Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Chemical and Biological Defense Program											Date: February 2016	
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 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	-	330.326	282.147	266.231	-	266.231	412.287	341.133	305.710	261.715	Continuing	Continuing
CA5: *CONTAMINATION AVOIDANCE (EMD)*	-	48.333	56.104	50.203	-	50.203	127.558	62.229	50.951	11.200	Continuing	Continuing
CM5: *HOMELAND DEFENSE (EMD)*	-	30.975	7.192	11.224	-	11.224	5.323	2.536	0.000	0.000	0	57.250
CO5: *COLLECTIVE PROTECTION (EMD)*	-	7.482	7.361	4.224	-	4.224	5.652	6.034	4.513	5.000	Continuing	Continuing
DE5: *DECONTAMINATION SYSTEMS (EMD)*	-	9.031	15.244	9.984	-	9.984	16.164	10.416	14.209	17.681	Continuing	Continuing
IP5: *INDIVIDUAL PROTECTION (EMD)*	-	16.961	19.439	11.427	-	11.427	11.206	11.610	3.799	6.419	Continuing	Continuing
IS5: *INFORMATION SYSTEMS (EMD)*	-	12.277	19.960	27.323	-	27.323	24.676	25.853	26.236	28.806	Continuing	Continuing
MB5: *MEDICAL BIOLOGICAL DEFENSE (EMD)*	-	169.400	107.883	106.223	-	106.223	170.667	190.756	188.537	181.318	Continuing	Continuing
MC5: *MEDICAL CHEMICAL DEFENSE (EMD)*	-	25.966	42.911	39.504	-	39.504	44.656	25.358	11.155	4.855	Continuing	Continuing
TE5: *TEST & EVALUATION (EