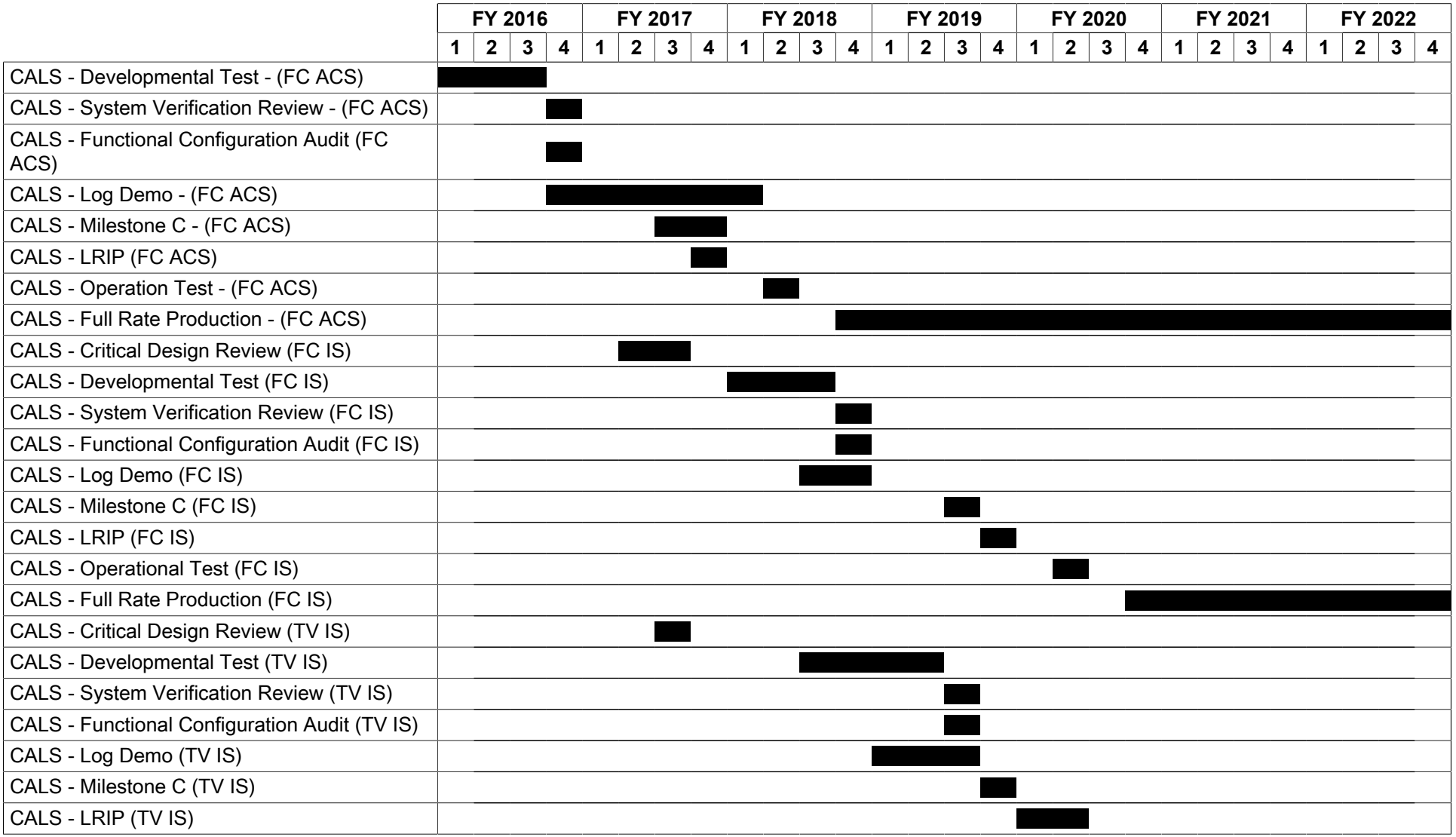

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

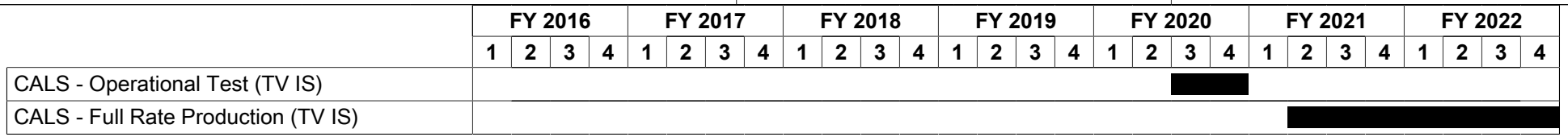

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CALS - Developmental Test - (FC ACS)	1	2016	3	2016
CALS - System Verification Review - (FC ACS)	4	2016	4	2016
CALS - Functional Configuration Audit (FC ACS)	4	2016	4	2016
CALS - Log Demo - (FC ACS)	4	2016	1	2018
CALS - Milestone C - (FC ACS)	3	2017	4	2017
CALS - LRIP (FC ACS)	4	2017	4	2017
CALS - Operation Test - (FC ACS)	2	2018	2	2018
CALS - Full Rate Production - (FC ACS)	4	2018	4	2022
CALS - Critical Design Review (FC IS)	2	2017	3	2017
CALS - Developmental Test (FC IS)	1	2018	3	2018
CALS - System Verification Review (FC IS)	4	2018	4	2018
CALS - Functional Configuration Audit (FC IS)	4	2018	4	2018
CALS - Log Demo (FC IS)	3	2018	4	2018
CALS - Milestone C (FC IS)	3	2019	3	2019
CALS - LRIP (FC IS)	4	2019	4	2019
CALS - Operational Test (FC IS)	2	2020	2	2020
CALS - Full Rate Production (FC IS)	4	2020	4	2022
CALS - Critical Design Review (TV IS)	3	2017	3	2017
CALS - Developmental Test (TV IS)	3	2018	2	2019
CALS - System Verification Review (TV IS)	3	2019	3	2019
CALS - Functional Configuration Audit (TV IS)	3	2019	3	2019
CALS - Log Demo (TV IS)	1	2019	3	2019

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CALS - Milestone C (TV IS)	4	2019	4	2019
CALS - LRIP (TV IS)	1	2020	2	2020
CALS - Operational Test (TV IS)	3	2020	4	2020
CALS - Full Rate Production (TV IS)	2	2021	4	2022

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program			Date: May 2017
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) CO5 / *COLLECTIVE PROTECTION (EMD)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
CO5: *COLLECTIVE PROTECTION (EMD)*	-	7.228	4.224	8.546	-	8.546	10.802	5.333	4.930	0.000	0	41.063
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project supports Engineering and Manufacturing Development and Low Rate Initial Production (EMD/LRIP) of Joint Service Chemical, Biological, and Radiological (CBR) Collective Protection (CP) systems that are smaller, lighter, less costly to produce and maintain, and more logistically supportable enabling mission accomplishment in CBR environments. CP systems can be installed on any type of platform, such as, hard and soft shelters, vehicles, ships, aircraft, and buildings. CP systems provide spaces safe from the effects of CBR contamination. Experimentation and demonstration will be used in this phase to reduce risk and inform supporting Concept of Operations (CONOPS) and Tactics, Techniques and Procedures (TTPs).

The systems included in this project are the Chemical-Biological Aircraft Survivability Barrier (CASB) and Joint Expeditionary Collective Protection (JECP) Family of Systems.

The CASB will be a new start in FY18 and provide a lightweight, low-cost, expendable, negative-pressure enclosure that will protect the interior of multi-service aircraft (H-47, V22, C-130) capable of airlifting/exfiltrating chemically or biologically contaminated personnel, equipment, contagious patients, and cargos while preserving the aircraft for continued unrestricted operations without need for extensive decontamination.

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: 1) Chemical and Biological Aircraft Survivability Barrier (CASB)	-	-	3.247
Description: Developmental Testing and Prototype Development			
FY 2018 Plans: Conduct Technical reviews to include a Technology Readiness Assessment (TRA), Manufacturing Readiness Assessment (MRA), Critical Design Review (CDR), Draft Request for Proposal (RFP), Lifecycle Sustainment Plan (LCSP) and Test and Evaluation			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *COLLECTIVE PROTECTION (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Master Plan (TEMP), Initiate Developmental Testing on prototypes to include chemical and biological filtration protection, swatch/ permeation, reliability/availability.			
Title: 2) JECP - Phase 1 Low Rate Initial Production (LRIP) ***Description:*** Low rate initial production contract events. ***FY 2016 Accomplishments:*** Continued updates to the technical manuals, training package and all logistic support products in preparation for Full Rate Production (FRP) / material release decision. Continued updates to the level III drawing package. Conducted physical configuration audit and full rate production manufacturing readiness assessment. Prepared for FRP.	4.842	-	-
Title: 3) JECP - Phase 1 Developmental and Operational Testing ***Description:*** Logistics demonstration, developmental and operational test events. ***FY 2016 Accomplishments:*** Conducted MOT&E II without a field chemical simulant challenge to test the operational capabilities of the system to support service specific missions. Completed logistics demonstration.	2.386	-	-
Title: 4) JECP - Phase 2 System Development and Demonstration ***Description:*** Phase 2 system development and demonstration events. ***FY 2017 Plans:*** Generate Engineering Change Proposal(s) and begin design and development of Phase 2 tent kits to address emerging service requirements for collective protection to new host platforms. Efforts will include prototyping, identifying and beginning changes to logistic support products and beginning update of the Govt owned Tech Data Package. ***FY 2018 Plans:*** Continue design and development of Phase 2 tent kits to address emerging service requirements for collective protection to new host platforms. Continue prototyping, changes to logistic support products, and continue updates to the Govt owned Tech Data Package. Begin test planning and initiate developmental testing.	-	4.224	5.299
Accomplishments/Planned Programs Subtotals	7.228	4.224	8.546

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *COLLECTIVE PROTECTION (EMD)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• JP1111: *JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)*	5.626	12.449	10.728	-	10.728	22.752	17.592	22.218	25.793	Continuing	Continuing

Remarks

D. Acquisition Strategy

CHEMICAL BIOLOGICAL AIRCRAFT SURVIVABILITY BARRIER (CASB)

CASB will field a capability that will support the overall intent of the (Aircraft CBRN Contamination Survivability ACCS) Initial Capabilities Development (ICD) in the areas of barriers, aircraft containment systems, modular Collective Protection (ColPro) for aircraft interiors, and disposable ColPro. CASB is one member of a family of systems that will support the ICD. It will protect the interior of DoD airlift assets from incidental cross-contamination by CB-contaminated personnel and equipment and cargos under transport. The overall strategy is to utilize primary materials (air filtration and flexible barrier material) currently in use by other programs in the CB defense portfolio in a negative pressure system specifically designed for airframe use. CASB will review existing materials and technology as well as designs, configurations, and test data from legacy systems developed for ColPro applications. Using this information, systems will be developed to meet the broader range of airframes and airframe specific requirements, chemical biological protection and logistic supportability that are now required. Based on commonality between the requirements of the CASB and the requirements of similar programs (i.e. Joint Expeditionary Collective Protection, TIS, and Aeromedical Biological Containment System), CASB will be initiated at MS B EMD phase to meet these expanded requirements within the various airframes. CASB will use the Joint Enterprise-Research, Development, Acquisition, Production/Procurement (JE-RDAP) IDIQ contract to pursue a Commercial-of-the-Shelf (COTS)/Government-of-the-Shelf (GOTS) development strategy using full and open competition for awards following MS B and MS C. During the EMD phase, CASB intends to award a Cost Plus Incentive Fee (CPIF) delivery order for the development and delivery of prototypes for airworthiness certification within two years. During the Production phase, CASB intends to pursue a Fixed Price Incentive Fee (FPIF) delivery order to reduce the logistical burden and sustainment costs, including a 6-month option to transition the CASB from the JE-RDAP to the JE-CLaSS contract for long-term sustainment.

JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)

Strategy based on evolutionary development, based on a family of systems approach. After MS B, awarded competitive Cost Plus Incentive Fee (CPIF) contract to Science Applications International Corporation (now Leidos) in 2008 to build prototypes subjected to robust engineering developmental testing and Operational Assessment during the Engineering and Manufacturing Development (EMD) phase. After MS C, awarded a Firm Fixed Price (FFP) option to Leidos in September 2013 for Low Rate Initial Production (LRIP) systems to support formal Developmental Testing (DT) and Multi-Service Operational Test & Evaluation (MOT&E) events. In addition, a Fixed Price Incentive Firm Target (FPIF) option was awarded to Leidos in January 2014 to perform non-recurring engineering (NRE) and logistic product development associated with the LRIP system configurations. A post MS C Milestone Decision Authority Acquisition Decision Memorandum, dated March 2014, separated the program into two phases. Phase 2 systems will be developed as engineering changes to Phase 1 systems. The Full Rate Production (FRP) decision for

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *COLLECTIVE PROTECTION (EMD)*

Phase 1 systems, dated December 2016, addressed business case analysis results and approved a full and open competition build-to-print production task order under the Joint Enterprise Research, Development, Acquisition, and Production/Procurement Contract. Phase 2 systems will undergo limited developmental and operational testing and then pursue a MS C full rate production decision. BA7 funding develops incremental improvements to fielded JECP variants.

E. Performance Metrics

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program											Date: May 2017	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*				Project (Number/Name) DE5 / *DECONTAMINATION SYSTEMS (EMD)*			
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
DE5: *DECONTAMINATION SYSTEMS (EMD)*	-	16.015	9.984	15.686	-	15.686	6.349	12.037	16.527	13.516	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides Engineering and Manufacturing Development (EMD) for: (1) Major Defense Acquisition Program (MDAP); (2) Contamination Indicator Decontamination Assurance System (CIDAS); (3) General Purpose Decontaminant (GPD); (4) Joint Service Equipment Wipe (JSEW); and (5) Joint Biological Agent Decontamination System (JBADS). Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, CONOPS and TTPs.

The MDAP CBRN Survivability Trail Boss ensures weapon system programs of all ACAT levels, as well as non-DoD agencies such as the Department of Homeland Security (DHS), meet their CBRN defense requirements. The initiative facilitates and coordinates the research, development, T&E, procurement, delivery, and life cycle sustainment of affordable CBRN defense materiel solutions to ACAT Program managers to meet their program's documented CBRN requirements. JSF Decon is an effort for MDAP.

The F-35 Joint Strike Fighter (JSF) Decontamination System MDAP project will develop an integrated decontamination containment system and decontaminant delivery system to support the JSF Program Office Live Fire Test and Evaluation (LFT&E) to satisfy specific F-35 decontamination requirements through aircraft-unique interfaces and demonstrate the aircraft's ability to meet CB decontamination and survivability requirements.

The CIDAS is a contamination indicator/decontamination assurance technology. It will consist of an indicator and an applicator, for which there will be three applicator configurations (small-scale, disposable large scale, and reusable large scale applicators) and three indicator formulations (training, nerve and blister indicators). The indicator will be sprayed on tactical vehicles, aircraft, ships, crew-served weapons, and individual weapons that may have been exposed to traditional and non-traditional chemical contamination. CIDAS is a new capability for the Joint Forces that will reduce the logistics burden of decontamination by indicating presence and location of traditional (Nerve and Blister) and non-traditional chemical agents on militarily relevant surfaces pre- and post-decontamination.

GPD is a liquid, field adjustable decontaminant for chemical and biological agents that will provide thorough decontamination capabilities for tactical vehicles, shipboard surfaces, crewserved weapons, and individual/personal weapons in hostile and non-hostile environments that have been exposed to traditional and non-traditional CB contamination while providing the lowest logistical footprint.

JSEW is a decontamination wipe that will provide immediate/operational decontamination capabilities for sensitive and non-sensitive equipment in hostile and non-hostile environments that have been exposed to chemical agents/contamination and shall decontaminate Nerve and Blister agents from a starting liquid challenge of 10 g/m2 to less than or equal to 1 g/m2 and non-traditional agents from a starting liquid challenge of 5 g/m2 to less than or equal to 1 g/m2. In addition, the JSEW is

intended to be a replacement for the Individual Equipment Decontamination Kit (M295). Follow on increments of JSEW may include biological agent capability and/or use on skin.

The JBADS will provide the capability to conduct biological and chemical agent decontamination of the interior and exterior of aircraft and vehicle platforms. The capabilities will be provided in two increments. Increment I will provide thorough biological decontamination of the interior and exterior of cargo aircraft. The JBADS Increment I is a capability set that will include a shelter to encapsulate an airframe, a decontamination delivery system (e.g. hot-humid air-blower, etc.), environmental control and monitoring system(s), and other ancillary components required to ensure efficacious biological agent decontamination. It will provide the capability to decontaminate biologically contaminated airframes to safe levels and allow more rapid return to service. Increment II will expand upon the Increment I capability set. Increment II will develop multiple decontaminants and modular designs to address various platforms and chemical agent decontamination.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: 1) MDAP Support JSF DECON SYSTEM	1.946	-	-
FY 2016 Accomplishments: Provided prototype system design changes and proof of concept testing. Provided the prototype system along with engineering and technical support to the JSF Program Office Live Fire Test and Evaluation (LFT&E) for Final System Demonstration.			
Title: 2) MDAP Support	-	0.155	0.157
FY 2017 Plans: Provide platform specific support for CBRN Survivability Assessments and integration of CBRN Detection, Protection and Decontamination assets.			
FY 2018 Plans: Provide platform specific support for CBRN Survivability Assessments and integration of CBRN Detection, Protection and Decontamination assets.			
Title: 3) CIDAS Test and Evaluation and Support	5.324	4.591	5.777
FY 2016 Accomplishments: Completed electromagnetic environmental effects developmental testing (DT). Conducted additional DT of nerve indicators and applicators to include indication level, decontaminant compatibility, detector compatibility, equipment compatibility, IPE compatibility, natural environmental factors, packaging, survivability and Reliability, Avalability and Maintainability. Developed Maintenance Task Analysis and Technical Manuals for Reusable Large Scale Applicator.			
FY 2017 Plans: Complete DT for nerve indicator and applicators. Conduct Technology Readiness Assessment, Technical Manual Validation and System Verification Review for nerve indicators and applicators.			
FY 2018 Plans:			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Receive LRIP deliveries and conduct Physical Configuration Audit of nerve indicator and applicators. Conduct Logistics Demonstration, Production Qualification Testing, and begin Multi-Service Operational Test and Evaluation of nerve indicator and applicators. Receive DT deliveries of blister indicator and prepare for DT.			
Title: 4) CIDAS LRIP Test and Evaluation ***Description:*** Production Development ***FY 2016 Accomplishments:*** Purchased 1253 CIDAS test assets (221 small scale applicators/nerve kits at $295 each; 25 small scale applicators/training kits at $162 each; 4 mid scale nerve indicator kits at $1709 each; 20 mid scale training indicator kits at $500 each; 810 large scale nerve indicator kits at $2687 each, and 179 large scale training indicator kits at $622 each) for DT; funded engineering support for engineering changes, training, test support and development of integrated product support deliverables. Developed disposable large scale applicator prototypes, conducted demonstrations and held a preliminary design review. ***FY 2017 Plans:*** Procure 12 small scale nerve and training indicator and applicator kit test assets (at $381 each) and conduct performance verification testing. ***FY 2018 Plans:*** Conduct Physical Configuration Audit of nerve indicator and applicators. Manufacturers will support Logistics Demonstration, Production Qualification Testing, and preparation for Multi-Service Operational Test and Evaluation of nerve indicator and applicators. Award contract for blister indicator DT articles.	1.272	0.169	3.706
Title: 5) GPD ***FY 2016 Accomplishments:*** Completed Developmental Testing (to include biological efficacy, shelf life, and compatibility testing), conducted a Technology Readiness Assessment (TRA), Functional Configuration Audit (FCA)/System Verification Review (SVR) and funded Service Support for generation on an Operational Milestone Assessment Report (OMAR) in support of Milestone C/Low Rate Initial Production.	3.124	-	-
Title: 6) JSEW ***FY 2016 Accomplishments:*** Conducted a Technology Readiness Review (TRR), Functional Configuration Audit (FCA), System Verification Review (SVR), Production Readiness Review (PRR), Executed Follow-on DT to prove out an Engineering Change Proposal (ECP) and provided	0.599	-	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Service Support for generating of program Operational Milestone Assessment Report (OMAR) in preparation for Milestone C/Low Rate Initial Production (LRIP) Decision.			
Title: 7) JBADS Increment I ***FY 2016 Accomplishments:*** Received modified Aircraft Enclosure Level 3 Engineering Drawings to be used with the Development Request for Proposal (RFP) release. Prepared documentation to support Milestone B Decision and release of the RFP currently scheduled for release in January 2017. ***FY 2017 Plans:*** Initiate and complete source selection and contract award activities for 4QFY17 award; start design and fabrication of first article. ***FY 2018 Plans:*** Conduct Product Verification Testing on JBADS system to include MIL-STD 810 and Human Factors Assessment.	2.423	5.069	5.923
Title: 8) JBADS Demonstration ***FY 2016 Accomplishments:*** Purchased five (5) Room Decontamination Systems (RDSs), five (5) Aeroclave Distribution Ports, and one (1) transPortable Asset Decontamination System (tPADS) to support a demonstration to assess their capabilities and identify trade space of these potential alternative capabilities for JBADS Increment 2 in regard to chemical decontamination of vehicles and smaller sensitive equipment items.	1.327	-	-
Title: 9) JBADS Increment II ***FY 2018 Plans:*** Continue IPT and Tech Support for JBADS Increment II efforts. Expand Bio-Thermal Decontamination (BTD) technology and increase technology readiness level for Chemical Warfare Agent Hot Air Decontamination (CHAD).	-	-	0.123
Accomplishments/Planned Programs Subtotals	16.015	9.984	15.686

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• JD0050: *DECONTAMINATION FAMILY OF SYSTEMS (DFoS)*	0.000	7.602	7.285	-	7.285	12.035	13.414	10.869	9.645	Continuing	Continuing
• JD0063: *CONTAMINATED HUMAN REMAINS POUCH (CHRP)*	1.100	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0	1.100

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

MAJOR DEFENSE ACQUISITION PROGRAM (MDAP)

MDAP is currently supporting the Joint Strike Fighter (JSF), Combat Rescue Helicopter (CRH, HH60 Recap), Abrams, Bradley, Armored Multipurpose Vehicle (AMPV), Stryker, Coast Guard Offshore Patrol Cutter (OPC), Coast Guard National Security Cutter (NSC), and Aegis Ashore. Additionally, the MDAP program is helping coordinate CBRN mission impact studies that will impact program manager's CBRN decision and risk matrices.

The F-35 Joint Strike Fighter (JSF) Decontamination System MDAP project is utilizing sole source contracting to leverage and integrate commercially available technologies to provide a decontamination delivery system for the Joint Strike Fighter Program Office in support of the JSF Live Fire Test and Evaluation (LFT&E). The Firm Fixed Price contracts have a period of performance to December 2016.

DFoS CONTAMINATION INDICATOR DECONTAMINATION ASSURANCE SYSTEM (DFoS CIDAS)

The CIDAS program will follow an evolutionary acquisition strategy in consonance with user developed capability documents. Following MS A, collaborated with program efforts, including the Hazard Mitigation, Materiel and Equipment Restoration (HaMMER) Advanced Technology Development Operational Demonstration and Extended User Evaluations, and conducted technology demonstrations on candidate indicator and applicator technologies to mitigate risk and identify affordable mature technologies that meet requirements. Determined need for and initiated Government designed reusable and disposable large scale applicators to provide affordable solutions to meet specific User requirements. Following MS B, used full and open competition to award a performance based indefinite quantity contract with fixed price incentive successive target contract line items, with options for LRIP and FRP for nerve indicator and small scale applicator systems. Will use a justification and approval to award a sole source, performance based indefinite quantity contract with price contract incentive successive target contract line items for a blister technology. Integrate and test the contractor and Government designs in the developmental and operational testing.

DFoS GENERAL PURPOSE DECONTAMINANT (DFoS GPD)

Due to the maturity levels of the systems entering the Technology Development (TD) phase, the Milestone Decision Authority (MDA) issued an Acquisition Decision Memorandum (ADM) which approved GPD to by-pass Milestone (MS) B and enter directly to MS C Low Rate Initial Production (LRIP). During the TD Phase, the GPD Program employed a Competitive Prototyping (CP) effort to facilitate the evaluation of Commercial Off The Shelf (COTS) technologies releasing a Request for Proposal (RFP) as a combined synopsis/solicitation for commercial and Non-Developmental Items (NDI), utilizing full and open competition. As the GPD Program entered the final phase of Technology Development (Developmental Test), the program continued to follow an evolutionary acquisition strategy. The production contract in support

of MS C is a single award for LRIP with four option years for FRP, using Full and Open Competition in accordance with FAR Subpart 6.1. This strategy ensures that all prospective sources, with the capability of meeting the program requirements, have the opportunity to participate.

DFoS JOINT SENSITIVE EQUIPMENT WIPE (DFoS JSEW)

Due to the maturity levels of the systems entering the Technology Development (TD) phase, the Milestone Decision Authority (MDA) issued an Acquisition Decision Memorandum (ADM) which approved JSEW to pursue a Milestone (MS) A to MS C Low Rate Initial Production (LRIP) acquisition strategy. During the TD Phase, the JSEW Program employed a Competitive Prototyping (CP) effort to facilitate the evaluation of Commercial Off The Shelf (COTS) technologies releasing a Request for Proposal (RFP) as a combined synopsis/solicitation for commercial and Non-Developmental Items (NDI), utilizing full and open competition. As the JSEW Program entered the final phase of Technology Development (Developmental Test), the program continued to follow an evolutionary acquisition strategy. The JSEW acquisition strategy used to support Developmental Testing (DT), Low Rate Initial Production (LRIP) and Full Rate Production (FRP) is a single contract award for DT (awarded 4QFY14), with options for LRIP and FRP, using Full and Open Competition in accordance with FAR Subpart 6.1. This strategy ensures that all prospective sources, with the capability of meeting the contract requirements, have the opportunity to participate.

JOINT BIOLOGICAL AGENT DECONTAMINATION SYSTEM (JBADS)

For Increment I, the program will leverage the Joint Biological Agent Decontamination System Joint Capability Demonstration (JCTD) and prior testing of candidate technologies to support a Milestone B decision in Engineering and Manufacturing Development (EMD), then a first article build to be retrofitted for fielding, if necessary, after a successful Operational Test and Fielding Decision.

JBADS Increment II will expand the biological agent decontamination capability to other platforms such as tactical and rotary wing aircraft, as well as ground vehicles. In addition, Increment II will provide chemical agent decontamination capabilities. Increment II will enter the acquisition process at Milestone B and a full and open Cost Plus Fixed Fee contract will be awarded to conduct the EMD phase. Candidate technologies will be evaluated during EMD to determine the most cost effective combination of biological and chemical agent decontamination for a variety of platforms. Following Milestone C/LRIP decision, a single, Firm Fixed Price production contract with full and open competition will be awarded.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MDAP - HW SB - JSF Decontamination Delivery System	SS/FFP	STERIS Corporation : Mentor, OH	0.364	0.729	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
MDAP - HW SB - JSF Decontamination Shelter and Heater	SS/FFP	HDT Global : Fredericksburg, VA	0.192	0.397	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
MDAP - HW SB - JSF Decontamination System Liner	SS/FFP	Production Products Inc. : St Louis, MO	0.433	0.733	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DFoS CIDAS - HW S - Nerve Test Assets	C/FPIF	FLIR Detection : Inc, Stillwater, OK	0.986	2.840	Feb 2016	0.169	Nov 2016	0.424	Nov 2017	-		0.424	Continuing	Continuing	0.000
DFoS CIDAS - HW S - Blister Test Assets	C/FPIF	TBD : TBD	0.000	0.000		0.000		2.915	Nov 2017	-		2.915	Continuing	Continuing	0.000
DFoS CIDAS - HW S - Large Scale Applicator	MIPR	Various : Various	0.525	0.392	Nov 2015	0.221	Apr 2017	0.367	Nov 2017	-		0.367	Continuing	Continuing	0.000
DFoS GPD - HW S - GPD	MIPR	Various : Various	0.000	0.095	Apr 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DFoS JSEW - HW S - Test Assets	C/FFP	STERIS Corporation : Mentor, OH	0.003	0.025	Oct 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DFoS JSEW - HW S - JSEW	MIPR	Various : Various	0.000	0.078	Jun 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - HW C - Increment I Aircraft Enclosure	C/CPFF	Materials Engineering and Technical Support Services Corp. (METSS) : Westerville, OH	0.000	0.146	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - HW S - Concept Demo	MIPR	Aeroclave : LLC, Maitland, FL	0.000	0.377	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - HW S - Increment II Chemical Agent Decon Mods	C/FPIF	TBD : TBD	0.000	0.000		3.000	Jun 2017	0.123	Nov 2017	-		0.123	Continuing	Continuing	0.000
		Subtotal	2.503	5.812		3.390		3.829		-		3.829	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MDAP - TD/D SB - IPT and Technical Support	MIPR	Various : Various	0.117	0.076	Oct 2015	0.124	Nov 2016	0.140	Nov 2017	-		0.140	Continuing	Continuing	0.000
DFoS CIDAS - TD/D S - IPT and Technical Support	MIPR	Various : Various	0.549	1.243	Nov 2015	1.878	Nov 2016	1.831	Nov 2017	-		1.831	Continuing	Continuing	0.000
DFoS GPD - TD/D S - IPT and Technical Support	MIPR	Various : Various	0.277	1.265	Nov 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DFoS JSEW - TD/D S - IPT and Technical Support	MIPR	Various : Various	0.141	0.162	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - TD/D S - IPT and Technical Support	MIPR	Various : Various	0.000	1.294	Dec 2015	0.685	Nov 2016	0.842	Nov 2017	-		0.842	Continuing	Continuing	0.000
		Subtotal	1.084	4.040		2.687		2.813		-		2.813	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DFoS CIDAS - DTE S - Live Agent / Lab and Operational Testing	MIPR	Various : Various	0.320	1.836	Jan 2016	1.540	Nov 2016	2.581	Nov 2017	-		2.581	Continuing	Continuing	0.000
DFoS GPD - DTE S - Developmental Testing	C/CPFF	Battelle Memorial Institute : Columbus, OH	2.135	0.658	Nov 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DFoS GPD - DTE S - Developmental Testing #2	MIPR	Various : Various	0.963	0.972	Nov 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DFoS JSEW - OTE S - Developmental Testing	MIPR	Various : Various	1.504	0.334	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - JBADS Increment I - Product Verification Testing	MIPR	Various : Various	0.000	1.128	Apr 2016	0.000		2.210	Nov 2017	-		2.210	Continuing	Continuing	0.000
JBADS - DTE S - Increment I IOT&E	MIPR	Various : Various	0.000	0.000		0.000		2.000	Nov 2017	-		2.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBADS - OTHT S - ConMit Concept Demo	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.524	Jun 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - DTE S - Increment I Product Qualification Testing	MIPR	Various : Various	0.000	0.000		0.738	Jun 2017	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	4.922	5.452		2.278		6.791		-		6.791	-	-	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MDAP - PM/MS SB - Program Management and Technical Support	MIPR	Various : Various	0.011	0.011	Jan 2016	0.031	Jan 2017	0.017	Nov 2017	-		0.017	Continuing	Continuing	0.000
DFoS CIDAS - PM/MS S - Program Management and Technical Support	MIPR	Various : Various	0.000	0.285	Feb 2016	0.952	Nov 2016	1.365	Nov 2017	-		1.365	Continuing	Continuing	0.000
DFoS GPD - PM/MS S - Program Management and Technical Support	MIPR	Various : Various	0.311	0.134	Jan 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - PM/MS S - Program Management & Tech Support	MIPR	Various : Various	0.000	0.281	Nov 2015	0.646	Nov 2016	0.871	Nov 2017	-		0.871	Continuing	Continuing	0.000
		Subtotal	0.322	0.711		1.629		2.253		-		2.253	-	-	0.000

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.831	16.015		9.984		15.686		-		15.686	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

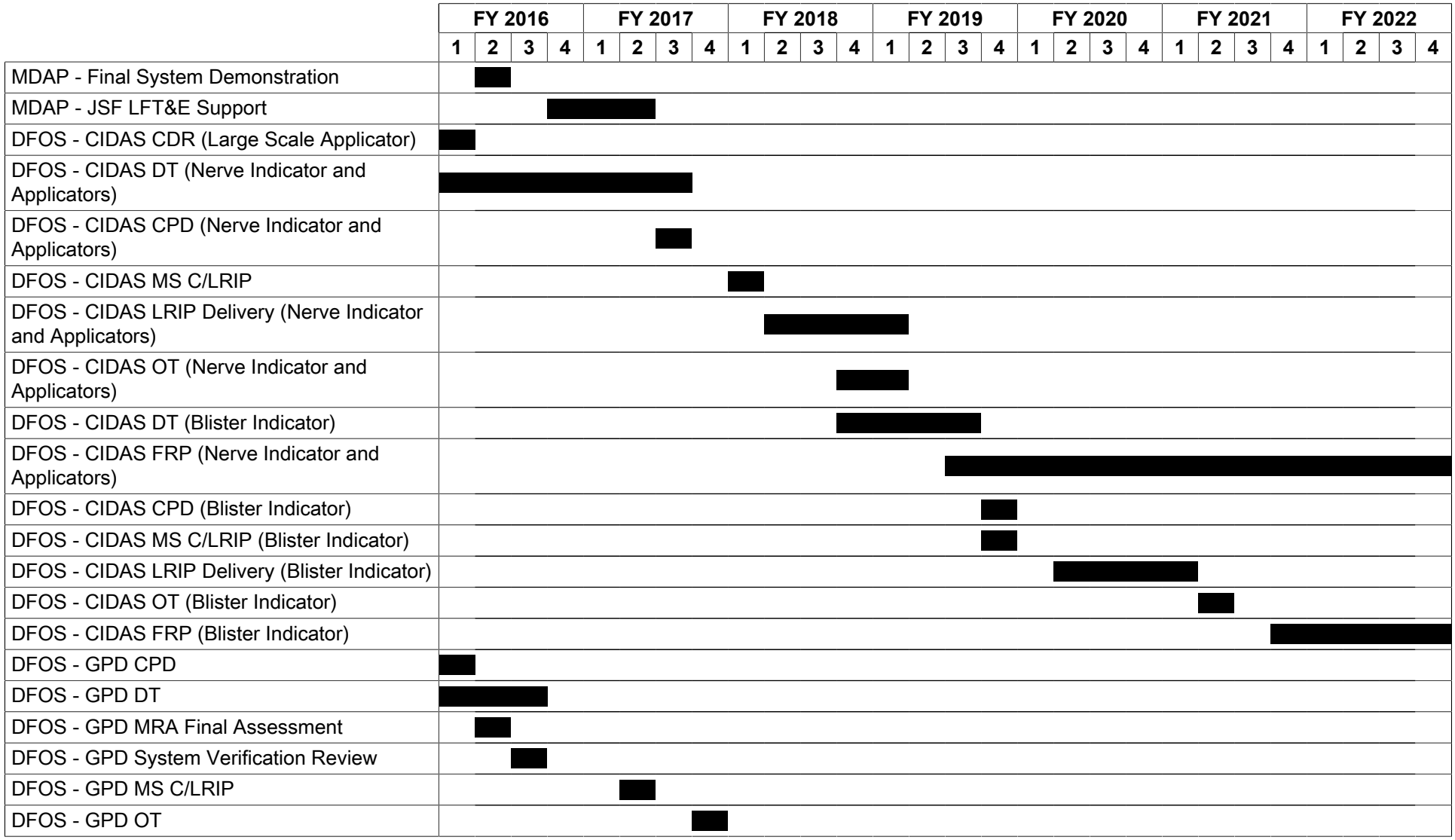

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

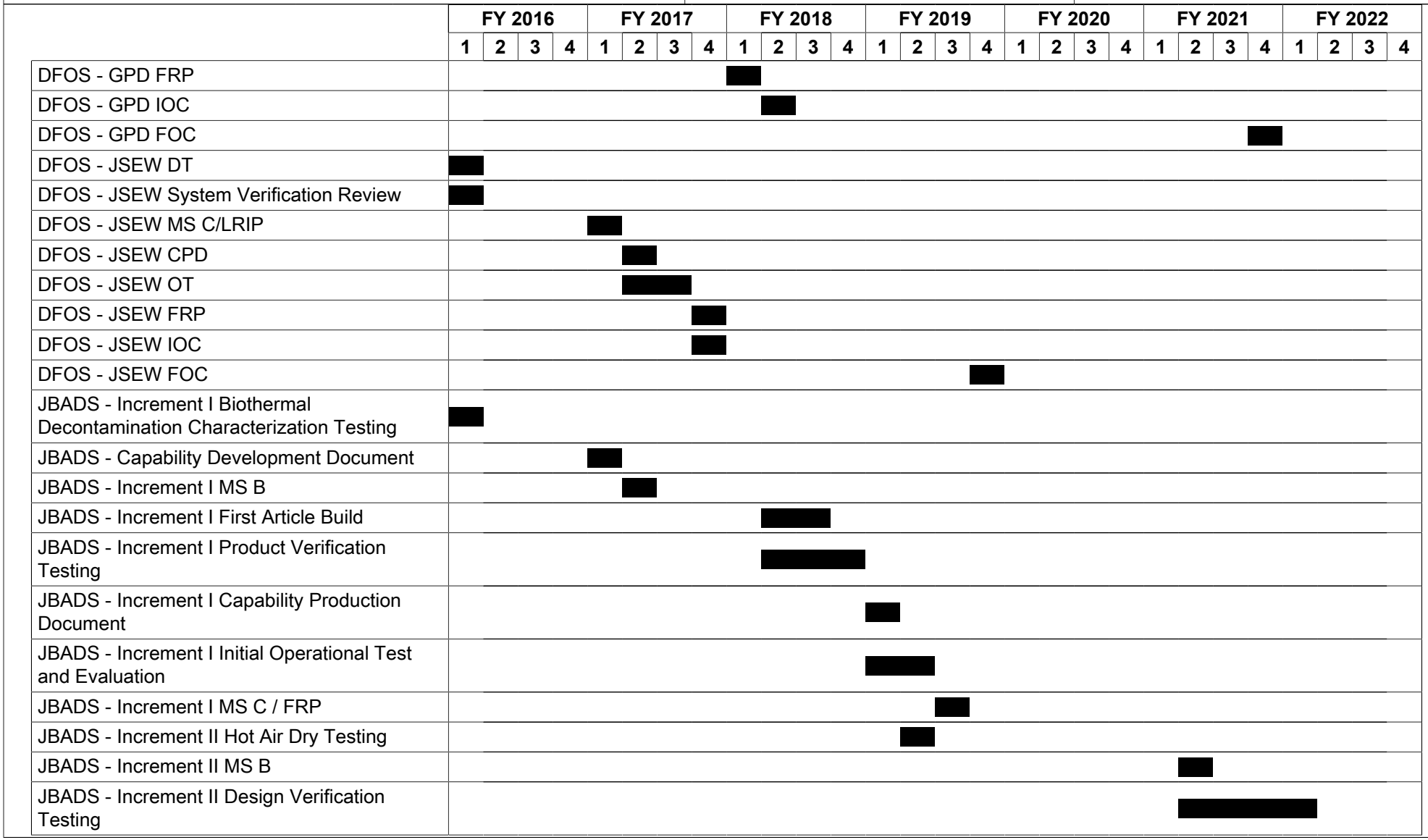

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

	FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JBADS - Increment II EMD Contract Award																							■					
JBADS - Increment II MS C/LRIP																												■

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MDAP - Final System Demonstration	2	2016	2	2016
MDAP - JSF LFT&E Support	4	2016	2	2017
DFOS - CIDAS CDR (Large Scale Applicator)	1	2016	1	2016
DFOS - CIDAS DT (Nerve Indicator and Applicators)	1	2016	3	2017
DFOS - CIDAS CPD (Nerve Indicator and Applicators)	3	2017	3	2017
DFOS - CIDAS MS C/LRIP	1	2018	1	2018
DFOS - CIDAS LRIP Delivery (Nerve Indicator and Applicators)	2	2018	1	2019
DFOS - CIDAS OT (Nerve Indicator and Applicators)	4	2018	1	2019
DFOS - CIDAS DT (Blister Indicator)	4	2018	3	2019
DFOS - CIDAS FRP (Nerve Indicator and Applicators)	3	2019	4	2022
DFOS - CIDAS CPD (Blister Indicator)	4	2019	4	2019
DFOS - CIDAS MS C/LRIP (Blister Indicator)	4	2019	4	2019
DFOS - CIDAS LRIP Delivery (Blister Indicator)	2	2020	1	2021
DFOS - CIDAS OT (Blister Indicator)	2	2021	2	2021
DFOS - CIDAS FRP (Blister Indicator)	4	2021	4	2022
DFOS - GPD CPD	1	2016	1	2016
DFOS - GPD DT	1	2016	3	2016
DFOS - GPD MRA Final Assessment	2	2016	2	2016
DFOS - GPD System Verification Review	3	2016	3	2016
DFOS - GPD MS C/LRIP	2	2017	2	2017
DFOS - GPD OT	4	2017	4	2017
DFOS - GPD FRP	1	2018	1	2018

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
DFOS - GPD IOC	2	2018	2	2018
DFOS - GPD FOC	4	2021	4	2021
DFOS - JSEW DT	1	2016	1	2016
DFOS - JSEW System Verification Review	1	2016	1	2016
DFOS - JSEW MS C/LRIP	1	2017	1	2017
DFOS - JSEW CPD	2	2017	2	2017
DFOS - JSEW OT	2	2017	3	2017
DFOS - JSEW FRP	4	2017	4	2017
DFOS - JSEW IOC	4	2017	4	2017
DFOS - JSEW FOC	4	2019	4	2019
JBADS - Increment I Biothermal Decontamination Characterization Testing	1	2016	1	2016
JBADS - Capability Development Document	1	2017	1	2017
JBADS - Increment I MS B	2	2017	2	2017
JBADS - Increment I First Article Build	2	2018	3	2018
JBADS - Increment I Product Verification Testing	2	2018	4	2018
JBADS - Increment I Capability Production Document	1	2019	1	2019
JBADS - Increment I Initial Operational Test and Evaluation	1	2019	2	2019
JBADS - Increment I MS C / FRP	3	2019	3	2019
JBADS - Increment II Hot Air Dry Testing	2	2019	2	2019
JBADS - Increment II MS B	2	2021	2	2021
JBADS - Increment II Design Verification Testing	2	2021	1	2022
JBADS - Increment II EMD Contract Award	3	2021	3	2021
JBADS - Increment II MS C/LRIP	4	2022	4	2022

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program			Date: May 2017
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) IP5 / *INDIVIDUAL PROTECTION (EMD)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
IP5: *INDIVIDUAL PROTECTION (EMD)*	-	19.720	11.427	14.481	-	14.481	11.600	4.500	3.371	3.370	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides Engineering & Manufacturing Development Phase and Low Rate Initial Production (EMD/LRIP) for individual protection equipment, with the goal of providing equipment that allows the individual soldier, sailor, airman, or Marine to operate in a contaminated Nuclear, Biological and Chemical (NBC) environment with little or no degradation of his/her performance. Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, Concept of Operations (CONOPS) and Techniques, Tactics, and Procedures (TTP).

Efforts included in this project are: (1) the Joint Service Aircrew Mask (JSAM) for Rotary Wings (RW), JSAM Strategic Aircraft (SA), JSAM Tactical Aircraft (TA), JSAM Joint Strike Fighter (JSF), and (2) Uniform Integrated Protective Ensemble (UIPE) Increment 2.

(1) The JSAM RW, JSAM SA, JSAM TA, and JSAM-JSF are Acquisition Category (ACAT) III programs developed to provide respiratory and ocular protection. The JSAM will be a lightweight chemical and biological (CB) protective mask that will be worn as CB protection for most United States Army (USA), Air Force (USAF), Navy (USN), and Marine Corps (USMC) fixed wing and RW aircrew. All JSAM variants will be compatible with most below-the-neck (BTN) CB protection ensembles and existing aircrew life support equipment (ALSE). They will include a protective hood assembly, CB filter, blower assembly (except JSAM SA), and an intercom for ground communication. They will also provide flame protection, demist/emergency demist (except JSAM SA), and anti-drowning features. The goal of the JSAM programs is to develop, manufacture, field, and sustain an aircrew respirator system that, in conjunction with BTN clothing ensembles, will provide the capability for all aircrew to operate in an actual or perceived CB warfare environment.

The JSAM RW mask is being developed for use by pilots and aircrew in the majority of DoD RW aircraft in the USA (H-60, H-6, H-47, H-72), USAF (H-1 and H-60), and USN/USMC (H-60, H-1, and H-53). The JSAM RW will integrate with most BTN CB ensembles, normal aircrew flight equipment, and RW flight helmets. The system contains a removable face plate, allowing the user to fly "face free" in Mission Oriented Protective Posture (MOPP) 3 (garment, boots, and mask) and easily install the face plate when the threat level dictates, thereby reducing physiological and psychological burden. If threat level warrants, the user can install their face plate into an already donned hood and enter MOPP 4 without removing their flight helmet.

The JSAM SA mask will provide individual respiratory, ocular, and percutaneous protection of chemical and biological warfare agents, and select toxic industrial chemicals for USAF (E-3, E-8, C-135s, C-17, C-145, C-146, C-130s, C-5), Aeromedical personnel (C-130s, KC-10, U-18, CV-22, KC-135, C-12s, KC-46), USN (P-8, E-6, C-40, C-12, C-20), USMC (C-9, C-12, C-20, UC-35), and USA (RC-7, C-12s, C-20, C-26, UC-35, C-37) strategic aircrew. The mask components will be optimized to minimize their impact on the wearer's performance and maximize its ability to interface with aircrew protective clothing. JSAM SA will provide pressure breathing for altitude for aircraft that do not require pressure breathing for gravity. JSAM SA will integrate with aircraft subsystems which include aviation life support equipment,

aircrew flight equipment, aircraft seating, portable aircrew systems, communications systems, and aircraft oxygen systems. Prior to FY16, this project was funded under the JSAM FW funding line.

The JSAM TA mask will provide individual respiratory, ocular, and percutaneous protection of chemical and biological warfare agents, and select toxic industrial chemicals for USAF (F-22 A), USN (C-2 A, E-2 C/D, E/A-18G, F/A-18 A/C/E/F), and USMC (F/A-18 A/C/D, AV-8B, KC-130J and MV-22) tactical aircrew members. The mask components will be optimized to minimize their impact on the wearer's performance and maximize its ability to interface with aircrew protective clothing. JSAM TA will be compatible with anti-G systems, providing Chemical, Biological, Radiological (CBR) protection without degrading protection against gravity induced loss of consciousness (GLOC) up to 9 Gz . JSAM TA will integrate with essential aircraft subsystems. Prior to FY16, this project was funded under the JSAM FW funding line.

The JSAM-JSF is a CB respirator being specifically designed to support the F-35 (Joint Strike Fighter) and procured by the Joint Strike Fighter Program Office. It is designed to ensure that system integration and qualification of CB protection and survivability requirements are achieved as derived from the JSF Operational Requirements Document. When integrated with aircraft and pilot mounted equipment, the JSAM-JSF will provide combined CB, hypoxia and anti-G protection to all F-35 users, including the USAF, USN, USMC, and International Partners. Prior to FY15, this project was funded under the JSAM FW funding line.

(2) The Uniform Integrated Protection Ensemble (UIPE) is a Chemical, Biological, Radiological, Nuclear (CBRN) protective system offering the capability to select a tailored material solution based on the expected threat level commensurate with operational mission requirements. Where appropriate, a family of systems approach that meets the scope of UIPE individual protection capability needs will be utilized. The objective of UIPE is to fully integrate CBRN and toxic industrial material (TIM) protections into an ensemble, identical in fit and form to the combat uniform (including mask - helmet integration and protective boots and gloves), thus negating the need for separate protective ensemble components. This integrated protection approach will result in increased warfighter operational performance in a CBRN environment. The UIPE program will develop, integrate, test, procure and field incremental capability solutions that are modular in function and offer improvements in form and fit over current systems; the program will explore trade-space in areas such as protection level, heat stress, durability, antimicrobial properties, flame resistance, launderability, self-detoxification, and protection time in order to provide capabilities that afford maximum utility to the warfighter. Where appropriate modeling and simulation tools will be used to lower UIPE program risks, reduce costs, and ensure a high confidence in selected technologies. UIPE is aimed specifically at providing enhanced individual protection capabilities to the warfighter through reduction of physiological and psychological effects associated with CBRN protective garment thermal burden, weight, and bulk. The UIPE program will consider modernization in order to ensure that the warfighter retains access to state of the art capability to support future operational mission requirements.

The UIPE Increment 2 will seek to provide reduced thermal burden and weight compared to current protective ensembles. It will develop, integrate, test, procure, and field incremental capability solutions that are modular in function and offer improvements over current systems. The program will explore trade-space in areas such as protection level, heat stress, durability, antimicrobial properties, flame resistance, launderability, self-detoxification, and protection time in order to provide capabilities that afford maximum utility to the Warfighter. Where appropriate, modeling and simulation tools will be used to lower UIPE Increment 2 program risks, reduce costs, and ensure a high confidence in selected technologies.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: 1) JSAM RW	5.277	0.940	0.382

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Description: Developmental Testing (DT) and Multi-Service Operational Testing and Evaluation ***FY 2016 Accomplishments:*** Completed USN/USMC aircraft integration testing, USAF laser eye protection testing, obtained fielding Safe-to-Fly release for USAF aircraft, and received USA/USAF Operational Evaluation Report. Completed provisioning and TM verification and conducted a Physical Configuration Audit. ***FY 2017 Plans:*** Conduct Instructor and Key Personnel Training and New Equipment Training for the USN and USMC MOT&E, conduct USN/ USMC MOT&E, and complete shipboard flight testing. Receive the final Operational Evaluation Report. Update JSAM RW technical documentation or implement potential changes by reconfiguration to the JSAM RW based on results of USN/USMC MOT&E. ***FY 2018 Plans:*** Complete follow-on USN/USMC MOT&E test activities, and Low Rate Initial Production (LRIP) phase.			
Title: 2) JSAM SA ***Description:*** Developmental Testing and Multi-Service Operational Testing and Evaluation ***FY 2016 Accomplishments:*** Completed Developmental Testing, including flight tests on the E-3 and P-8 aircraft. Conducted a System Verification Review, and Production Readiness Review. Initiated preliminary events leading to Operational Testing. Developed and finalized the Operational Test Agency Milestone Assessment Report. Conducted the Logistics Demonstration. Finalized the Technical Manual to be used during Operational Testing. Completed the Joint Integrated Logistics Assessment. Prepared for Milestone C (scheduled for 1QFY17), including updating program documentation, developing the Capability Production Document, and conducting various pre-Milestone C reviews. ***FY 2017 Plans:*** Conduct Operational Testing for use on the E-3 (USAF), and P-8 (USN) aircraft. Develop the Operational Evaluation Report. Acquire final Safe-to-Fly certification aboard the E-3,and P-8 aircraft. Prepare for fielding decision to deploy masks to E-3,and P-8 aircrew. Update the technical manual, based on any findings from OT. Integrate the JSAM SA mask to subsequent aircraft, beyond the E-3,and P-8. Make any final product changes to the mask, based on any findings from Operational Testing. ***FY 2018 Plans:*** Complete Operational Testing on the USA MC-12 and UC-35 aircraft. Conduct Developmental Testing, Integration Testing and Safe-to-Fly on various USAF and USN aircraft. Conduct engineering studies to assess communication system adaptors and	6.320	3.539	2.097

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
oxygen system adaptors for several USAF and USN aircraft. Update the Technical Manual to include specialized procedures for several USAF, USN, and USA aircraft.			
Title: 3) JSAM TA ***Description:*** Conduct Integration Testing Events ***FY 2016 Accomplishments:*** Developed and finalized Test and Evaluation Master Plan, Life Cycle Sustainment Plan, Life Cycle Management Plan, Systems Engineering Plan, Programmatic Environment, Safety and Occupational Health Evaluation. Procured non-recurring engineering for JSAM TA development, prototype and test asset design, and manufacturing of 79 test assets at an estimated unit cost of $8,429.10 for use in Integrated Test (IT) events. Conducted IT test events with JSAM TA platforms including ejection tower, water survival, sound attenuation/speech intelligibility, aircraft simulator for F-18, F-22, and MV-22. ***FY 2017 Plans:*** Conduct test integration events on USAF and USN aircraft platforms. ***FY 2018 Plans:*** Complete IT events with aircraft platforms including flight tests and shipboard testing. Update Technical Manuals, training package and conduct Logistics Demonstration. Receive Operational Test Agency (OTA) Letter of Observation or Observation of Operational Capabilities. Update program documentation in preparation of MS C/FRP.	5.024	4.065	2.954
Title: 4) JSAM JSF ***Description:*** Operational Test Event and Live Fire Test and Evaluation ***FY 2016 Accomplishments:*** Completed Developmental Testing. Initiated JSF CB Live Fire Test and Evaluation event. Concluded Manufacturing Readiness Assessment. Conducted System Verification and Production Readiness Reviews supporting a Low Rate Initial Production decision. Conducted Instructor and Key Personnel Training and New Equipment Training. JSAM-JSF production contract was awarded to include initial delivery order for production assets. ***FY 2017 Plans:*** Complete JSF Chemical and Biological Live Fire Test and Evaluation event. Conduct JSF Chemical and Biological Operational Test Event.	3.099	1.883	-
Title: 5) UIPE - Increment 2 ***Description:*** System Development and Demonstration/Engineering and Manufacturing Development	-	1.000	9.048

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2017 Plans: Begin concept development and design and continue system-level prototype testing. Conduct Preliminary Design Review (PDR) and Systems Requirements Review (SRR). ***FY 2018 Plans:*** Investigate mission profile requirements against available Commercial Off The Shelf/Non-Developmental Item (COTS/NDI) that could quickly meet Warfighter needs. Manufacture and conduct testing on applicable COTS/NDI.			
Accomplishments/Planned Programs Subtotals	19.720	11.427	14.481

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• JI0002: *JS AIRCREW MASK (JSAM)*	2.705	52.284	36.782	-	36.782	54.775	60.278	63.806	63.110	Continuing	Continuing
• MA0401: *CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)*	32.872	13.525	10.990	-	10.990	13.064	16.769	19.336	71.335	Continuing	Continuing

Remarks

D. Acquisition Strategy

JOINT SERVICE AIRCREW MASK ROTARY WING (JSAM RW)

The JSAM RW was developed under a competitive Cost Plus Fixed Fee contract, that included JSAM Apache and JSAM Apache Block III. A sole source Fixed Price Incentive (FPI) contract was awarded for LRIP. A Fixed Price modification to the sole source LRIP contract is anticipated to complete USAF and initiate Army TPF. A competitive Indefinite Delivery/Indefinite Quantity (IDIQ) production contract with FPI and FFP CLINs will be pursued for FRP. The FRP contract will also include Cost Plus CLINS for the vendor to establish a production line at Pine Bluff Arsenal.

JOINT SERVICE AIRCREW MASK STRATEGIC AIRCRAFT (JSAM SA)

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

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

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

The overall test strategy involves four major phases. The first test phase consists of Design Verification Testing (DVT) which will evaluate developmental prototype masks prior to Critical Design Review (CDR). The second test phase is Developmental Testing (DT) to support Milestone C/LRIP. The third test phase is Operational Testing (OT) of assets to support IOC fielding to USAF E-3, USN P-8, USA MC-12, and USA UC-35 aircrew. The final test phase will consist of safe-to-fly and integration testing for all remaining aircraft.

The contract strategy consists of two sole-source contracts with Avon Protection Systems, the manufacturer of the base M53 mask. The first contract, which was awarded on 31 July 2013, covers all activities during Engineering and Manufacturing Development (EMD) phase. The second contract, which is planned to be awarded after Milestone C, will cover the activities during the Production and Deployment (PD) phase including all LRIP and FRP builds.

JOINT SERVICE AIRCREW MASK TACTICAL AIRCRAFT (JSAM TA)

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

JOINT SERVICE AIRCREW MASK JOINT STRIKE FIGHTER (JSAM-JSF)

JSAM-JSF is specifically designed for the F-35 (Joint Strike Fighter) to be incorporated within the JSF platform and fielded to US Services and international partners. JSAM-JSF is being developed concurrently with other JSF equipment including life support and pilot flight equipment. JSAM-JSF initially leveraged a JSAM-FW design and shared the same base contract with a Cost Plus Incentive Fee delivery order.

CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)

The UIPE Increment 2 Family of Systems (FoS) will use an evolutionary acquisition strategy to develop a FoS that will provide the Warfighter percutaneous protection from operationally relevant traditional and non-traditional CBRN threats. The FoS 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. UIPE Increment 2 is a FoS and, therefore, will not be a single solution designed to have one suit meet the majority of Warfighter functions. Early testing will aide in deciding what is possible for each mission profile area and feed information in to the trade space analysis. Developmental/Operational Testing will assess the ability of the solution to meet requirements, determine contractual compliance with the Performance Specifications, 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. In special circumstances, procurement may be awarded under the OTA if the contract falls under the procedures pursuant to the rules and regulations specified for this OTA. Otherwise, a production contract will be awarded via a more traditional contracting vehicle.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM RW - HW C - M41 PATS Mask Leakage Tester	SS/FFP	TSI : Incorporated, Saint Paul, MN	0.000	0.210	Apr 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM SA - HW S - Modified M53 - Design Modification and Development	SS/CPFF	AVON Protection Systems Inc. : Cadillac, MI	0.000	1.685	Nov 2015	0.207	Nov 2016	0.000		-		0.000	Continuing	Continuing	0.000
JSAM TA - HW S - Hardware and Support Equipment for Integration and Test	SS/FFP	Cam Lock Limited : Aldershot Hampshire, UK	0.000	0.000		0.440	Dec 2016	0.155	Nov 2017	-		0.155	Continuing	Continuing	0.000
JSAM TA - HW S - ECPs, Test Assets and Test Support	SS/FFP	Cam Lock Limited : Aldershot Hampshire, UK	0.000	0.910	Sep 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM-JSF - HW S - Engineering and Manufacturing Contract	C/CPIF	GENTEX Corp. : Rancho Cucamonga, CA	1.366	1.129	Oct 2015	0.330	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
UIPE - HW S - Prototype Development	Various	TBD : TBD	0.000	0.000		0.598	Jul 2017	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	1.366	3.934		1.575		0.155		-		0.155	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM RW - ES S - Integrated Product Team/ Engineering/Technical Support	MIPR	Various : Various	4.615	1.197	Nov 2015	0.290	Nov 2016	0.000		-		0.000	Continuing	Continuing	0.000
JSAM SA - TD/D S - Logistics Demonstration	MIPR	Various : Various	0.000	0.116	Nov 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM SA - ES S - Engineering and IPT Support	MIPR	Various : Various	0.000	2.672	Jan 2016	1.779	Nov 2016	0.043	Nov 2017	-		0.043	Continuing	Continuing	0.000
JSAM TA - ES S - Engineering Support	MIPR	Various : Various	0.000	1.961	Nov 2015	1.353	Nov 2016	0.664	Nov 2017	-		0.664	Continuing	Continuing	0.000
JSAM-JSF - ES S - Engineering Support	MIPR	Various : Various	0.202	1.203	Oct 2015	0.642	Nov 2016	0.000		-		0.000	Continuing	Continuing	0.000
UIPE - ES S - Program Engineering/Technical IPT	Various	Various : Various	0.000	0.000		0.000		3.108	Nov 2017	-		3.108	Continuing	Continuing	0.000
		Subtotal	4.817	7.149		4.064		3.815		-		3.815	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM RW - DTE S - Shipboard Testing (USN)	MIPR	Naval Air Warfare Center (Aircraft Division) : Patuxent River, MD	0.000	0.100	Sep 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM RW - DTE C - M41 PATS Performance Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.125	Jun 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM RW - DTE S - Developmental Testing (USA/USAF)	MIPR	Various : Various	1.067	0.030	Aug 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM RW - DTE S - Developmental and Aircraft Integration Testing (USN/ USMC)	MIPR	Various : Various	3.361	0.954	Nov 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM RW - OTE S - Multi-Service Operational Testing (USN/USMC)	MIPR	Various : Various	0.000	1.233	Sep 2016	0.459	Nov 2016	0.382	Nov 2017	-		0.382	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM SA - DTE S - Developmental Testing	MIPR	Various : Various	0.000	1.553	Nov 2015	0.000		0.960	Nov 2017	-		0.960	Continuing	Continuing	0.000
JSAM SA - OTE S - Operational Testing	MIPR	Various : Various	0.000	0.000		1.102	Nov 2016	0.792	Nov 2017	-		0.792	Continuing	Continuing	0.000
JSAM TA - DTE S -Testing and Integration	MIPR	Various : Various	0.000	1.496	Nov 2015	1.754	Nov 2016	1.376	Nov 2017	-		1.376	Continuing	Continuing	0.000
JSAM TA - DTE/ OTE S - Integrated Testing (combined DT/OT)	MIPR	Navy Operational Test and Eval Force (OPTEVFOR) : Norfolk, VA	0.000	0.000		0.000		0.333	Nov 2017	-		0.333	Continuing	Continuing	0.000
JSAM-JSF - OTE S - Live Fire Test & Evaluation	MIPR	Various : Various	0.000	0.000		0.671	Nov 2016	0.000		-		0.000	Continuing	Continuing	0.000
JSAM-JSF - DTE S - Follow-On Developmental Testing	MIPR	Various : Various	0.000	0.084	Nov 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
UIPE - DTE S - Design Verification Testing	MIPR	TBD : TBD	0.000	0.000		0.200	Jul 2017	4.637	Nov 2017	-		4.637	Continuing	Continuing	0.000
		Subtotal	4.428	5.575		4.186		8.480		-		8.480	-	-	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM RW - PM/MS S - Program Management and Technical Support	Various	Various : Various	2.471	1.428	Dec 2015	0.191	Nov 2016	0.000		-		0.000	Continuing	Continuing	0.000
JSAM SA - PM/MS S - Program Management and Technical Support Services	MIPR	Various : Various	0.000	0.294	Nov 2015	0.451	Nov 2016	0.302	Nov 2017	-		0.302	Continuing	Continuing	0.000
JSAM TA - PM/MS S - Program Management and Technical Support	MIPR	Various : Various	0.000	0.657	Nov 2015	0.518	Nov 2016	0.426	Nov 2017	-		0.426	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM-JSF - PM/MS S - Program Management and Technical Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.657	0.683	Oct 2015	0.240	Nov 2016	0.000		-		0.000	Continuing	Continuing	0.000
UIPE - PM/MS S - PM/ SME Prog Mgt	MIPR	Various : Various	0.000	0.000		0.202	Jul 2017	1.303	Nov 2017	-		1.303	Continuing	Continuing	0.000
		Subtotal	3.128	3.062		1.602		2.031		-		2.031	-	-	0.000

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.739	19.720		11.427		14.481		-		14.481	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

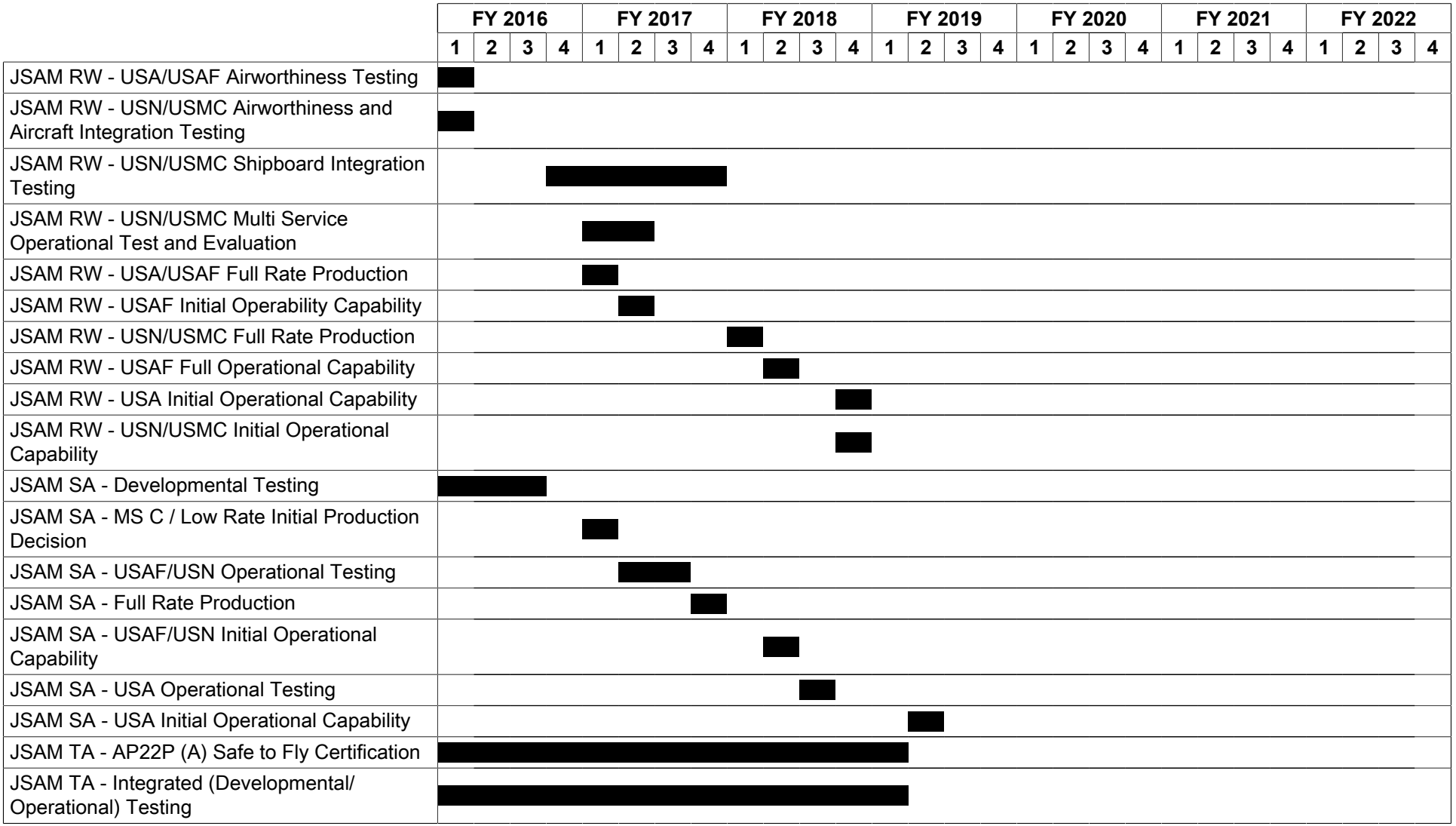

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

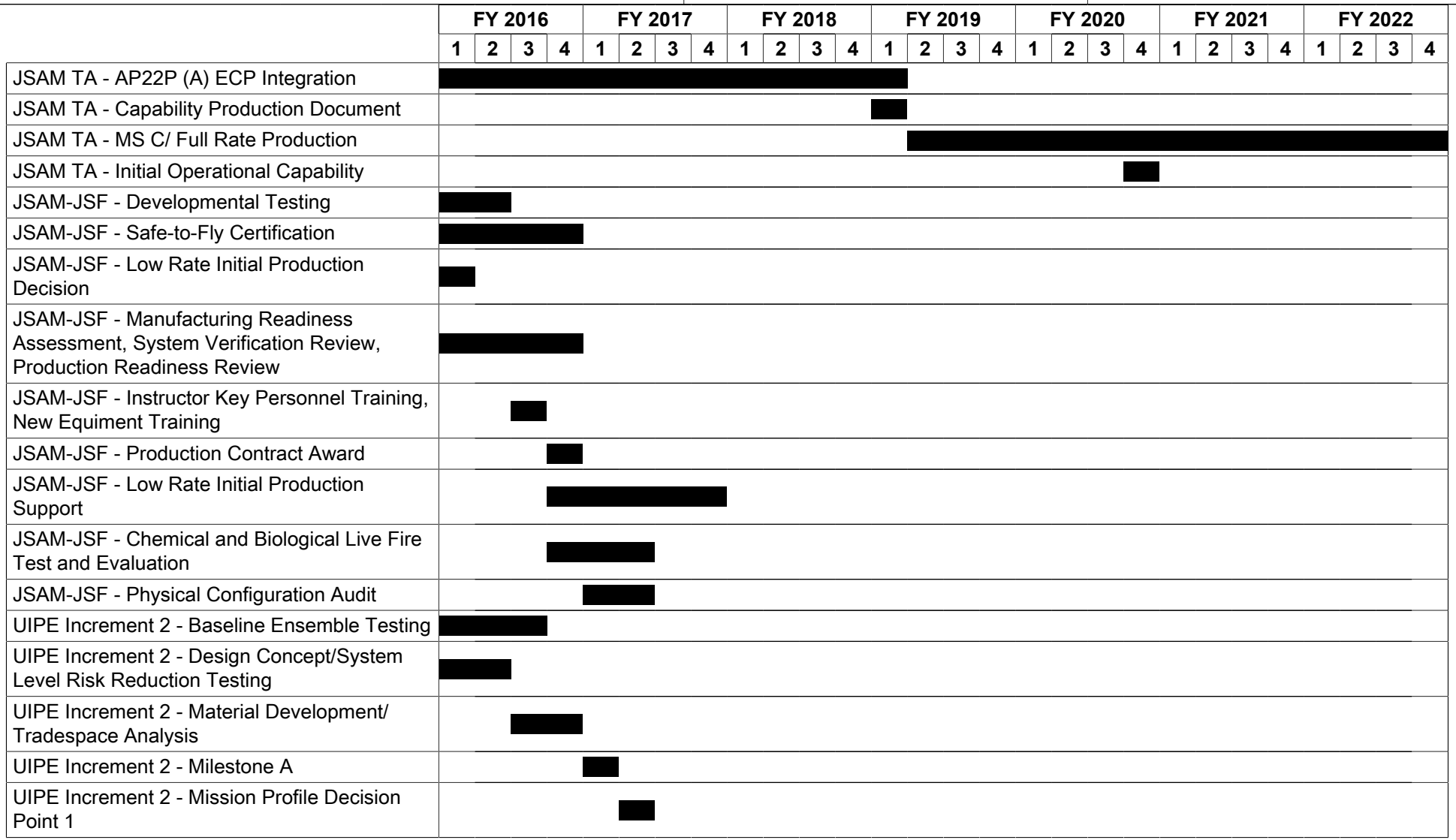

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

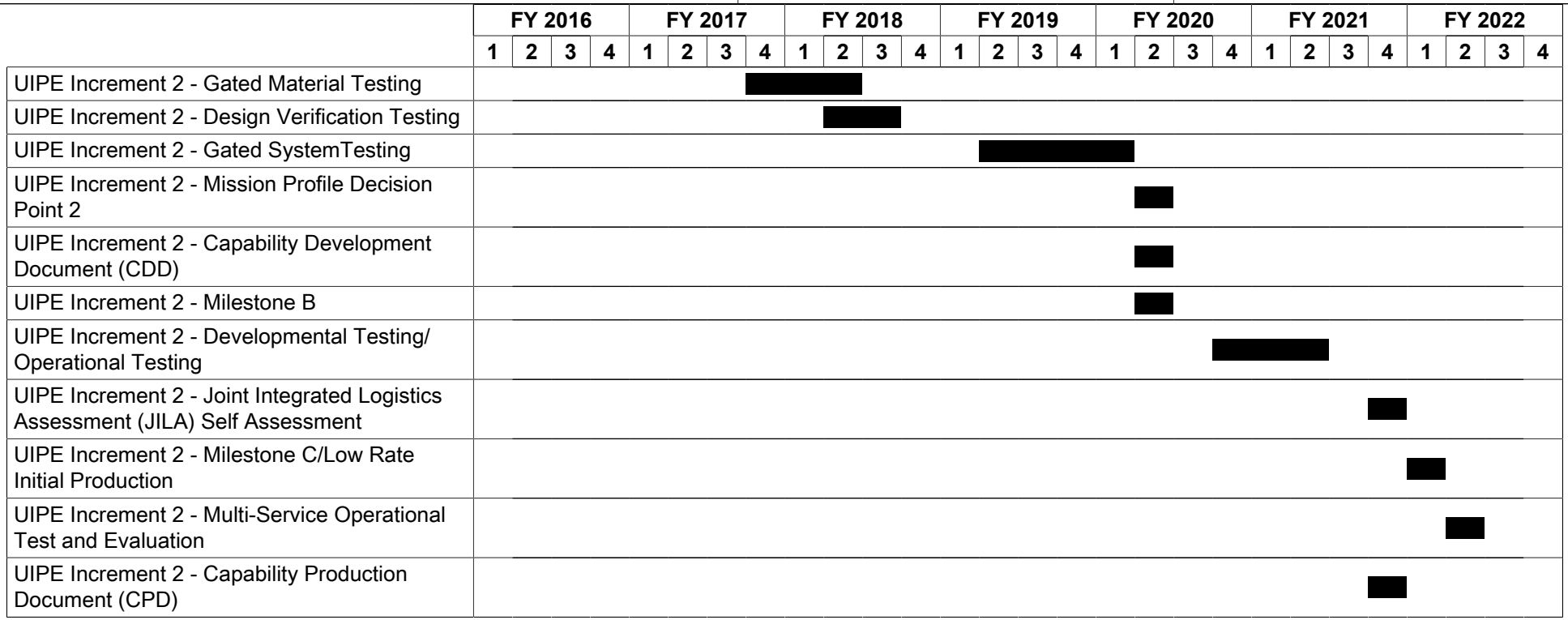

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JSAM RW - USA/USAF Airworthiness Testing	1	2016	1	2016
JSAM RW - USN/USMC Airworthiness and Aircraft Integration Testing	1	2016	1	2016
JSAM RW - USN/USMC Shipboard Integration Testing	4	2016	4	2017
JSAM RW - USN/USMC Multi Service Operational Test and Evaluation	1	2017	2	2017
JSAM RW - USA/USAF Full Rate Production	1	2017	1	2017
JSAM RW - USAF Initial Operability Capability	2	2017	2	2017
JSAM RW - USN/USMC Full Rate Production	1	2018	1	2018
JSAM RW - USAF Full Operational Capability	2	2018	2	2018
JSAM RW - USA Initial Operational Capability	4	2018	4	2018
JSAM RW - USN/USMC Initial Operational Capability	4	2018	4	2018
JSAM SA - Developmental Testing	1	2016	3	2016
JSAM SA - MS C / Low Rate Initial Production Decision	1	2017	1	2017
JSAM SA - USAF/USN Operational Testing	2	2017	3	2017
JSAM SA - Full Rate Production	4	2017	4	2017
JSAM SA - USAF/USN Initial Operational Capability	2	2018	2	2018
JSAM SA - USA Operational Testing	3	2018	3	2018
JSAM SA - USA Initial Operational Capability	2	2019	2	2019
JSAM TA - AP22P (A) Safe to Fly Certification	1	2016	1	2019
JSAM TA - Integrated (Developmental/Operational) Testing	1	2016	1	2019
JSAM TA - AP22P (A) ECP Integration	1	2016	1	2019
JSAM TA - Capability Production Document	1	2019	1	2019
JSAM TA - MS C/ Full Rate Production	2	2019	4	2022

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JSAM TA - Initial Operational Capability	4	2020	4	2020
JSAM-JSF - Developmental Testing	1	2016	2	2016
JSAM-JSF - Safe-to-Fly Certification	1	2016	4	2016
JSAM-JSF - Low Rate Initial Production Decision	1	2016	1	2016
JSAM-JSF - Manufacturing Readiness Assessment, System Verification Review, Production Readiness Review	1	2016	4	2016
JSAM-JSF - Instructor Key Personnel Training, New Equiment Training	3	2016	3	2016
JSAM-JSF - Production Contract Award	4	2016	4	2016
JSAM-JSF - Low Rate Initial Production Support	4	2016	4	2017
JSAM-JSF - Chemical and Biological Live Fire Test and Evaluation	4	2016	2	2017
JSAM-JSF - Physical Configuration Audit	1	2017	2	2017
UIPE Increment 2 - Baseline Ensemble Testing	1	2016	3	2016
UIPE Increment 2 - Design Concept/System Level Risk Reduction Testing	1	2016	2	2016
UIPE Increment 2 - Material Development/Tradespace Analysis	3	2016	4	2016
UIPE Increment 2 - Milestone A	1	2017	1	2017
UIPE Increment 2 - Mission Profile Decision Point 1	2	2017	2	2017
UIPE Increment 2 - Gated Material Testing	4	2017	2	2018
UIPE Increment 2 - Design Verification Testing	2	2018	3	2018
UIPE Increment 2 - Gated SystemTesting	2	2019	1	2020
UIPE Increment 2 - Mission Profile Decision Point 2	2	2020	2	2020
UIPE Increment 2 - Capability Development Document (CDD)	2	2020	2	2020
UIPE Increment 2 - Milestone B	2	2020	2	2020
UIPE Increment 2 - Developmental Testing/Operational Testing	4	2020	2	2021
UIPE Increment 2 - Joint Integrated Logistics Assessment (JILA) Self Assessment	4	2021	4	2021
UIPE Increment 2 - Milestone C/Low Rate Initial Production	1	2022	1	2022
UIPE Increment 2 - Multi-Service Operational Test and Evaluation	2	2022	2	2022

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
UIPE Increment 2 - Capability Production Document (CPD)	4	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program											Date: May 2017	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*				Project (Number/Name) IS5 / *INFORMATION SYSTEMS (EMD)*			
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
IS5: *INFORMATION SYSTEMS (EMD)*	-	20.043	27.323	25.677	-	25.677	23.159	22.594	21.182	22.814	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

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

CBRN IS aligns Joint Program Executive Office for Chemical Biological Defense (JPEO CBD) information technology in order to utilize a common software architecture, eliminate duplicative integration effort, produce interoperable system components, and minimize time-to-market of end user capability. JPEO CBD information technology is assembled from the inventory of available capability in place of the current paradigm where functionality only exists within the individual Joint Effects Model (JEM), Joint Warning and Report Network (JWARN), and Biosurveillance Portal (BSP) applications. CBRN IS aligns with the Joint Information Environment (JIE), such as milCloud, in order to field the integrated capabilities. The JIE is the cornerstone of the DoD's future - providing a secure information framework from our national senior leaders and joint force commanders, command and control forces that deliver responsive, decisive actions from any device; anytime and anywhere.

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.

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.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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JWARN supports the Joint Force Commander (JFC) by improving force protection capabilities for units operating in chemical, biological, radiological and nuclear environments. JWARN provides a digital display 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.

JEM and JWARN utilize the Joint Capabilities Integration and Development System (JCIDS) Manual prescribed Information Technology Box (IT Box) construct for managing requirements for the follow-on increments of capability development. The "IT Box" is an acquisition approach and methodology regarding how software systems should be developed and fielded. It is a process that differs from the way DoD acquires hardware systems. The acquisition approach uses the Information Systems Initial Capabilities Document (IS ICD) to describe the required operational capabilities for the entire development effort. These overarching requirements are further broken out into Requirements Definition Packages (RDPs) released over the life of the product instead of a single Capability Development Document released early in the program. "Agile Software Development" is a set of industry standard software development methods used in conjunction with the IT Box framework. Agile Software Development promotes adaptive planning, evolutionary development, early delivery, continuous improvement, and encourages rapid and flexible response to change. The Agile methodology is an alternative to traditional program management, typically used in software development. It helps teams respond to unpredictability through incremental, iterative work cadences, known as sprints. Agile methodologies are an alternative to waterfall, or traditional sequential development.

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 (MSB) decision by the Milestone Decision Authority 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 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 Biosurveillance Portal (BSP) was a FY 2016 new start program to address USSOCOM requirements contained in an approved Information Systems Capability Development Document (IS CDD). BSP is a web-based enterprise environment that will facilitate 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.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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The BSP Program will utilize BA5 funding to execute the development, testing and evaluation of capabilities to meet the defined program requirements. There will be two Production CDs and two Engineering Drops in FY17. CDs will be evaluated following Developmental Testing (DT) through End-to-End Testing using Users to validate delivered capability as part of the IT Box process thus reducing risk to the program and ensure a quality product is delivered to the Warfighter.

As software-intensive systems, JEM, JWARN, and BSP have no separately identifiable unit production components. BSP, JEM, and JWARN are designated as ACAT III programs and unit cost calculations including Program Acquisition Unit Cost/Average Procurement Unit Cost (PAUC/APUC) and Operations and Sustainment (O&S) average annual per unit costs are not applicable.

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 2016	FY 2017	FY 2018
Title: 1) BSP Product Development	6.954	8.101	5.319
FY 2016 Accomplishments: Developed and integrated BSP capabilities for inclusion in Capability Releases. This included architecture development, system design, key system tools, third party developed models, access to external data sources, information assurance, and host platform design.			
FY 2017 Plans: Continue the development and integration of BSP capabilities for inclusion in capability releases. This includes architecture development, system design, key system tools, third party developed models, access to external data sources, cybersecurity and information assurance, and host platform design.			
FY 2018 Plans: Continue the development and integration of BSP capabilities for inclusion in capability releases. This includes architecture development, system design, key system tools, third party developed models, access to external data sources, cybersecurity and information assurance, and host platform design.			
Title: 2) BSP Developmental Test and Evaluation	0.998	0.984	0.991

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2016 Accomplishments: Tested of BSP Capability Releases as required in accordance with the BSP Test and Evaluation Master Plan (TEMP). ***FY 2017 Plans:*** Continue to conduct Joint and Service developmental testing of BSP capability releases as required in accordance with the BSP Test and Evaluation Master Plan (TEMP). Execute Follow-On Test (FOT) as directed in USSOCOM Conditional Fielding and Deployment Release memorandum. ***FY 2018 Plans:*** Continue Developmental Testing associated with planned two Production Capability Drops and two Engineering Drops per FY. Planned cybersecurity testing in conjunction with cloud host provider requirements.			
Title: 3) BSP Program Management Support ***FY 2016 Accomplishments:*** Provided management of all aspects of BSP development and testing. Tasks will include, planning, budgeting, execution oversight, risk management, user feedback, scheduling, and administration. ***FY 2017 Plans:*** Continue support for the management of all aspects of BSP development and testing. Tasks will include, planning, budgeting, execution oversight, risk management, user feedback, scheduling, and administration. ***FY 2018 Plans:*** Management and oversight of all aspects of BSP program development and testing. Tasks include planning, budgeting, execution oversight, risk management, test and user feedback coordination, scheduling, training and administration.	0.867	1.003	1.114
Title: 4) BSP Operational Testing and Evaluation ***FY 2016 Accomplishments:*** Conducted Operational Testing of BSP in a realistic operational environment prior to fielding decision to determine system suitability and supportability. Support will consist of test support personnel as well as engineering, and operational support. ***FY 2017 Plans:*** Continue Operational Testing of BSP in a realistic operational environment prior to fielding decision to determine system suitability and supportability. Support will consist of test support personnel as well as engineering, and operational support. ***FY 2018 Plans:*** Continue Operational Testing of BSP through End-to-End testing of planned Production Capability Drops to validate capabilities prior to delivery to the Warfighters. Support will consist of test support personnel as well as engineering, and	1.135	1.486	1.091

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
operational support. Two User Feedback events are planned per FY.			
Title: 5) CBRN IS - Technical Guidance ***FY 2017 Plans:*** Define CBRN IS Technical Guidance. ***FY 2018 Plans:*** Continue to define CBRN IS Technical Guidance.	-	0.500	0.298
Title: 6) CBRN IS - Standardization ***FY 2017 Plans:*** Ensure BSP, JEM, JWARN are built using industry standards and best practices that are consistent with CBRN IS. ***FY 2018 Plans:*** Continue to ensure BSP, JEM, JWARN are built using industry standards and best practices that are consistent with CBRN IS.	-	0.800	0.477
Title: 7) CBRN IS - Cybersecurity / Information Assurance ***FY 2017 Plans:*** Implement cybersecurity lock-downs for CBRN and achieve an Authority To Operate. ***FY 2018 Plans:*** Continue further implementations of cybersecurity lock-downs for CBRN and maintain an Authority To Operate.	-	0.500	0.277
Title: 8) CBRN IS - Product Development ***FY 2017 Plans:*** Install CBRN IS on milCloud and other data centers. "milCloud" is a cloud-services product portfolio, managed by DISA. milCloud allows our users to access our web-enabled products world-wide without having the application directly installed on their machines. Ensure it can be operational 24/7. ***FY 2018 Plans:*** Continue installations of CBRN IS on milCloud and other data centers. "milCloud" is a cloud-services product portfolio, managed by DISA. milCloud allows our users to access our web-enabled products world-wide without having the application directly installed on their machines. Ensure operational 24/7.	-	2.339	1.394
Title: 9) CBRN IS - Operational Assessments ***FY 2017 Plans:***	-	1.500	0.915

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Conduct Operational Assessments of CBRN IS in various operational environments. ***FY 2018 Plans:*** Continue Operational Assessments of CBRN IS in various operational environments.			
Title: 10) JEM Increment 2 - Developmental Test and Evaluation ***FY 2016 Accomplishments:*** Completed Government Development Test of RDP 1. ***FY 2017 Plans:*** Continue Government Development Test of RDP 2, software deliveries in Command and Control (C2) environments. Continue test of JEM Increment 2 implementation in the DISA milCloud environment. Perform verification, validation, and accreditation of new hazard prediction models provided by the S&T community. ***FY 2018 Plans:*** Continue Government Development Test of software deliveries in Command and Control (C2) environments. Perform verification, validation, and accreditation of new hazard prediction models provided by the S&T community as defined in Requirements Definition Package 3.	0.677	0.656	1.043
Title: 11) JEM Increment 2 - Program Development ***FY 2016 Accomplishments:*** Developed JEM Increment 2 software and performed integration into Command and Control (C2) systems. ***FY 2017 Plans:*** Continue development of JEM Increment 2 software and perform integration into Command and Control (C2) systems. Integrate new hazard prediction models provided by the S&T community into the JEM Increment 2 baseline software. ***FY 2018 Plans:*** Continue development of JEM Increment 2 software and perform integration into Command and Control (C2) systems. Integrate new hazard prediction models provided by the S&T community into the JEM Increment 2 baseline software and develop/transition new S&T capabilities as defined in Requirements Definition Package 3.	1.005	1.051	1.676
Title: 12) JEM Increment 2 - Program Management ***FY 2016 Accomplishments:*** Completed Fielding Decision and IOC of Stand Alone capabilities of JEM Increment 2. Continue to perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Continue development and execution of RDP-1 requirements for JEM Increment 2 while working within the agile development process, to include performing	0.833	0.674	0.774

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
a Joint Integrated Logistics Assessment (JILA) and Logistics' Demonstration (LOG DEMO) in order to deploy JEM Increment 2 to the services. Complete development of Requirements Definition Package 2 (RDP-2), which defines requirements for C2 systems integration of the JEM software. Complete fielding decision and IOC of C2 systems capabilities of JEM Increment 2. ***FY 2017 Plans:*** Continue to perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Manage transitions of mature science and technology from JSTO into the JEM increment 2 program. Continue development and execution of Build Decision 2 (BD2) for JEM Increment 2 while working within the agile development process, to include performing a Joint Integrated Logistics Assessment (JILA) and Logistics' Demonstration (LOG DEMO) in order to deploy JEM Increment 2 to the services. Complete development of Requirements Definition Package 2 (RDP-2), which defines requirements for C2 systems integration of the JEM software. ***FY 2018 Plans:*** Continue to perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Continue development and execution of JEM Increment 2 while working within the agile development process, to include performing a Joint Integrated Logistics Assessment (JILA) and Logistics Demonstration (LOG DEMO) in order to deploy JEM Increment 2 to the services and to the Science and Technology Community.			
Title: 13) JEM Increment 2 - Operational Test and Evaluation ***FY 2016 Accomplishments:*** Completed lab based OT and limited scope service specific IOT&E to support fielding of software with additional capability. Conduct Service C2 Follow-on Test and Evaluation (FOT&E) which will allow for IOC of JEM Increment 2 on service C2 systems. ***FY 2017 Plans:*** As a continuation of the agile development process, for each IT Box Capability Drop (CD), develop operational test plans and conduct lab based OT and limited scope service specific IOT&E to support fielding decisions for the JEM Increment 2 software. Continue Service C2 and DISA milCloud Follow-on Test and Evaluation (FOT&E) of JEM Increment 2 on service C2 systems and the milCloud environment. ***FY 2018 Plans:*** Develop operational test plans and conduct lab based OT and limited scope service specific IOT&E to support fielding decisions for the JEM Increment 2 software.	1.037	0.539	1.162
Title: 14) JWARN Increment 2 - Management Support ***FY 2016 Accomplishments:***	0.574	0.735	0.787

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continued development and execution of Build Decisions (BDs) for JWARN Increment 2 while working within the Agile development process, to include performing a Joint Integrated Logistics Assessment (JILA) and Logistics' Demonstration (LOG DEMO) in preparation for test and deployment of JWARN Increment 2 to the services. ***FY 2017 Plans:*** Provide program/financial management, costing, contracting, scheduling and acquisition oversight for JWARN Increment 2. Continue development and execution of Build Decisions (BDs) for JWARN Increment 2 while working within the Agile development process, to include performing a Joint Integrated Logistics Assessment (JILA) and Logistics' Demonstration (LOG DEMO) in preparation for test and deployment of JWARN Increment 2 to the services. ***FY 2018 Plans:*** Provide program/financial management, costing, contracting, scheduling and acquisition oversight for JWARN Increment 2. Continue development and execution of Build Decisions (BDs) for JWARN Increment 2 while working within the Agile development process, to include performing a Joint Integrated Logistics Assessment (JILA) and Logistics' Demonstration (LOG DEMO) in preparation for test and deployment of JWARN Increment 2 to the services.			
Title: 15) JWARN Increment 2 - Product Development ***FY 2016 Accomplishments:*** Continued JWARN Increment 2 software development and perform integration into Command and Control (C2) systems. Initiated integration of CBRN sensor/detector data/input with JWARN software baseline. ***FY 2017 Plans:*** Continue JWARN Increment 2 software development and perform integration into Command and Control (C2) systems and integration of CBRN sensor/detector data/input with JWARN software baseline. ***FY 2018 Plans:*** Continue JWARN Increment 2 software development and perform integration into Command and Control (C2) systems and integration of CBRN sensor/detector data/input with JWARN software baseline.	2.609	3.196	4.475
Title: 16) JWARN Increment 2 - Developmental Test and Evaluation ***FY 2016 Accomplishments:*** Completed Government development test and evaluation of software deliveries in preparation for Initial Operational Test and Evaluation (IOT&E) which will allow for Initial Operational Capability of JWARN Increment 2 to be deployed to the services. ***FY 2017 Plans:***	0.257	0.329	0.634

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continue Government development test and evaluation of software deliveries in preparation for annual Multiservice Operational Test and Evaluation (MOT&E) which will allow for Initial Operational Capability of JWARN Increment 2 to be deployed to the services. ***FY 2018 Plans:*** Continue Government development test and evaluation of software deliveries in preparation for annual Multiservice Operational Test and Evaluation (MOT&E) which will allow for Initial Operational Capability of JWARN Increment 2 to be deployed to the services.			
Title: 17) JWARN Increment 2 - Operational Test and Evaluation ***FY 2016 Accomplishments:*** Completed Initial Operational Test and Evaluation (IOT&E) which will allow for Initial Operational Capability (IOC) of JWARN Increment 2 to be deployed to the services. ***FY 2017 Plans:*** Conduct Multiservice Operational Test and Evaluation (MOT&E) which will allow for additional Capability Drops (CDs) of JWARN Increment 2 capabilities and functionality to be deployed to the services. ***FY 2018 Plans:*** Conduct Multiservice Operational Test and Evaluation (MOT&E) which will allow for additional Capability Drops (CDs) with added JWARN Increment 2 capabilities and functionality to be deployed to the services.	1.229	0.809	0.937
Title: 18) SSA Policies, Standards and Guidelines ***FY 2016 Accomplishments:*** Continued updates to acquisition documentation for CBRN IT systems based on changes in policy, procedures, and guidelines. Performed surveillance of Federal Information Security Management Act (FISMA) and DoD Acquisition policies necessary to maintain certification on deployed service platforms. Provided M&S strategic and accreditation support. ***FY 2017 Plans:*** Continue updates to acquisition documentation for CBRN IT systems based on changes in policy, procedures, and guidelines. Perform surveillance of Federal Information Security Management Act (FISMA) and DoD Acquisition policies necessary to maintain certification on deployed service platforms. Provide M&S strategic and accreditation support. ***FY 2018 Plans:***	0.211	0.235	0.256

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continue updates to acquisition documentation for CBRN IT systems based on changes in policy, procedures, and guidelines. Perform surveillance of Federal Information Security Management Act (FISMA) and DoD Acquisition policies necessary to maintain certification on deployed service platforms. Provide M&S strategic and accreditation support.			
Title: 19) SSA Integrated Architecture ***FY 2016 Accomplishments:*** Continued to perform required modifications to the Integrated Architecture on host platforms and document the infrastructure and technical standards. Conducted Net-Centric Assessments for programs. Reviewed and updated the Common CBRN Interface standards on operational systems, including a CCSI. ***FY 2017 Plans:*** Continue to perform required modifications to the Integrated Architecture on host platforms and document the infrastructure and technical standards. Conduct Net-Centric Assessments for programs. Review and update the Common CBRN Interface standards on operational systems, including a CCSI. ***FY 2018 Plans:*** Continue to perform required modifications to the Integrated Architecture on host platforms and document the infrastructure and technical standards. Conduct Net-Centric Assessments for programs. Review and update the Common CBRN Interface standards on operational systems, including a CCSI.	0.247	0.276	0.301
Title: 20) SSA Enterprise Support and Services ***FY 2016 Accomplishments:*** Continued to support processes and services for Architectures, Data, Information Assurance, Modeling and Simulation, Science and Technology, and Standards and Policy. Modified support processes and services necessary to maintain relevancy in accordance with DoD standards, policies, and guidelines. ***FY 2017 Plans:*** Continue to support processes and services for Cybersecurity/Information Assurance, Architectures, Modeling and Simulation, Science and Technology, and Standards and Policy. Modify support processes and services necessary to maintain relevancy in accordance with DoD standards, policies, and guidelines. ***FY 2018 Plans:*** Continue to support processes and services for Cybersecurity/Information Assurance, Architectures, Modeling and Simulation, Science and Technology, and Standards and Policy. Modify support processes and services necessary to maintain relevancy in accordance with DoD standards, policies, and guidelines.	0.177	0.197	0.215
Title: 21) SSA Chemical, Biological, Radiological, Nuclear (CBRN) Data Model	0.198	0.221	0.241

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2016 Accomplishments: Developed and updated CBRN data model and define the structure and content of information exchange "Extensible Markup Language"(XML) schemas that support interoperability between CBD programs. ***FY 2017 Plans:*** Continue to develop and update CBRN data model and define the structure and content of information exchange "Extensible Markup Language"(XML) schemas that support interoperability between CBD programs. ***FY 2018 Plans:*** Continue to develop and update CBRN data model and define the structure and content of information exchange "Extensible Markup Language"(XML) schemas that support interoperability between CBD programs.			
Title: 22) SSA Cybersecurity / Information Assurance ***FY 2016 Accomplishments:*** Continued to employ Information Systems Security Engineering efforts to develop or modify the IA component of a system architecture to ensure it is in compliance with the IA component of the Global Information Grid architecture, and makes maximum use of enterprise IA capabilities and services. ***FY 2017 Plans:*** Continue to employ Information Systems Security Engineering (Cybersecurity) efforts to develop or modify the Cybersecurity/ Information Assurance (CS/IA) component of a system architecture to ensure it is in compliance with the IA component of the Global Information Grid architecture, and makes maximum use of enterprise CS/IA capabilities and services. ***FY 2018 Plans:*** Continue to employ Information Systems Security Engineering (Cybersecurity) efforts to develop or modify the Cybersecurity/ Information Assurance (CS/IA) component of a system architecture to ensure it is in compliance with the IA component of the Global Information Grid architecture, and makes maximum use of enterprise CS/IA capabilities and services.	0.423	0.509	0.556
Title: 23) SSA Policy and Standards Repository ***FY 2016 Accomplishments:*** Continued to provide standards, formats, templates, training, and best practices to support practical compliance with laws, regulations, and policy for acquisition, certification, and sustainment of net-centric, interoperable, and spectrum dependent systems and devices. ***FY 2017 Plans:***	0.355	0.396	0.432

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continue to provide standards, formats, templates, training, and best practices to support practical compliance with laws, regulations, and policy for acquisition, certification, and sustainment of net-centric, interoperable, and spectrum dependent systems and devices. ***FY 2018 Plans:*** Continue to provide standards, formats, templates, training, and best practices to support practical compliance with laws, regulations, and policy for acquisition, certification, and sustainment of net-centric, interoperable, and spectrum dependent systems and devices.			
Title: 24) SSA Technology Transition Support ***FY 2016 Accomplishments:*** Continued to perform Technology Transition support services (common components and services) for CBD programs. ***FY 2017 Plans:*** Continue to perform Technology Transition support services (common components and services) for CBD programs. ***FY 2018 Plans:*** Continue to perform Technology Transition support services (common components and services) for CBD programs.	0.257	0.287	0.312
Accomplishments/Planned Programs Subtotals	20.043	27.323	25.677

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• IS7: *INFORMATION SYSTEMS (OP SYS DEV)*	7.556	10.357	12.203	-	12.203	15.552	16.951	16.492	15.163	Continuing	Continuing
• G47101: *JOINT WARNING & REPORTING NETWORK (JWARN)*	0.000	3.889	0.981	-	0.981	0.502	0.445	0.400	0.375	Continuing	Continuing
• JC0208: *JOINT EFFECTS MODEL (JEM)*	3.316	3.069	0.983	-	0.983	0.911	0.696	0.731	0.746	Continuing	Continuing
• JS5230: *SOFTWARE SUPPORT ACTIVITY (SSA)*	0.100	0.300	0.096	-	0.096	0.094	0.082	0.075	0.071	Continuing	Continuing

Remarks

D. Acquisition Strategy

BIOSURVEILLANCE PORTAL (BSP)

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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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.

CBRN INFORMATION SYSTEMS

CBRN IS utilizes the agile construct for software requirements management and development. The intent is to scan the programs within the JPEO CBD, DTRA, and other sources for IT assets that can be hosted in a cloud environment and provide a CBRN capability for the warfighter. Once a program has been identified for integration into CBRN IS, an evaluation will occur in order to see if any changes are necessary. Modifications will be completed in coordination with the developer of the capability in order to be in alignment with CBRN IS guidelines.

JOINT EFFECTS MODEL (JEM)

JEM Increment 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 (MSB) decision by the Milestone Decision Authority 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 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 December 2013.

The current contractor for JEM Increment 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 completion. The

follow-on contract in FY17 will include scope for developing the remaining capabilities under the JEM 2.0 contract. The JEM follow-on contract will utilize full and open competition and will be 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 an single Build Decision and each CD will have an associated Fielding Decision.

JOINT WARNING & REPORTING NETWORK (JWARN)

JWARN Increment 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 (MSB) decision by the Milestone Decision Authority 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 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).

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: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - SW S - software - BSP software development	FFRDC	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	6.954	Mar 2016	8.101	Mar 2017	5.319	Mar 2018	-		5.319	Continuing	Continuing	0.000
CBRN IS - SW S - software - integration with BSP, JEM, JWARN	MIPR	Various : Various	0.000	0.000		2.339	Dec 2016	1.394	Dec 2017	-		1.394	Continuing	Continuing	0.000
JEM - SW SB - Increment 2 - Hazard Prediction Model Development and Integration	C/CPAF	General Dynamics Information Technologies : Fairfax, VA	10.521	1.005	Apr 2016	1.051	Apr 2017	1.676	Apr 2018	-		1.676	Continuing	Continuing	0.000
JWARN - SW S - Increments 1&2 - Software Development	C/CPAF	Northrop Grumman Corp. : Winter Park, FL	1.601	2.609	Feb 2016	3.196	Feb 2017	4.475	Feb 2018	-		4.475	Continuing	Continuing	0.000
SSA - SW S - CBRN Data Model	C/CPAF	Various : Various	6.343	0.615	Mar 2016	0.687	Mar 2017	0.749	Mar 2018	-		0.749	Continuing	Continuing	0.000
		Subtotal	18.465	11.183		15.374		13.613		-		13.613	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN IS - ES S - Support Costs - Cybersecuirty and IA updates, architecture documentation	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	0.000	0.000		1.300	Dec 2016	0.774	Dec 2017	-		0.774	Continuing	Continuing	0.000
SSA - ES S - Support Costs	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	7.837	0.549	Nov 2015	0.649	Dec 2016	0.707	Dec 2017	-		0.707	Continuing	Continuing	0.000
		Subtotal	7.837	0.549		1.949		1.481		-		1.481	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program			Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - DTE S - Software	MIPR	Various : Various	0.000	0.998	Dec 2015	0.984	Mar 2017	0.991	Dec 2017	-		0.991	Continuing	Continuing	0.000
BSP - OTE S - Software - MOT&E	MIPR	Various : Various	0.000	1.135	Dec 2015	1.486	Mar 2017	1.091	Dec 2017	-		1.091	Continuing	Continuing	0.000
CBRN IS - OTE S - Operational Test - service-specific testing, joint test	MIPR	Various : Various	0.000	0.000		1.500	Dec 2016	0.894	Dec 2017	-		0.894	Continuing	Continuing	0.000
JEM - DTE SB - Increment 2 - Hazard Prediction Model Development Test	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	8.665	0.677	Nov 2015	0.656	Dec 2016	2.205	Dec 2017	-		2.205	Continuing	Continuing	0.000
JEM - OTHT C - Increment 2 - OT&E Hazard Prediction Modeling software	MIPR	Various : Various	1.050	1.037	Nov 2015	0.539	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
JWARN - DTE S - Increment 2 - Completed Development Test and Evaluation of JWARN INC 2 in support of JWARN INC 2 IOT&E	MIPR	Various : Various	0.153	0.697	Dec 2015	0.329	Dec 2016	1.571	Dec 2017	-		1.571	Continuing	Continuing	0.000
JWARN - OTE S - Increment 2 - Multi-service Operational Test and Evaluation of JWARN INC 2 software	MIPR	Various : Various	0.462	0.789	Dec 2015	0.809	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
SSA - DTE S - Test and Evaluation	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	3.195	0.461	Nov 2015	0.514	Dec 2016	0.561	Dec 2017	-		0.561	Continuing	Continuing	0.000
		Subtotal	13.525	5.794		6.817		7.313		-		7.313	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - PM/MS S - Program Management	Various	Various : Various	0.000	0.867	Dec 2015	1.003	Dec 2016	1.114	Dec 2017	-		1.114	Continuing	Continuing	0.000
CBRN IS - PM/MS S - Program Management - Planning, Programming, and Budeting	MIPR	Various : Various	0.000	0.000		0.500	Dec 2016	0.299	Dec 2017	-		0.299	Continuing	Continuing	0.000
JEM - PM/MS S - Program Office - Planning and Programming	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	6.390	0.833	Nov 2015	0.674	Dec 2016	0.774	Dec 2017	-		0.774	Continuing	Continuing	0.000
JWARN - PM/MS C - Increment 2 - Program Management Support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	0.351	0.574	Nov 2015	0.735	Dec 2016	0.787	Dec 2017	-		0.787	Continuing	Continuing	0.000
SSA - PM/MS S - Management Services	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.683	0.243	Dec 2015	0.271	Dec 2016	0.296	Dec 2017	-		0.296	Continuing	Continuing	0.000
		Subtotal	9.424	2.517		3.183		3.270		-		3.270	-	-	0.000

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	49.251	20.043		27.323		25.677		-		25.677	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

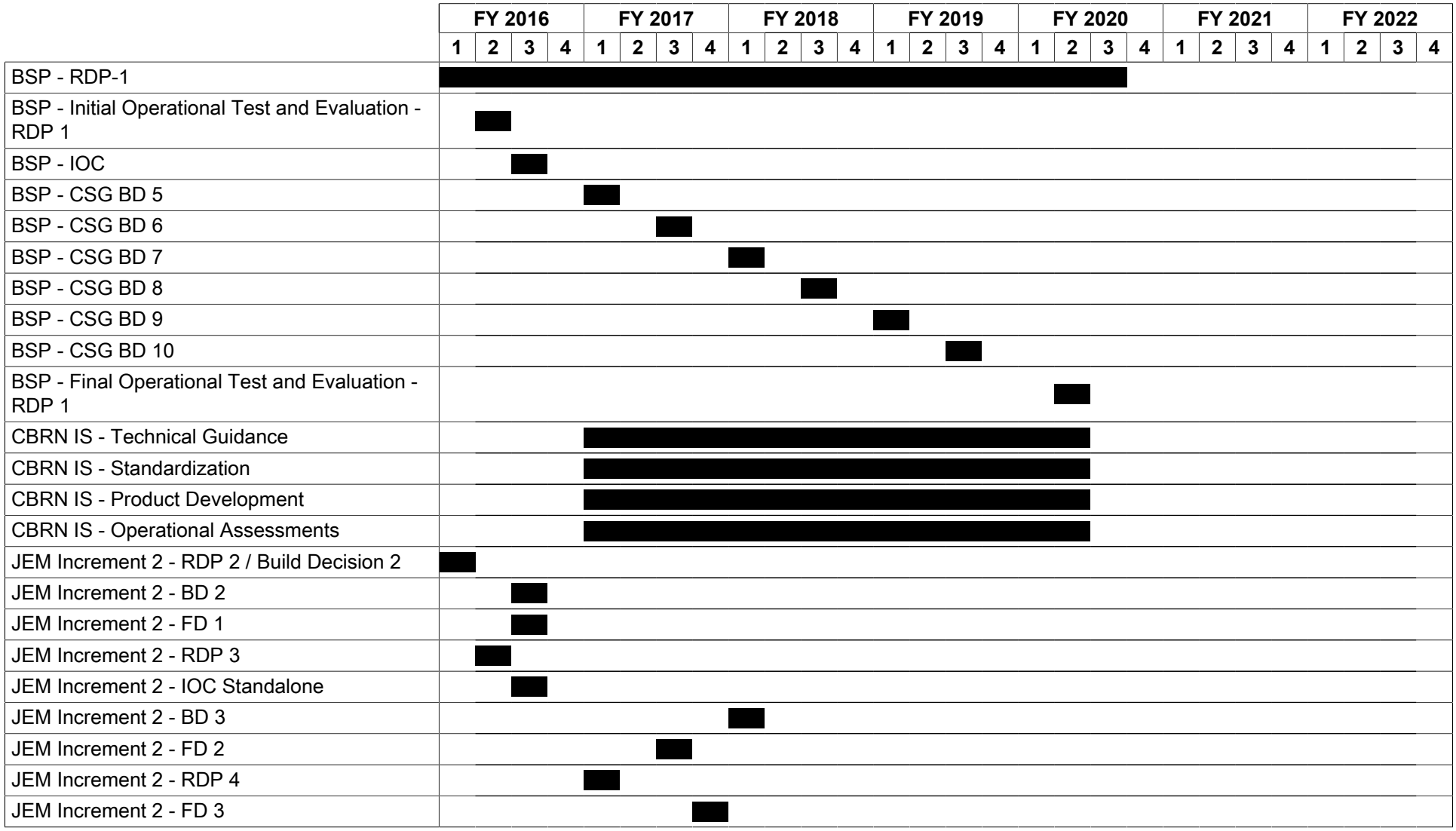

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

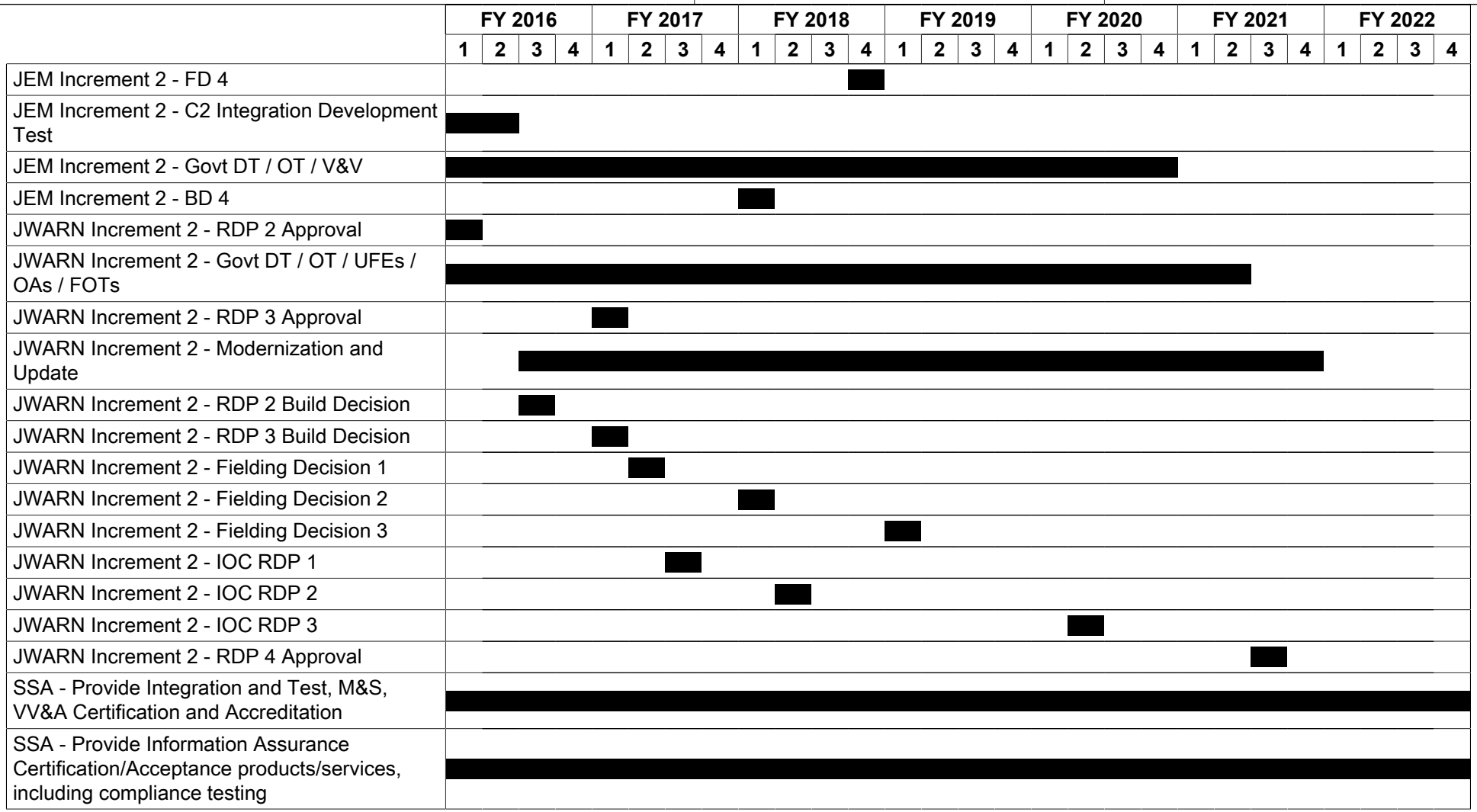

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

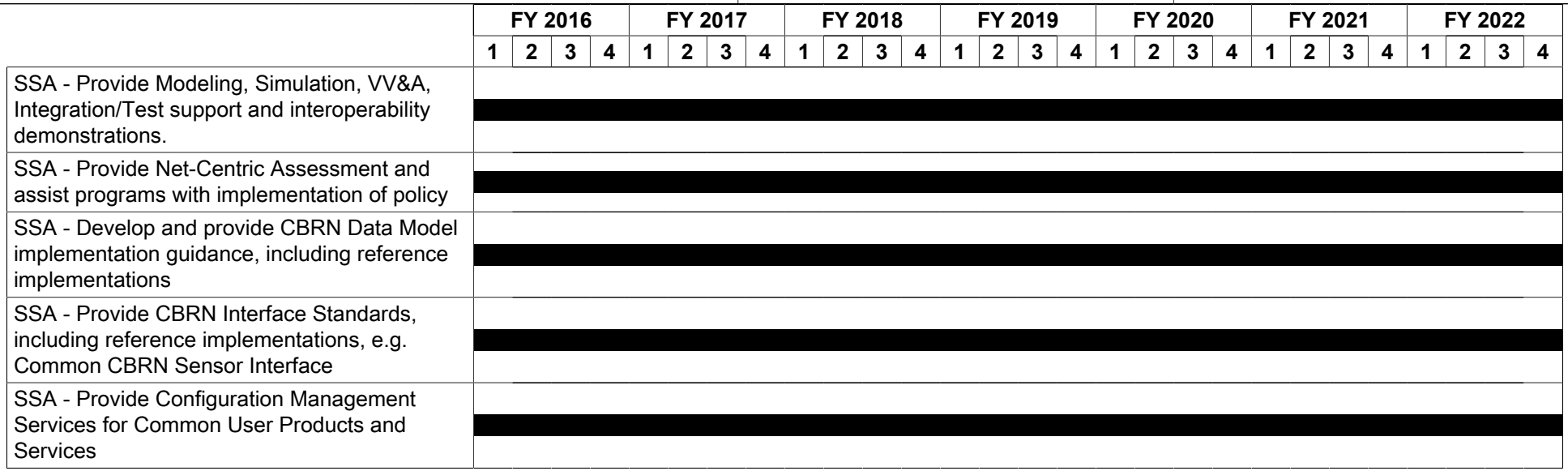

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
BSP - RDP-1	1	2016	3	2020
BSP - Initial Operational Test and Evaluation - RDP 1	2	2016	2	2016
BSP - IOC	3	2016	3	2016
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
CBRN IS - Technical Guidance	1	2017	2	2020
CBRN IS - Standardization	1	2017	2	2020
CBRN IS - Product Development	1	2017	2	2020
CBRN IS - Operational Assessments	1	2017	2	2020
JEM Increment 2 - RDP 2 / Build Decision 2	1	2016	1	2016
JEM Increment 2 - BD 2	3	2016	3	2016
JEM Increment 2 - FD 1	3	2016	3	2016
JEM Increment 2 - RDP 3	2	2016	2	2016
JEM Increment 2 - IOC Standalone	3	2016	3	2016
JEM Increment 2 - BD 3	1	2018	1	2018
JEM Increment 2 - FD 2	3	2017	3	2017
JEM Increment 2 - RDP 4	1	2017	1	2017

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JEM Increment 2 - FD 3	4	2017	4	2017
JEM Increment 2 - FD 4	4	2018	4	2018
JEM Increment 2 - C2 Integration Development Test	1	2016	2	2016
JEM Increment 2 - Govt DT / OT / V&V	1	2016	4	2020
JEM Increment 2 - BD 4	1	2018	1	2018
JWARN Increment 2 - RDP 2 Approval	1	2016	1	2016
JWARN Increment 2 - Govt DT / OT / UFEs / OAs / FOTs	1	2016	2	2021
JWARN Increment 2 - RDP 3 Approval	1	2017	1	2017
JWARN Increment 2 - Modernization and Update	3	2016	4	2021
JWARN Increment 2 - RDP 2 Build Decision	3	2016	3	2016
JWARN Increment 2 - RDP 3 Build Decision	1	2017	1	2017
JWARN Increment 2 - Fielding Decision 1	2	2017	2	2017
JWARN Increment 2 - Fielding Decision 2	1	2018	1	2018
JWARN Increment 2 - Fielding Decision 3	1	2019	1	2019
JWARN Increment 2 - IOC RDP 1	3	2017	3	2017
JWARN Increment 2 - IOC RDP 2	2	2018	2	2018
JWARN Increment 2 - IOC RDP 3	2	2020	2	2020
JWARN Increment 2 - RDP 4 Approval	3	2021	3	2021
SSA - Provide Integration and Test, M&S, VV&A Certification and Accreditation	1	2016	4	2022
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing	1	2016	4	2022
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.	1	2016	4	2022
SSA - Provide Net-Centric Assessment and assist programs with implementation of policy	1	2016	4	2022

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
SSA - Develop and provide CBRN Data Model implementation guidance, including reference implementations	1	2016	4	2022
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface	1	2016	4	2022
SSA - Provide Configuration Management Services for Common User Products and Services	1	2016	4	2022

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program											Date: May 2017	
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*				Project (Number/Name) MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*			
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
MB5: *MEDICAL BIOLOGICAL DEFENSE (EMD)*	-	80.412	106.223	136.553	-	136.553	170.330	196.813	183.836	160.146	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.

The Critical Reagent Program's (CRP) strategy establishes a core research and development capability by developing biological threat agent reference materials (strains, antigens, antibodies and nucleic acids) and detection/diagnostic assays for biothreat agent detection. These reagents/assays are leveraged across multiple programs to meet the requirements of the Warfighter and Joint biological defense systems and support the biological defense community. Through the Targeted Acquisition of Reference Materials Augmenting Capabilities (TARMAC) initiative, the CRP will use a systematic approach to the introduction of new materials and information into MCM development. The CRP program will transition to the Defense Biological Products Assurance Program (DBPAP) in FY18.

The Emerging Infectious Diseases Therapeutics (EID Tx) program is developing and will deliver a Food and Drug Administration (FDA) approved, broad-spectrum medical countermeasure to the Warfighter for protection against naturally occurring or biologically engineered viruses. The first indication being pursued is influenza due to a clear and established FDA regulatory approval pathway. The product in development failed during phase 3 clinical trials as a result the flu effort is being terminated. The development of a broad spectrum medical countermeasure will continue under the Antiviral Therapeutic program.

The Hemorrhagic Fever Virus (HFV) MCS Acquisition Program develops medical countermeasures (MCMs), using high threat, extremely lethal Biological Warfare Agents (BWAs) of the Filoviridae family agents as a model system. Medical countermeasures will be advanced through the Food and Drug Administration (FDA) licensure/approval via the FDA 'Animal Rule', which allows for the demonstration of efficacy in relevant animal model(s) when human testing is not ethically feasible. HFV will also conduct animal model development and refinement as needed to support the pivotal animal efficacy testing required under the FDA 'Animal Rule'. Completion of Phase I trials, animal model development, and manufacturing scale up were the focus of the TMRR phase. FDA approval for Filovirus therapeutics are expected following completion of the EMD phase. Beginning in FY17, the work will be continued under the Antiviral Therapeutic Countermeasures program.

The Antiviral Therapeutic Program (AV TX) will combine the efforts of the Emerging Infectious Diseases Therapeutics and the Hemorrhagic Fever Virus Program into a consolidated effort to develop and deliver FDA approved antiviral therapeutics for the warfighter, beginning in FY17. 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.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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The Agile Medical Paradigm (AMP) is the CBDP's strategic framework to accelerate the delivery of MCMs. To achieve this goal the DOD is establishing a medical countermeasures platform (MCMPT) capability. The goal of the MCMPT is to counter a variety of threat agents using standardized discovery, design, manufacturing, and testing processes to reduce the MCM development risks. Efforts will focus on establishing a rapid response capability through rationale design to support identification of viral targets and development of protein expression processes that will support rapid response.

The NGDS is an evolutionary acquisition family of systems to provide increments of capability over time across many echelons of the Combat Health Support System. The mission of the NGDS is to provide Chemical, biological and radiological (CBR) threat, and infectious disease identification and FDA-cleared diagnostics to inform individual patient treatment and CBR situational awareness and disease surveillance. NGDS Increment 1 will significantly improve diagnostic capabilities for deployable combat health support units (Role 3) while also improving operational suitability and affordability. The term "Role" is used to describe the stratification of the four tiers in which medical support is organized, on a progressive basis, to conduct treatment, evacuation, resupply, and functions essential to the maintenance of the health of the force. Role 3 support is normally provided at Division or Service equivalent level and includes specialist laboratory resources. NGDS Increment 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 DoD provides for the development of vaccines that are directed against validated biological warfare (BW) weapons to include bacteria, viruses, and toxins of biological origin. Effective medical countermeasures are urgently needed to negate the threat of these BW agents. Vaccines have been identified as the most efficient countermeasure against the validated threat of BW weapons. Products under development in this budget item include Recombinant Botulinum A/B, Plague, and Filovirus vaccines. Efforts to be conducted during the Engineering Manufacturing Development (EMD) Phase include the development of large scale manufacturing process and validation of that process, nonclinical studies, demonstration of manufacturing consistency, and expanded clinical human safety studies. The results of these efforts, and those conducted during the EMD phase, will be used to submit a Biologic License Application (BLA) to the Food and Drug Administration (FDA) for product licensure. To evaluate vaccine effectiveness, pivotal animal studies will be conducted concurrently with the Phase 3 clinical trial to satisfy the requirements of the FDA's "Animal Rule". The DoD anticipates that the FDA will approve these products for the Recombinant Botulinum A/B, Plague, and Filovirus programs using the Animal Rule, which allows for the demonstration of efficacy in relevant animal model(s). Upon FDA licensure, the product will transition to full-scale licensed production.

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: 1) MCMPT	-	-	0.500
FY 2018 Plans: Initiate establishment of advanced platform technologies within the DoD's Advanced Development Manufacturing (ADM) facility.			
Title: 2) NGDS 2	1.910	1.600	-
FY 2016 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Completed risk reduction activities for Man Portable Diagnostic System. ***FY 2017 Plans:*** Continue clinical trials for CBR multiplex lateral flow immunoassays			
Title: 3) NGDS 2 ***FY 2016 Accomplishments:*** Initiated system development and demonstration for CBRN NGDS Increment 2 man-portable diagnostic platform instrument. ***FY 2017 Plans:*** Continue system development and demonstration for CBR NGDS Increment 2 diagnostic platform instrument. ***FY 2018 Plans:*** Continue Engineering & Manufacturing Development on required system engineering activities and complete operational test activities for Man Portable Diagnostic System.	2.864	7.971	9.174
Title: 4) NGDS 2 ***FY 2017 Plans:*** Purchase lateral flow immunoassays to support clinical trials.	-	0.400	-
Title: 5) NGDS 2 ***FY 2017 Plans:*** Initiate clinical efforts to expand Test-mate diagnostic capability for Chemical agent threats.	-	2.200	-
Title: 6) NGDS 2 In Vitro Diagnostic Assay Development and Maturation ***FY 2018 Plans:*** Optimize In Vitro Diagnostic assays for NGDS 2 man-portable diagnostic system.	-	-	6.612
Title: 7) VAC BOT - Recombinant Botulinum Vaccine ***Description:*** Manufacturing Technology Transfer ***FY 2016 Accomplishments:*** Completed manufacturing of AgA engineering campaign. Initiated Bot Antigen A cGMP campaign and Bot Antigen B engineering campaign at new Contract Manufacturing Organization. ***FY 2017 Plans:***	12.740	4.000	4.500

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Complete the cGMP runs for the AgB manufacturing process and complete the Process Performance Qualification (PPQ) manufacturing runs for both serotypes. Initiate compounding and engineering runs for drug product fill-finish(vialing/fill and finish bottling the product)of drug substance. ***FY 2018 Plans:*** Initiate and complete cGMP and PPQ runs for drug product fill-finish(vialing/fill and finish bottling the product)of drug substance in preparation for the Phase 3 Clinical Trial.			
Title: 8) VAC BOT - Recombinant Botulinum Vaccine ***Description:*** Manufacturing/Analytical Technology Transfer ***FY 2016 Accomplishments:*** Continued non-clinical comparability studies to bridge newly manufactured drug substance and product to material made prior to the tech transfer. Submitted comparability protocol to the FDA and conducted technical data review with FDA (Type C meeting). Initiated efforts for the development of the Chemistry Manufacturing and Controls (CMC) submission to the FDA. ***FY 2017 Plans:*** Continue drug substance comparability efforts. Manufacturing focus on drug product fill finish activities in anticipation of the Phase 3 Clinical Trial. ***FY 2018 Plans:*** Continue drug substance comparability efforts. Initiate and completion of drug product GMP con lots and testing in preparation for the Phase 3 Clinical Trial.	6.232	2.652	31.629
Title: 9) VAC BOT ***Description:*** Program Management ***FY 2016 Accomplishments:*** Continued to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. ***FY 2017 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 Plans:***	2.274	2.000	2.010

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continue to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support.			
Title: 10) VAC FILO ***FY 2017 Plans:*** Initiate process development and manufacturing scale up.	-	4.300	-
Title: 11) VAC FILO ***FY 2017 Plans:*** Initiate nonclinical testing and assay qualification.	-	2.052	-
Title: 12) VAC PLG ***FY 2016 Accomplishments:*** Completed Animal efficacy studies. Send Pivotal Animal Efficacy Study design and Reproductive Toxicity Study design to FDA for approval. Continue requirements for safeguarding biological select agents and toxins. ***FY 2017 Plans:*** Initiate pivotal animal efficacy and reproductive toxicity studies to meet FDA licensure (start up activities, procure animals and vaccinate). Continue ongoing requirements for safeguarding biological select agents and toxins. ***FY 2018 Plans:*** Continue pivotal animal efficacy and reproductive toxicity studies to meet FDA licensure (in life activities, and immunological testing). Continue ongoing requirements for safeguarding biological select agents and toxins.	6.682	9.348	14.001
Title: 13) VAC PLG ***FY 2016 Accomplishments:*** Completed Fill-Finish Operations for release of Final Drug Product (FDP). Downselect, from among candidate contractors, a single contractor to conduct Phase 3 human clinical trial. Hold End-of-Phase 2 meeting with FDA. ***FY 2017 Plans:*** Initiate in-life portion of Phase 3 clinical trial to evaluate expanded safety and efficacy. ***FY 2018 Plans:*** Continued in-life portions of the Phase 3 clinical trial to evaluate expanded safety and efficacy.	1.298	24.212	19.854
Title: 14) VAC PLG ***FY 2016 Accomplishments:***	1.500	9.586	11.501

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Completed and finalize adjustments to production, Fill/Finish operations and PCA results after receipt of FDA guidance. ***FY 2017 Plans:*** Submit FDP documentation to FDA. Complete final studies on the PCA. Prepare for BLA submission to the FDA. ***FY 2018 Plans:*** Initiate warm base manufacturing to prepare for FDA pre-approval inspections.			
Title: 15) VAC PLG ***FY 2016 Accomplishments:*** Continued to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. ***FY 2017 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 Plans:*** Continue to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.	5.200	3.304	2.001
Title: 16) VAC SIP ***FY 2016 Accomplishments:*** Continued storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. ***FY 2017 Plans:*** Continue storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. ***FY 2018 Plans:*** Continue storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program.	2.722	2.688	2.703
Title: 17) CRP ***FY 2016 Accomplishments:***	2.477	1.753	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continued development/expansion of biological select agents reference materials to known and emerging threats. ***FY 2017 Plans:*** Continue development/expansion of biological select agents reference materials to known and emerging threats.			
Title: 18) CRP ***FY 2016 Accomplishments:*** Continued development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems. ***FY 2017 Plans:*** Continue development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems.	1.769	1.514	-
Title: 19) CRP ***FY 2016 Accomplishments:*** Continued QA/QC testing to encompass the transition and fielding of biological detection assays. ***FY 2017 Plans:*** Continue QA/QC testing to encompass the transition and fielding of biological detection assays.	1.149	0.745	-
Title: 20) CRP ***FY 2016 Accomplishments:*** Continued to maintain yearly accreditation audits such as ISO 9001, 17025, and Guide 34 certifications. Continue quality actions throughout to maintain the quality managed systems. ***FY 2017 Plans:*** Continue to maintain yearly accreditation audits such as ISO 9001, 17025, and Guide 34 certifications. Continue quality actions throughout to maintain the quality managed systems.	1.327	1.251	-
Title: 21) CRP ***FY 2016 Accomplishments:*** Continued development of prototypes/information for strains contained in Unified Culture Collection. ***FY 2017 Plans:*** Continue development of prototypes/information for strains contained in Unified Culture Collection.	2.122	1.894	-
Title: 22) DBPAP - Select Agent Reference Materials ***FY 2018 Plans:***	-	-	2.473

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continue (CRP) development/expansion of biological select agents reference materials to known and emerging threats.			
Title: 23) DBPAP - Development of Immunoassays ***FY 2018 Plans:*** Continue (CRP) development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems.	-	-	1.765
Title: 24) DBPAP - QA/QC Testing ***FY 2018 Plans:*** Continue (CRP) QA/QC testing to encompass the transition and fielding of biological detection assays.	-	-	1.147
Title: 25) DBPAP - Accreditation Audits ***FY 2018 Plans:*** Continue (CRP) to maintain yearly accreditation audits such as ISO 9001, 17025, and Guide 34 certifications. Continue quality actions throughout to maintain the quality managed systems.	-	-	1.323
Title: 26) DBPAP - Unified Culture Collection ***FY 2018 Plans:*** Continue (CRP) development of prototypes/information for strains contained in Unified Culture Collection.	-	-	2.118
Title: 27) EID TX ***FY 2016 Accomplishments:*** Completed analysis of data for all FDA required clinical trials, including the 1,716 patient Phase 3 clinical study. Developed and delivered FDA clinical study reports.	10.835	-	-
Title: 28) EID TX ***FY 2016 Accomplishments:*** Completed compilation of all data for the product. ***FY 2017 Plans:*** Submit influenza product and gain FDA approval.	0.636	3.856	-
Title: 29) HFV ***FY 2016 Accomplishments:*** Executed contract close out activities	10.131	-	-
Title: 30) HFV	6.544	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2016 Accomplishments: Initiated Joint Mobile Emerging Infectious Disease Clinical Capability (JMEDICC).			
Title: 31) AV TX - Candidate 1 ***FY 2017 Plans:*** Complete source selection activities and award contract for Filovirus countermeasure. Initiate pilot and pivotal aerosol efficacy studies in a BSL 4, under GLP conditions. Initiate manufacturing process optimization activities for scale-up to meet DoD production requirements. Validation of assays to support GMP manufacture. Continue pivotal animal efficacy studies via aerosol and parenteral routes of challenge in non-human primates for Filo countermeasure. Continue manufacturing process optimization activities. Manufacture of GMP compliant drug substance and drug product.	-	18.897	-
Title: 32) AV TX Candidate 1 ***FY 2018 Plans:*** Clinical: Conduct clinical trials studying efficacy to include continued resistance monitoring.	-	-	1.100
Title: 33) AV TX Candidate 1 ***FY 2018 Plans:*** Non-clinical: Continue efficacy studies with Non Human Primates infected with Ebola virus.	-	-	22.142
Accomplishments/Planned Programs Subtotals	80.412	106.223	136.553

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	8.541	7.145	11.950	-	11.950	9.850	3.728	6.060	6.532	Continuing	Continuing
• JM8788: *NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)*	3.300	7.395	6.938	-	6.938	5.842	2.919	4.826	2.644	Continuing	Continuing
• JX0005: *DOD BIOLOGICAL VACCINE PROCUREMENT (VACCINES)*	0.185	0.185	0.183	-	0.183	0.183	0.183	0.182	0.182	Continuing	Continuing
• JX0210: *DEFENSE BIOLOGICAL PRODUCTS ASSURANCE PROGRAM (DBPAP)*	1.005	1.005	0.995	-	0.995	0.975	0.972	0.874	0.788	Continuing	Continuing

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

MCM PLATFORM TECHNOLOGIES (MCMPT)

The goal of the MCMPT is to counter a variety 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.

NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)

The NGDS Increment 1 program has a streamlined MS A to MS C - Limited Deployment acquisition strategy. The NGDS Increment 1 is intended to replace the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17.

The NGDS Increment 2 program addresses CBRN agents and concepts of employment (COEs) that the NGDS Increment 1 Film Array does not address. More than one materiel solution is required to expand the scope of CBRN agent diagnostics across multiple echelons of care. NGDS Increment 2 will employ a system of systems approach to bridge identified capability gaps for man-portable diagnostics, complementary bench top diagnostics, chemical diagnostics, and handheld disposable diagnostics. NGDS Increment 2 will initiate engineering development 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 establish programs of record for bench top, chemical and handheld disposable diagnostic capability development, based on individual determinations of technology maturity to meet user requirements.

BOTULINUM VACCINE (VAC BOT)

The Prime System Contractor (Dynport Vaccine Company/DVC LLC, Frederick MD) will function as the FDA regulatory sponsor and will perform all ancillary, regulatory, quality assurance, and data management as required by the FDA. The current budget supports development through FDA licensure of a recombinant bivalent (A and B) botulinum vaccine. Other serotypes will be developed through an evolutionary approach, as funding becomes available. The Advanced Component Development and Prototypes (ACD&P) phase included the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine was evaluated for safety and immunogenicity in a small human clinical trial (Phase 1). During the Engineering Manufacturing Development (EMD) Phase, the prime contractor stabilized the vaccine formulation, validated the manufacturing process and testing protocols, optimized the delivery systems and manufactured consistency lots. Phase 2 clinical trials were performed and provided additional safety data. The evaluation of efficacy in pivotal animal

studies to satisfy FDA requirements for the Animal Rule has been completed. The remaining efforts to be conducted during the EMD phase include the Phase 3 clinical trial to demonstrate safety in an expanded volunteer population. The Low Rate Initial Production (LRIP) decision will be conducted after the manufacturing process has been validated and consistency lots have been produced. A Biologics License Application (BLA) is be submitted to the FDA including all clinical, nonclinical, and manufacturing data. The FDA grants licensure to products that are determined to be safe and efficacious.

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.

PLAGUE VACCINE (VAC PLG)

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

SPECIAL IMMUNIZATION PROGRAM (VAC SIP)

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The SIP effort Life Cycle Cost Estimate (LCCE) manages the IND vaccines which provide additional protection to laboratory workers performing research on the infectious agents for Tularemia, Eastern Equine Encephalitis (EEE), Western Equine Encephalitis (WEE), Venezuelan Equine Encephalitis (VEE), and Q-Fever. Efforts include Good Manufacturing Practices (GMP) storage and periodic potency testing to support the FDA regulated Investigational New Drug (IND) reporting requirements. This Department of Defense program supports the Federal interagency with this effort, as well as academic and industry partners.

CRITICAL REAGENTS PROGRAM (CRP)

The Critical Reagents Program's (CRP) strategy establishes a core research and development capability to develop biological threat agent reference materials (antigens, nucleic acids, and antibodies) and detection and diagnostic assays for biothreat agent detection that shall be used across multiple detection and diagnostic platforms. In addition, this strategy includes a formal, validated advanced development process for transitioning new assays into production and subsequent integration with the appropriate detection/diagnostic platform. This program will transition to the Defense Biological Products Assurance Program (DBPAP) in FY18.

DEFENSE BIOLOGICAL PRODUCTS ASSURANCE PROGRAM (DBPAP)

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

EMERGING INFECTIOUS DISEASES - THERAPUTIC (EID TX)

The goal of the EID Tx program is to develop a safe and effective MCM against biothreats of interest to the DoD. The first step of the acquisition strategy is to develop an MCM for influenza due to a clear and established FDA regulatory approval pathway. The Phase 2 clinical trial is complete, demonstrating both safety and efficacy in humans. Program was authorized by FDA to move forward at End of Phase 2 meeting on 3 SEP 13. Phase 3 clinical trials for EID Tx against influenza began during 1QFY14. The MCM was unsuccessful in the Phase 3 clinical trials, removing the expectation of FDA approval. In June 2016, the recommendation was made to end the EID - Flu product development contract and transition the program to AV Tx. It was determined that the influenza product, Favipiravir, would not meet contract requirements and program key performance parameters. The FDA informed the sponsor that the product under development did not provide a clinically significant benefit and was unlikely to be approved for the current indication. As a result, the program will package select data while removing all non-essential activities, allowing the contract to end with the current PoP in March 2017. The requirement for a broad-spectrum Antiviral will continue under the AV Tx Program.

HEMORRHAGIC FEVER VIRUS (HFV)

In June 2015, TKM-Ebola failed two separate clinical trials for safety and efficacy. Tekmira Pharmaceuticals saw no path forward for the existing product and proposed a complete reformulation of the drug. A concurrence was reached to close out the TKM-Ebola development contract at the end of the base period in January 2016 with all exercised option CLINs also being terminated. This program is being combined with EID - New Indications to form the new Antiviral Program starting in FY17.

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ANTI-VIRAL THERAPEUTICS (AV TX)

The acquisition strategy combined the HFV and 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. Candidates selected for entry into the EMD phase of development will be executed under the Antiviral Therapeutic program in FY17. Candidates selected which are appropriate 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 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. During the Production and Deployment phase, full rate manufacturing and stockpile production will be pursued. If the FDA mandates post-marketing surveillance studies, they will be conducted during Production and Deployment.

E. Performance Metrics

N/A

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCMPT - HW S - Establishing Advanced Platform Technologies	C/CPFF	TBD : TBD	0.000	0.000		0.000		0.450	Jan 2018	-		0.450	Continuing	Continuing	0.000
NGDS - HW C - IVD Assay Development and Maturation Activities	Various	TBD : TBD	0.000	0.000		0.000		5.088	Dec 2017	-		5.088	Continuing	Continuing	0.000
NGDS - HW C - Complete assay optimization for multiplex lateral flow immunoassay to support clinical trials	MIPR	TBD : TBD	0.000	0.000		2.000	Nov 2016	0.000	Dec 2017	-		0.000	Continuing	Continuing	0.000
NGDS - HW C - Develop Diagnostic Platform	MIPR	TBD : TBD	0.000	0.000		5.518	Dec 2016	7.060	Dec 2017	-		7.060	Continuing	Continuing	0.000
VAC BOT - HW S - Manufacturing, Validation and Consistency Lot Production	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	6.570	1.400	Dec 2015	2.000	Dec 2016	36.139	Dec 2017	-		36.139	Continuing	Continuing	0.000
VAC BOT - HW S - Manufacturing Tech Transfer	MIPR	Battelle Memorial Institute : Columbus, OH	9.189	3.147	Jan 2016	2.000	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - HW S - Manufacturing Scale Up	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		4.300	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - HW S - Nonclinical & Assay Development	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		2.052	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - HW S - Manufacturing, Validation, and Consistency Lot Production	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	7.855	3.400	Dec 2015	14.638	Dec 2016	19.500	Dec 2017	-		19.500	Continuing	Continuing	0.000
CRP - HW C - Scale-up of Select Biological Threat Agent Reference Materials	MIPR	Various : Various	16.069	1.002	Jun 2016	2.521	Jun 2017	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 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CRP - HW C - Development of Select Biological Threat Agent Reference Materials and Assays	MIPR	Various : Various	12.007	0.615	Jun 2016	1.686	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
DBPAP - HW C - Scale-up of Select Biological Threat Agent Reference Materials	MIPR	Various : Various	0.000	0.000		0.000		2.043	Jun 2018	-		2.043	Continuing	Continuing	0.000
DBPAP - HW C - Development of Select Biological Threat Agent Reference Materials and Assays	MIPR	Various : Various	0.000	0.000		0.000		1.826	Jun 2018	-		1.826	Continuing	Continuing	0.000
EID TX - SW SB - TMT EID FLU	C/CPFF	MediVector Inc. : Boston, MA	203.902	6.569	Dec 2015	2.932	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
HFV - HW S - JMEDICC	MIPR	Various : Various	0.000	3.289	Feb 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
AV TX - Candidate 1 - Complete Pivotal Animal Efficacy Studies	C/CPAF	TBD : TBD	0.000	0.000		8.626	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
AV TX - Candidate 1 - Manufacturing Process Optimization and Scale up	C/CPIF	TBD : TBD	0.000	0.000		6.059	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
AV TX - AV TX Pivotal Animal Efficacy Studies (Non Clinical)	C/FP	Gilead Sciences : San Francisco, CA	0.000	0.000		0.000		17.160	Nov 2017	-		17.160	Continuing	Continuing	0.000
AV TX - AV TX - Pivotal Animal Efficacy Studies (Clinical)	C/FP	Gilead Sciences : San Francisco, CA	0.000	0.000		0.000		0.700	Mar 2018	-		0.700	Continuing	Continuing	0.000
		Subtotal	255.592	19.422		54.332		89.966		-		89.966	-	-	0.000

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS - ES C - Studies and WIPT Support	MIPR	Various : Various	0.000	0.200	Jun 2016	0.971	Dec 2016	0.971	Dec 2017	-		0.971	Continuing	Continuing	0.000
VAC BOT - TD/D C - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	18.124	5.850	Dec 2015	1.208	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - TD/D C - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	18.123	1.500	Dec 2015	1.600	Dec 2016	3.000	Dec 2017	-		3.000	Continuing	Continuing	0.000
VAC SIP - Storage and Distribution of Vaccines	SS/FP	Fisher BioServices : Rockville, MD	0.640	0.350	Dec 2015	0.370	Dec 2016	0.400	Dec 2017	-		0.400	Continuing	Continuing	0.000
CRP - ES C - Select Biological Threat Agent Reference Material Support	MIPR	Various : Various	4.814	0.413	Jun 2016	0.800	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
CRP - ES C - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	1.933	1.180	Jun 2016	0.350	Jun 2017	0.000		-		0.000	Continuing	Continuing	0.000
DBPAP - ES C - Select Biological Threat Agent Reference Material Support	MIPR	Various : Various	0.000	0.000		0.000		0.820	Jun 2018	-		0.820	Continuing	Continuing	0.000
DBPAP - ES C - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.280	Jun 2018	-		1.280	Continuing	Continuing	0.000
		Subtotal	43.634	9.493		5.299		6.471		-		6.471	-	-	0.000

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS - OTHT C - Test and evaluate interagency	MIPR	TBD : TBD	0.000	0.300	Jun 2016	0.000		0.300	Mar 2018	-		0.300	Continuing	Continuing	0.000
NGDS - OTHT C - Evaluate Test Mate	MIPR	TBD : TBD	0.000	0.000		2.200	Dec 2016	0.000	Dec 2017	-		0.000	Continuing	Continuing	0.000
VAC BOT - DTE C - Clinical Trials - Nonclinical Studies	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	72.910	6.075	Dec 2015	2.500	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - DTE C - Clinical Trials/Non-Clinical Studies	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	80.979	5.480	Dec 2015	24.212	Dec 2016	22.857	Dec 2017	-		22.857	Continuing	Continuing	0.000
VAC SIP - OTHT C - Potency Testing of Vaccines	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	6.988	2.087	Dec 2015	2.028	Dec 2016	2.003	Dec 2017	-		2.003	Continuing	Continuing	0.000
		Subtotal	160.877	13.942		30.940		25.160		-		25.160	-	-	0.000

Remarks

USAMRIID will conduct testing acting as a sub-contractor to TEKMIRA. TEKMIRA will receive USAMRIID test data and write the final report.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MCMPT - PM/MS C - Management	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		0.050	Jan 2018	-		0.050	Continuing	Continuing	0.000
NGDS - PM/MS S - Product Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	2.374	Dec 2015	0.732	Dec 2016	0.136	Dec 2017	-		0.136	Continuing	Continuing	0.000

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS - PM/MS SB - Product Management Systems Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	1.900	Jun 2016	0.750	Dec 2016	2.231	Dec 2017	-		2.231	Continuing	Continuing	0.000
VAC BOT - PM/MS C - JPM Chemical and Biological Medical Systems (JPM CBMS), Fort Detrick, MD	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	13.234	2.500	Dec 2015	0.944	Dec 2016	2.000	Dec 2017	-		2.000	Continuing	Continuing	0.000
VAC BOT - PM/MS S - Joint Vaccine Acquisition Program Management	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	55.773	2.274	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - PM/MS S - Joint Vaccine Acquisition Program Management Office	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	17.936	1.700	Dec 2015	6.000	Dec 2016	2.000	Dec 2017	-		2.000	Continuing	Continuing	0.000
VAC PLG - PM/MS S - Program Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	35.990	2.600	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC SIP - PM/MS SB - Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.024	0.285	Mar 2016	0.290	Mar 2017	0.300	Mar 2017	-		0.300	Continuing	Continuing	0.000
CRP - PM/MS C - Product Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	3.736	0.965	Mar 2016	0.800	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
CRP - PM/MS C - Product Management Support #2	SS/FFP	Goldbelt Raven LLC. : Frederick, MD	9.623	1.035	Jun 2016	1.000	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CRP - PM/MS C - Chemical and Biological Medical Systems Office	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	2.330	3.634	Jun 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DBPAP - PM/MS C - Product Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		1.043	Jan 2018	-		1.043	Continuing	Continuing	0.000
DBPAP - PM/MS C - Product Management Support #2	SS/FFP	Goldbelt Raven LLC. : Frederick, MD	0.000	0.000		0.000		1.123	Feb 2018	-		1.123	Continuing	Continuing	0.000
DBPAP - PM/MS C - Chemical and Biological Medical Systems Office	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		0.691	Jun 2018	-		0.691	Continuing	Continuing	0.000
EID TX - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	4.024	1.589	Jan 2016	0.610	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
EID TX - PM/MS SB - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	5.633	0.708	Jan 2016	0.083	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
EID TX - PM/MS SB - Management Support #3	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.492	1.451	Jan 2016	0.037	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
EID TX - PM/MS C - Contractor Systems	C/FP	Various : Various	5.907	1.154	Dec 2015	0.194	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering/ Program Management Support															
HFV - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	2.001	7.000	Jan 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HFV - PM/MS SB - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.793	3.035	Jan 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HFV - PM/MS SB - Management Support #3	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	1.959	0.592	Jan 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HFV - PM/MS C - Contractor Systems Engineering/ Program Management Support	C/FP	Various : Various	1.281	2.759	Jan 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Candidate 1 - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		1.314	Jan 2017	1.232	Jan 2018	-		1.232	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Candidate 1 - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		1.001	Jan 2017	1.573	Jan 2018	-		1.573	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Candidate 1 - Management Support #3	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.000	0.000		0.577	Jan 2017	0.602	Jan 2018	-		0.602	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AV TX - PM/MS - SB - Candidate 1 - Management Support #4	C/FP	Various : Various	0.000	0.000		1.320	Jan 2017	1.975	Jan 2018	-		1.975	Continuing	Continuing	0.000
		Subtotal	162.736	37.555		15.652		14.956		-		14.956	-	-	0.000

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	622.839	80.412		106.223		136.553		-		136.553	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

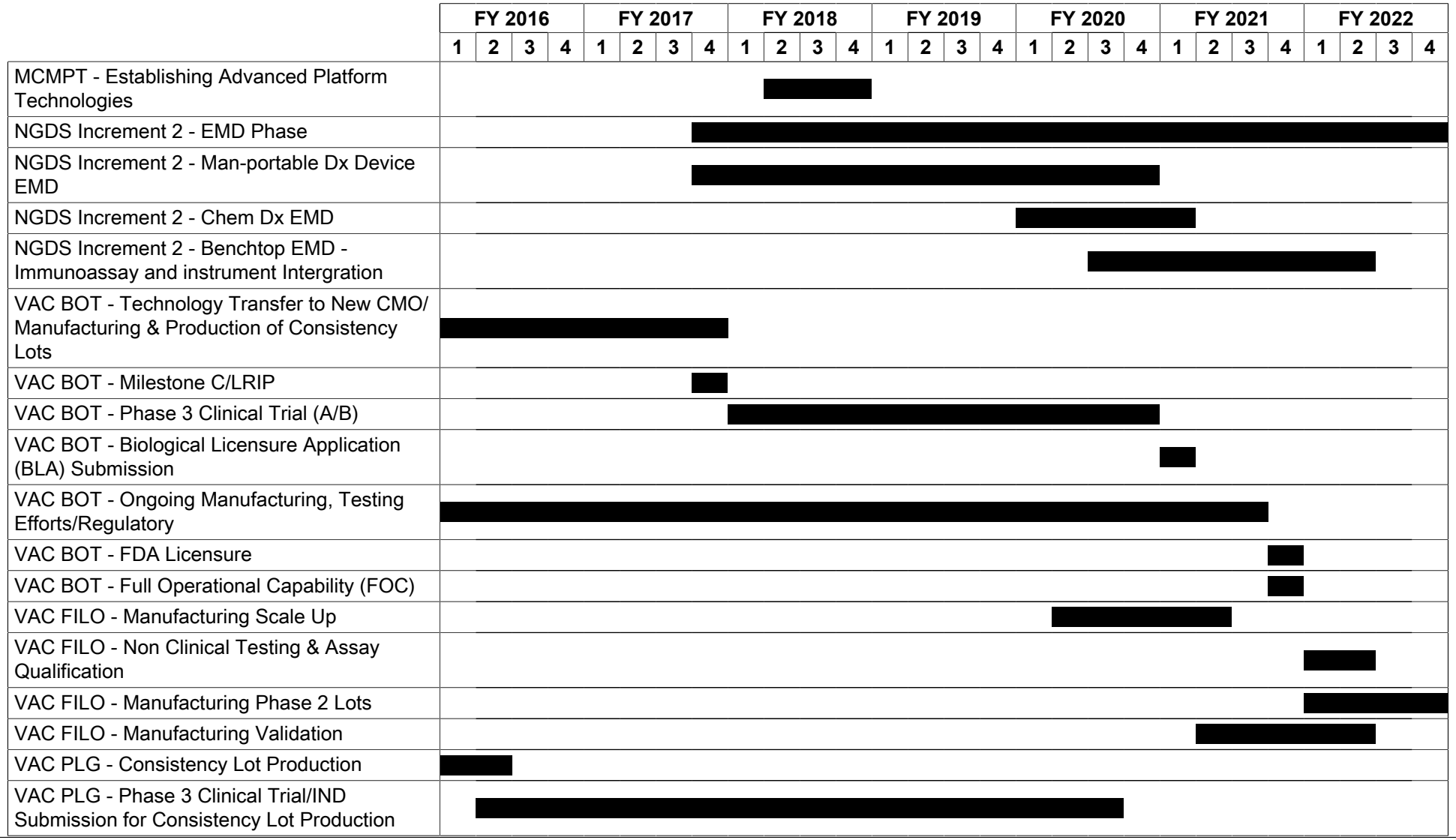

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

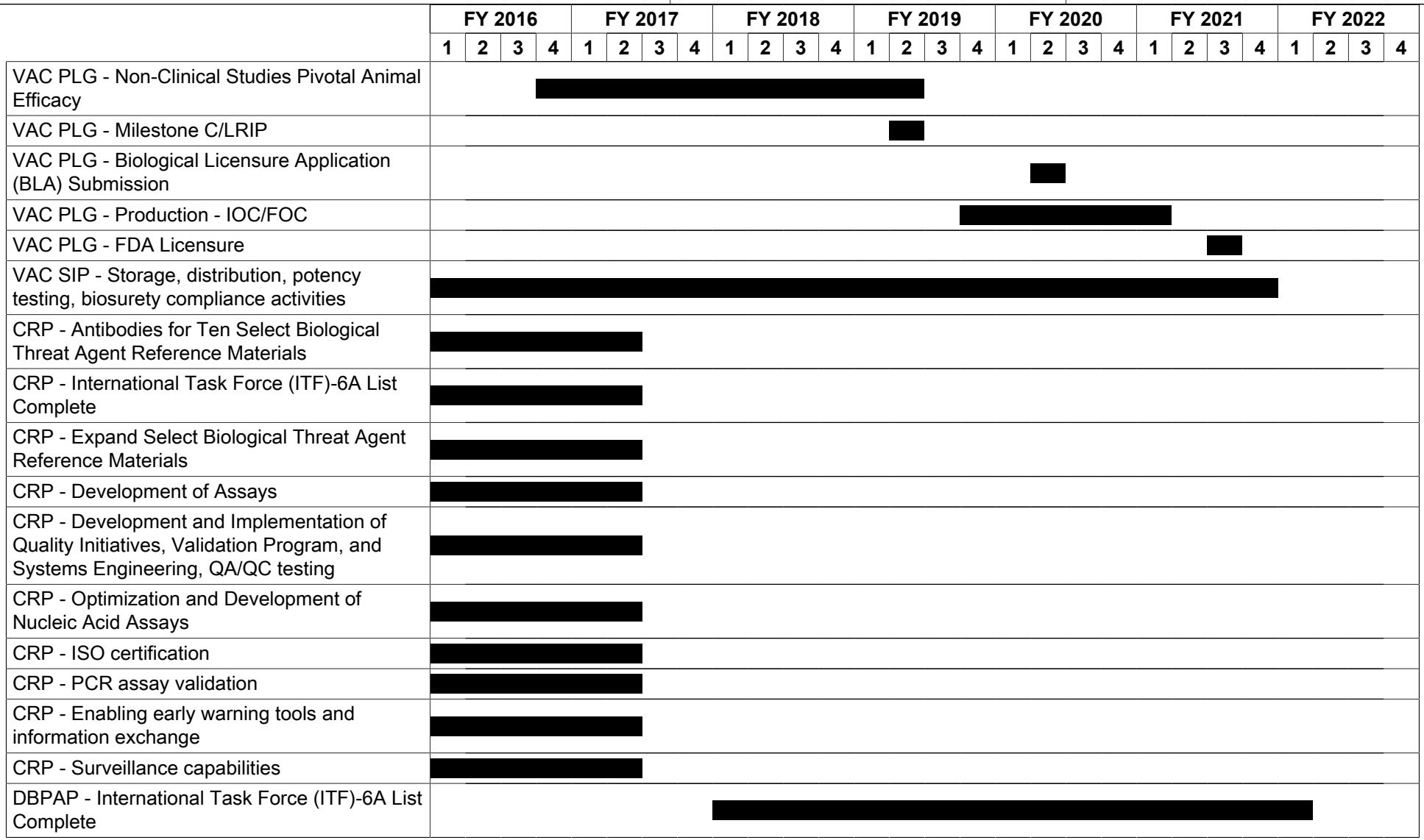

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

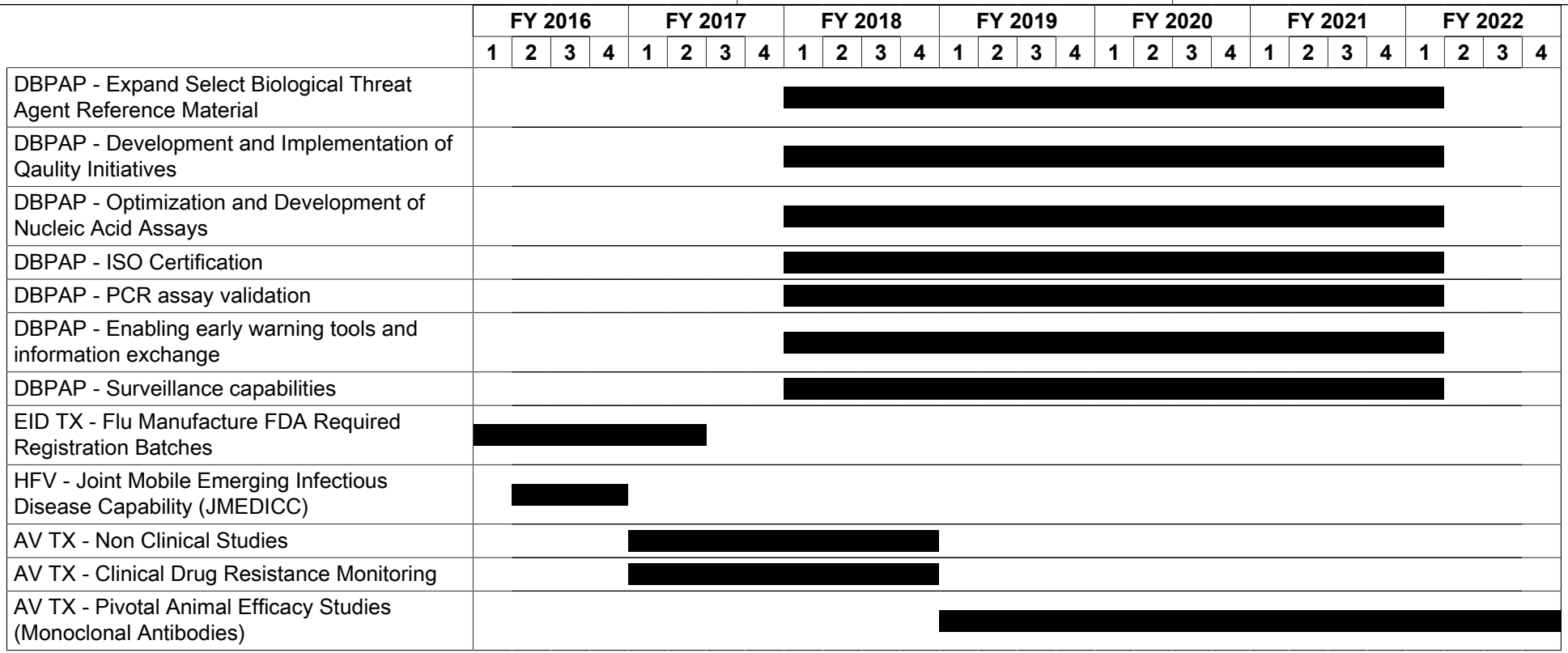

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MCMPT - Establishing Advanced Platform Technologies	2	2018	4	2018
NGDS Increment 2 - EMD Phase	4	2017	4	2022
NGDS Increment 2 - Man-portable Dx Device EMD	4	2017	4	2020
NGDS Increment 2 - Chem Dx EMD	1	2020	1	2021
NGDS Increment 2 - Benchtop EMD - Immunoassay and instrument Intergration	3	2020	2	2022
VAC BOT - Technology Transfer to New CMO/Manufacturing & Production of Consistency Lots	1	2016	4	2017
VAC BOT - Milestone C/LRIP	4	2017	4	2017
VAC BOT - Phase 3 Clinical Trial (A/B)	1	2018	4	2020
VAC BOT - Biological Licensure Application (BLA) Submission	1	2021	1	2021
VAC BOT - Ongoing Manufacturing, Testing Efforts/Regulatory	1	2016	3	2021
VAC BOT - FDA Licensure	4	2021	4	2021
VAC BOT - Full Operational Capability (FOC)	4	2021	4	2021
VAC FILO - Manufacturing Scale Up	2	2020	2	2021
VAC FILO - Non Clinical Testing & Assay Qualification	1	2022	2	2022
VAC FILO - Manufacturing Phase 2 Lots	1	2022	4	2022
VAC FILO - Manufacturing Validation	2	2021	2	2022
VAC PLG - Consistency Lot Production	1	2016	2	2016
VAC PLG - Phase 3 Clinical Trial/IND Submission for Consistency Lot Production	2	2016	3	2020
VAC PLG - Non-Clinical Studies Pivotal Animal Efficacy	4	2016	2	2019
VAC PLG - Milestone C/LRIP	2	2019	2	2019
VAC PLG - Biological Licensure Application (BLA) Submission	2	2020	2	2020

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
VAC PLG - Production - IOC/FOC	4	2019	1	2021
VAC PLG - FDA Licensure	3	2021	3	2021
VAC SIP - Storage, distribution, potency testing, biosurety compliance activities	1	2016	4	2021
CRP - Antibodies for Ten Select Biological Threat Agent Reference Materials	1	2016	2	2017
CRP - International Task Force (ITF)-6A List Complete	1	2016	2	2017
CRP - Expand Select Biological Threat Agent Reference Materials	1	2016	2	2017
CRP - Development of Assays	1	2016	2	2017
CRP - Development and Implementation of Quality Initiatives, Validation Program, and Systems Engineering, QA/QC testing	1	2016	2	2017
CRP - Optimization and Development of Nucleic Acid Assays	1	2016	2	2017
CRP - ISO certification	1	2016	2	2017
CRP - PCR assay validation	1	2016	2	2017
CRP - Enabling early warning tools and information exchange	1	2016	2	2017
CRP - Surveillance capabilities	1	2016	2	2017
DBPAP - International Task Force (ITF)-6A List Complete	1	2018	1	2022
DBPAP - Expand Select Biological Threat Agent Reference Material	1	2018	1	2022
DBPAP - Development and Implementation of Qaulity Initiatives	1	2018	1	2022
DBPAP - Optimization and Development of Nucleic Acid Assays	1	2018	1	2022
DBPAP - ISO Certification	1	2018	1	2022
DBPAP - PCR assay validation	1	2018	1	2022
DBPAP - Enabling early warning tools and information exchange	1	2018	1	2022
DBPAP - Surveillance capabilities	1	2018	1	2022
EID TX - Flu Manufacture FDA Required Registration Batches	1	2016	2	2017
HFV - Joint Mobile Emerging Infectious Disease Capability (JMEDICC)	2	2016	4	2016
AV TX - Non Clinical Studies	1	2017	4	2018
AV TX - Clinical Drug Resistance Monitoring	1	2017	4	2018

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AV TX - Pivotal Animal Efficacy Studies (Monoclonal Antibodies)	1	2019	4	2022

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program			Date: May 2017
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
MC5: *MEDICAL CHEMICAL DEFENSE (EMD)*	-	64.773	39.504	47.388	-	47.388	38.499	18.325	16.966	20.491	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 to provide an effective capability for medical defense against chemical warfare agent threats facing U.S. forces in the field. This project supports efforts in the Engineering and Manufacturing Development (EMD) phase of the acquisition strategy for prophylactic, pre-treatment, and therapeutic drugs and diagnostic medical devices for the protection, treatment, detection, and medical management of chemical warfare agent exposures. Project provides for the research and development of safety studies, manufacturing scale-up, process validation, drug interaction, performance test, and submission of the Food and Drug Administration (FDA) drug licensure application(s). This program currently includes: (1) Alternative Autoinjector (AUTOINJ), which consists of investigating an FDA approved alternative source(s), beyond the single current DoD source, for autoinjectors that deliver DoD nerve agent antidote and treatment capabilities to the warfighter; mitigates capability fielding and operational readiness risks. This resulted from the manufacturing and quality issues for the Advanced Anticonvulsant System (AAS) program, Midazolam in an autoinjector. (2) Bioscavenger (BSCAV), a new capability, to be used as a prophylaxis against nerve agents; (3) Improved Nerve Agent Treatment System (INATS) an enhanced chemical warfare nerve agent treatment regimen consisting of an improved oxime to replace the current fielded oxime 2-pralidoxime chloride (2-PAM), a centrally acting therapeutic to increase survival, and studies to generate data to support use of pyridostigmine bromide (PB), as a pretreatment for nerve agents in addition to soman; (4) The Advanced Anticonvulsant System (AAS), consists of Midazolam in an autoinjector for treatment of nerve agent induced seizures. Midazolam, injected intramuscularly, will treat traditional nerve agent and non-traditional agent-induced seizures and prevent subsequent neurological damage. Midazolam is more water-soluble than diazepam (the currently fielded medication to control nerve agent-induced seizures) and terminates nerve agent-induced seizures more quickly than diazepam. AAS will not eliminate the need for other protective and therapeutic systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: 1) AUTOINJ	-	2.950	3.241
FY 2017 Plans: Initiate manufacturing of autoinjector consistency lots.			
FY 2018 Plans: Continue manufacturing of autoinjector consistency lots.			
Title: 2) AUTOINJ	-	1.980	2.500
FY 2017 Plans: Initiate storage stability and bioequivalency testing.			
FY 2018 Plans:			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continue storage stability and bioequivalency testing for autoinjector.			
Title: 3) AUTOINJ ***FY 2017 Plans:*** Coordinate New Drug Application meetings with the FDA. ***FY 2018 Plans:*** Initiate FDA preparation, filing, and meetings for single and dual drug autoinjectors.	-	0.218	0.500
Title: 4) AUTOINJ ***FY 2018 Plans:*** Initiate prototype development of single and dual drug autoinjector	-	-	2.250
Title: 5) AUTOINJ ***FY 2018 Plans:*** Initiate human factors and environmental testing for single and dual drug autoinjectors.	-	-	1.350
Title: 6) AAS ***FY 2016 Accomplishments:*** Initiated process qualification of manufacturing system in support of New Drug Application re-submittal to the FDA.	0.800	-	-
Title: 7) AAS ***FY 2016 Accomplishments:*** Initiated reverse engineering efforts for the existing 2-PAM autoinjector.	1.000	-	-
Title: 8) BSCAV ***FY 2016 Accomplishments:*** Initiated particle characterization in drug product.	7.500	-	-
Title: 9) BSCAV ***FY 2016 Accomplishments:*** Initiated assay development for nonclinical toxicity and phase 1 studies.	7.822	-	-
Title: 10) BSCAV ***FY 2016 Accomplishments:***	4.655	-	-

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Continued storage and stability testing of purified product.			
Title: 11) BSCAV ***FY 2016 Accomplishments:*** Completed engineering and scale-up manufacturing runs.	9.296	-	-
Title: 12) BSCAV ***FY 2016 Accomplishments:*** Initiated pilot nonclinical toxicity and pharmacokinetic (PK) and efficacy studies. ***FY 2017 Plans:*** Continue pilot nonclinical toxicity and pharmacokinetic (PK) and efficacy studies. ***FY 2018 Plans:*** Continue pilot nonclinical toxicity and pharmacokinetic (PK) and efficacy studies.	8.496	6.018	4.337
Title: 13) BSCAV ***FY 2016 Accomplishments:*** Initiated cGMP manufacturing for clinical and nonclinical studies. ***FY 2017 Plans:*** Continue cGMP manufacturing for clinical and nonclinical studies. ***FY 2018 Plans:*** Continue cGMP manufacturing for clinical and nonclinical studies.	8.071	8.100	8.505
Title: 14) BSCAV ***FY 2017 Plans:*** Initiate phase 1 clinical pharmacokinetic (PK) and safety studies. ***FY 2018 Plans:*** Continue phase 1 clinical pharmacokinetic (PK) and safety studies.	-	3.100	3.255
Title: 15) BSCAV ***FY 2016 Accomplishments:*** Continued development of a manufacturing process for additional source materials. ***FY 2017 Plans:***	8.430	4.600	4.830

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Complete development of a manufacturing process for additional source materials. ***FY 2018 Plans:*** Initiate Human Clinical Phase 2/3 Study for expanded safety.			
Title: 16) BSCAV ***FY 2017 Plans:*** Initiate nonclinical studies to evaluate drug-drug interactions in small animal models. ***FY 2018 Plans:*** Continue nonclinical studies to evaluate drug-drug interactions in small animal models.	-	2.400	2.520
Title: 17) INATS ***FY 2016 Accomplishments:*** Continued nonclinical studies to expand indications for pyridostigmine bromide (PB). ***FY 2017 Plans:*** Complete nonclinical studies (in guinea pig) to expand indications for pyridostigmine bromide (PB).	1.198	1.500	-
Title: 18) INATS ***FY 2016 Accomplishments:*** Completed nonclinical studies to evaluate the efficacy of centrally-acting therapeutics with fielded oxime.	3.203	-	-
Title: 19) INATS ***FY 2016 Accomplishments:*** Initiated pilot scale development and final drug product (FDP).	1.483	-	-
Title: 20) INATS ***FY 2016 Accomplishments:*** Initiated small-scale current Good Manufacturing Practice (cGMP) efforts and manufacture of clinical trial material. ***FY 2017 Plans:*** Complete small-scale centrally acting current Good Manufacturing Practice (cGMP) efforts and manufacture of clinical trial material.	2.819	1.800	-
Title: 21) INATS ***FY 2017 Plans:***	-	3.838	2.294

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Initiate large-scale centrally acting current Good Manufacturing Practice (cGMP) efforts and manufacturing of clinical trial material. ***FY 2018 Plans:*** Continue large-scale centrally acting current Good Manufacturing Practice (cGMP) efforts and manufacturing of clinical trial material.			
Title: 22) INATS ***FY 2017 Plans:*** Initiate centrally acting phase 1 clinical trial. ***FY 2018 Plans:*** Complete centrally acting phase 1 clinical trial.	-	3.000	5.400
Title: 23) INATS ***FY 2018 Plans:*** Initiate & complete centrally acting reformulation efforts and bridging studies.	-	-	6.406
Accomplishments/Planned Programs Subtotals	64.773	39.504	47.388

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• JM6677: *ADVANCED ANTICONVULSANT SYSTEM (AAS)*	0.000	0.000	0.000	-	0.000	0.360	0.360	2.700	2.700	Continuing	Continuing

Remarks

D. Acquisition Strategy

ALTERNATE AUTOINJECTOR MANUFACTURER CAPABILITY (AUTOINJ)

The Alternative Autoinjector Investigation will identify an alternative source(s) to develop, and provide required and FDA approved autoinjector-delivered nerve agent antidote and treatment capabilities to the services. Currently, a single DoD source provides all of these capabilities. That single source is experiencing manufacturing and quality issues leading to risk that the services may not meet their operational requirements. This effort leverages previous work begun under the Advanced Anticonvulsant System (AAS) autoinjector-delivered product wherein the single manufacturer notified the AAS program office that the FDA had noted manufacturing and quality issues which impacted the AAS program as well as all other DoD autoinjector-delivered nerve agent antidotes and treatments. At that time, the AAS program began investigating alternative sources through the release of a request for Information (RFI). Subsequent to the RFI, the AAS program awarded a task order under an

existing IDIQ contract vehicle to begin the identification efforts. As this issue is well beyond the scope of the AAS program and impacts all developmental and fielded autoinjector-delivered capabilities, the Joint Program Executive Office, Chemical and Biological Defense (JPEO-CBD) approved the strategy to expand the alternative autoinjector effort beyond AAS, thus initiating a new effort benefiting both fielded and developmental capabilities. The JPEO-CBD also approved the management and oversight of the effort via a series of In-Process Reviews (IPRs). The effort will proceed through the submission of a New Drug Application and will culminate with FDA approval of an alternative autoinjector source(s).

ADVANCED ANTICONVULSANT SYSTEM (AAS)

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

A contractor shall be responsible for conducting activities associated with drug development in a manner consistent with eventual approval by the Food and Drug Administration (FDA). The contractor shall sponsor the drug to the FDA and hold all approvals and/or licenses. During the System Development and Demonstration (SDD) Phase, large scale manufacturing, Phase 2 human clinical safety studies and definitive animal efficacy studies will be conducted. FDA approval of the countermeasure is an exit criterion for the SDD phase. During the Production and Deployment Phase, sufficient quantities of product to meet Initial Operational Capability will be purchased. Subsequent purchases will be made by the Defense Logistics Agency. Any post-marketing surveillance requested by the FDA will be the responsibility of the contractor.

In addition, the program will assess the viability of establishing an alternative manufacturing capability for currently fielded autoinjectors used for therapeutic treatment and medical management of chemical warfare agent exposures.

BIOSCAVENGER (BSCAV)

Used a serial evaluation of candidates to achieve competitive prototyping in the Technology Maturation and Risk Reduction phase which culminated in a down-select decision. The Bioscavenger program issued a Request For Proposal (RFP) to select the best value for the government for a prophylaxis to support an initial limited user group. During the System Development and Demonstration (SDD) phase the program will continue to exercise management oversight with system integration support of a commercial partner to ensure that manufacturing of the product is in accordance with Food and Drug Administration (FDA) regulations and guidelines. The RFP for product manufacturing includes options for transition to the Medical Countermeasures Initiative (MCMI) Advanced Development and Manufacturing (ADM) capability. Prior to FDA licensure, a commercial partner will perform a Phase 2 human clinical safety study, definitive animal efficacy studies, and toxicology studies. The system integrator will also develop and manufacture a product formulation and delivery system and will submit a New Drug Application and seek FDA approval. The SDD phase will culminate in FDA licensure of the Bioscavenger. During the Production and Deployment phase, the Bioscavenger program, in conjunction with a commercial partner, will pursue full rate production and conduct any FDA-mandated post-marketing surveillance studies. Concurrently the Bioscavenger program will conduct an

analysis of alternative manufacturing technologies, investigate additional product indications, and pursue an expanded force prophylaxis once alternate technologies have matured.

IMPROVED NERVE AGENT TREATMENT SYSTEM (INATS)

The INATS' evolutionary Acquisition Strategy has expanded to (1) align all Department of Defense nerve agent therapeutics under it, and to (2) insert a centrally-acting (CA) anticholinergic agent. This strategy employs an incremental approach to provide independent, and more rapid deliveries of oxime, expanded PB indications, and CA capabilities than in a combined treatment regimen delivery. 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 efficacy studies addressing the PB indication. In the Engineering and Manufacturing Development (EMD) phase for the oxime and CA each capability, 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 product. 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: FY 2018 Chemical and Biological Defense Program			Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AUTOINJ - HW S - Autoinjector - Manufacturing of Consistency Lots	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		2.840	Dec 2016	3.000	Dec 2017	-		3.000	Continuing	Continuing	0.000
AUTOINJ - HW C - Prototype Development	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		0.000		2.125	Oct 2017	-		2.125	Continuing	Continuing	0.000
AAS - SW C - Resubmission of NDA	C/CPIF	Meridian Medical Technologies Inc. : Columbia, MD	0.830	0.800	Jun 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
AAS - HW S - Alternative Autoinjector	C/CPFF	Battelle Memorial Institute : Columbus, OH	8.154	1.000	Jul 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - HW S - cGMP Manufacturing and Process Validation	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	14.643	7.400	Feb 2016	6.883	Jan 2017	7.055	Jan 2018	-		7.055	Continuing	Continuing	0.000
BSCAV-P - SW S - Engineering and Scale up Manufacturing	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.600	8.131	Mar 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - HW S - Evaluation of Alternative Source Material	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	5.200	7.900	Aug 2016	3.750	Dec 2016	3.844	Jan 2018	-		3.844	Continuing	Continuing	0.000
INATS - HW C - Pilot Scale Development of Drug Product	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	2.842	Jan 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
INATS - HW C - cGMP Efforts and Manufacture of Material	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	2.665	Apr 2016	4.980	Dec 2016	2.163	Dec 2017	-		2.163	Continuing	Continuing	0.000
INATS - HW C - Reformulation & Bridging Studies	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		0.000		5.135	Oct 2017	-		5.135	Continuing	Continuing	0.000
		Subtotal	29.427	30.738		18.453		23.322		-		23.322	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AUTOINJ - TD/D S - Autoinjector - FDA NDA coordination	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		0.190	Jun 2017	0.363	Oct 2017	-		0.363	Continuing	Continuing	0.000
INATS - ILS S - Regulatory Support	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.429	0.235	Jun 2016	0.260	Jun 2017	0.275	Jun 2018	-		0.275	Continuing	Continuing	0.000
		Subtotal	0.429	0.235		0.450		0.638		-		0.638	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AUTOINJ - DTE S - Autoinjector - Stability Testing	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		1.760	Jun 2017	2.215	Oct 2017	-		2.215	Continuing	Continuing	0.000
AUTOINJ - DTE C - Human Factors Testing	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		0.000		1.200	Oct 2017	-		1.200	Continuing	Continuing	0.000
BSCAV-P - DTE C - Particle Characterization in drug product	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	7.100	Jan 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - DTE C - Assay development for nonclinical toxicity and phase 1 studies	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	7.450	Jul 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - OTHT S - Stability Testing	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	4.584	4.058	Jan 2016	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - OTHT S - Phase 1 PK and Safety Studies	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	0.000	Mar 2016	2.310	Jan 2017	2.326	Jan 2018	-		2.326	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSCAV-P - OTHT S - Nonclinical Studies to evaluate drug-drug interactions	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	0.000		1.870	Jan 2017	1.924	Jan 2018	-		1.924	Continuing	Continuing	0.000
BSCAV-P - OTHT S - Pilot Nonclinical PK Efficacy Studies	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	7.663	Dec 2015	5.340	Jan 2017	4.152	Jan 2018	-		4.152	Continuing	Continuing	0.000
INATS - DTE S - Nonclinical Studies for PB	C/CPFF	Battelle Memorial Institute : Columbus, OH	3.894	0.706	Jan 2016	1.140	Jan 2017	0.000		-		0.000	Continuing	Continuing	0.000
INATS - DTE S - Centrally Acting Nonclinical Studies - Oxime / 2-PAM	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.650	1.095	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
INATS - DTE S - INATS - Centrally Acting Phase 1 Trial	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.000		2.240	Dec 2016	4.797	Dec 2017	-		4.797	Continuing	Continuing	0.000
		Subtotal	9.128	28.072		14.660		16.614		-		16.614	-	-	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AUTOINJ - PM/MS S - Autoinjector - Program Support	PO	JPM Chem/Bio Medical Systems (JPM CBMS) : Fort Detrick, MD	0.000	0.000		0.358	Dec 2016	0.938	Dec 2017	-		0.938	Continuing	Continuing	0.000
BSCAV-P - PM/MS S - MCS Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	2.848	1.438	Mar 2016	1.010	Mar 2017	1.031	Mar 2018	-		1.031	Continuing	Continuing	0.000
BSCAV-P - PM/MS S - Product Management Support	C/FFP	Various : Various	3.052	1.270	Jun 2016	1.190	Jun 2017	1.210	Jun 2018	-		1.210	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSCAV-P - PM/MS S - Product Management Support #2	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	1.036	0.360	Mar 2016	0.240	Mar 2017	0.240	Mar 2018	-		0.240	Continuing	Continuing	0.000
BSCAV-P - PM/MS C - Program Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	2.725	1.500	Mar 2016	1.625	Mar 2017	1.665	Mar 2018	-		1.665	Continuing	Continuing	0.000
INATS - PM/MS S - Product Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.300	0.160	Dec 2015	0.165	Dec 2016	0.170	Dec 2017	-		0.170	Continuing	Continuing	0.000
INATS - PM/MS S - Program Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.470	0.480	Mar 2016	0.528	Mar 2017	0.630	Mar 2017	-		0.630	Continuing	Continuing	0.000
INATS - PM/MS S - Product Management Support #2	C/FFP	Various : Various	0.465	0.520	Jun 2016	0.825	Jun 2017	0.930	Jun 2017	-		0.930	Continuing	Continuing	0.000
		Subtotal	10.896	5.728		5.941		6.814		-		6.814	-	-	0.000

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	49.880	64.773		39.504		47.388		-		47.388	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*

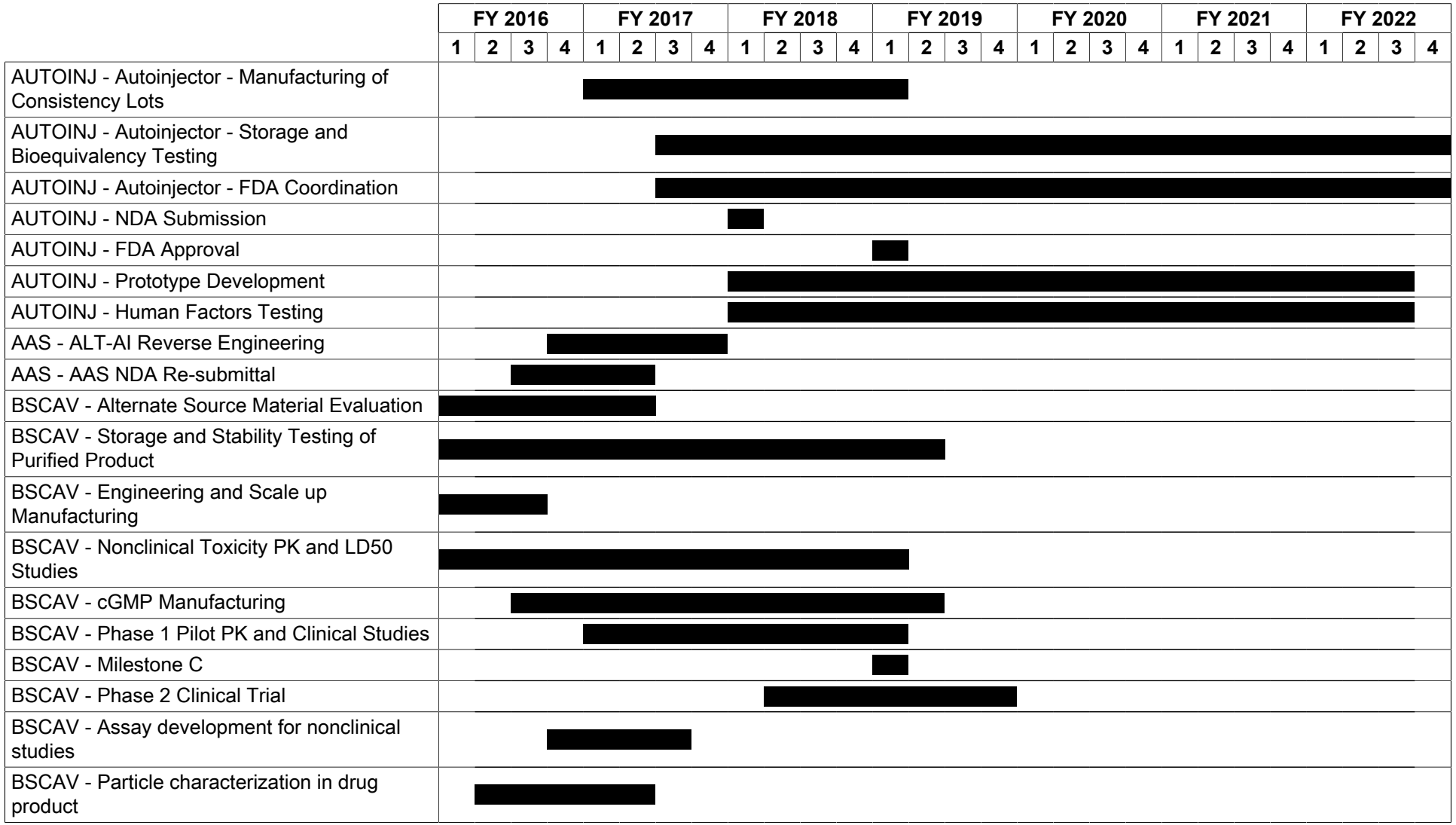

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*

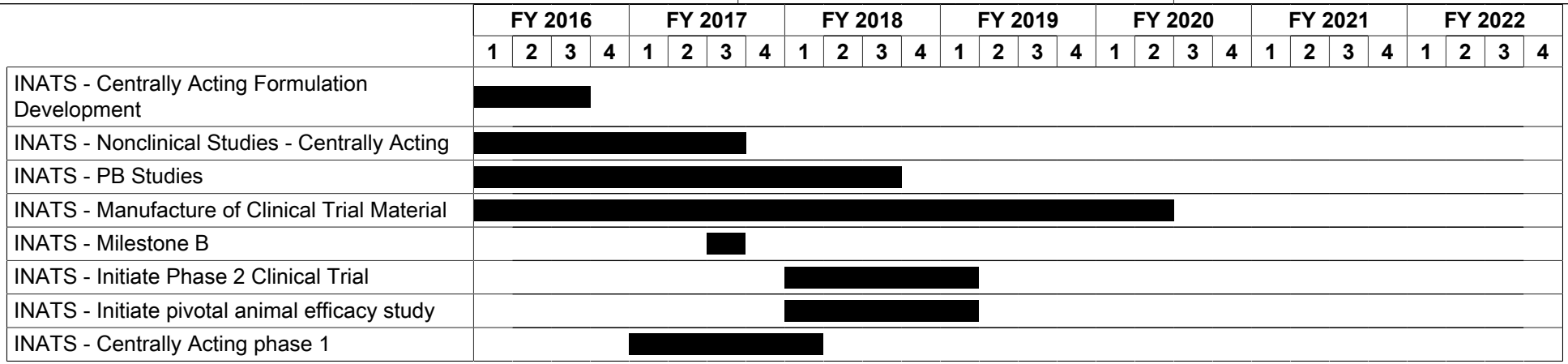

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AUTOINJ - Autoinjector - Manufacturing of Consistency Lots	1	2017	1	2019
AUTOINJ - Autoinjector - Storage and Bioequivalency Testing	3	2017	4	2022
AUTOINJ - Autoinjector - FDA Coordination	3	2017	4	2022
AUTOINJ - NDA Submission	1	2018	1	2018
AUTOINJ - FDA Approval	1	2019	1	2019
AUTOINJ - Prototype Development	1	2018	3	2022
AUTOINJ - Human Factors Testing	1	2018	3	2022
AAS - ALT-AI Reverse Engineering	4	2016	4	2017
AAS - AAS NDA Re-submittal	3	2016	2	2017
BSCAV - Alternate Source Material Evaluation	1	2016	2	2017
BSCAV - Storage and Stability Testing of Purified Product	1	2016	2	2019
BSCAV - Engineering and Scale up Manufacturing	1	2016	3	2016
BSCAV - Nonclinical Toxicity PK and LD50 Studies	1	2016	1	2019
BSCAV - cGMP Manufacturing	3	2016	2	2019
BSCAV - Phase 1 Pilot PK and Clinical Studies	1	2017	1	2019
BSCAV - Milestone C	1	2019	1	2019
BSCAV - Phase 2 Clinical Trial	2	2018	4	2019
BSCAV - Assay development for nonclinical studies	4	2016	3	2017
BSCAV - Particle characterization in drug product	2	2016	2	2017
INATS - Centrally Acting Formulation Development	1	2016	3	2016
INATS - Nonclinical Studies - Centrally Acting	1	2016	3	2017
INATS - PB Studies	1	2016	3	2018

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
INATS - Manufacture of Clinical Trial Material	1	2016	2	2020
INATS - Milestone B	3	2017	3	2017
INATS - Initiate Phase 2 Clinical Trial	1	2018	1	2019
INATS - Initiate pivotal animal efficacy study	1	2018	1	2019
INATS - Centrally Acting phase 1	1	2017	1	2018

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program			Date: May 2017
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) TE5 / *TEST & EVALUATION (EMD)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
TE5: *TEST & EVALUATION (EMD)*	-	6.021	6.119	9.548	-	9.548	9.056	7.788	7.990	7.394	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This funding supports the Chemical Biological Defense Portfolio (CBDP) Test Equipment, Strategy, and Support (TESS) efforts TESS provides test infrastructure products for testing and evaluating chemical and biological defense systems throughout the life cycle acquisition process. TESS test infrastructure products are aligned in two groups to include: (1) Laboratory; (2) Field.

(1) 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 Dismounted Reconnaissance Sets Kits and Outfits (DR SKO), Next Generation Chemical Detector (NGCD), Joint Sensitive Equipment Wipes (JSEW), and Common Analytical Laboratory System (CALS). Future efforts will include the development of test methods and methodologies for additional classes of agents.

(2) Field: The products for this area are Test Grid, 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). The Safari Test Grid is an all-inclusive 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). It 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), and the Joint USFK Point and Integrated Threat Recognition (JUPITR) Enhanced Capability Demonstration (ECD).

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: 1) PD TESS - Dynamic Test Chamber (DTC)	0.150	-	-
FY 2016 Accomplishments:			

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *TEST & EVALUATION (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Initiated upgrade for Next Generation Chemical Detector (NGCD) use.			
Title: 2) PD TESS - Program Management ***FY 2016 Accomplishments:*** Continued Government Integrated Product Team program management, systems engineering and IPT support. ***FY 2018 Plans:*** Continue Government Integrated Product Team program management, systems engineering and IPT support.	1.216	-	2.700
Title: 3) PD TESS - Non-Traditional Agent Defense Test System (NTADTS) ***FY 2016 Accomplishments:*** Transitioned additional validated test subsystems to the CB T&E community. ***FY 2017 Plans:*** Continue to transition additional validated test subsystems to the CB T&E community. ***FY 2018 Plans:*** Continue to transition additional validated test subsystems to the CB T&E community.	1.600	2.260	2.800
Title: 4) PD TESS- Tech Refresh ***FY 2018 Plans:*** Initiate upgrades for obsolescence of referee equipment and fixtures.	-	-	1.948
Title: 5) PD TESS - Test Grid ***FY 2016 Accomplishments:*** Completed verification and validation of test capability upgrade IOC and transition of capabilities to CB T&E community. ***FY 2017 Plans:*** Perform software maintenance upgrades. Provide support management reach back. Support refresher training on system operation.	3.055	1.100	-
Title: 6) PD TESS - Joint Ambient Breeze Tunnel (JABT) ***FY 2017 Plans:*** Conduct V&V Testing on upgrades and transition. ***FY 2018 Plans:*** Complete upgrades and transition.	-	0.715	0.900
Title: 7) PD TESS - Active Standoff Chamber - (ASC)	-	0.715	1.200

Exhibit R-2A, RDT&E Project Justification: FY 2018 Chemical and Biological Defense Program		Date: May 2017
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *TEST & EVALUATION (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
FY 2017 Plans: Conduct V&V Testing on upgrades and transition. ***FY 2018 Plans:*** Complete upgrades and transition.			
Title: 8) PD TESS - Safari Test Grid ***FY 2017 Plans:*** Conduct V&V Testing. Integrate sensors. Transition MTI to DPG for network dissemination and referee devices.	-	1.329	-
Accomplishments/Planned Programs Subtotals	6.021	6.119	9.548

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• TE7: *TEST & EVALUATION (OP SYS DEV)*	2.681	2.594	6.605	-	6.605	6.318	5.416	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.

E. Performance Metrics

N/A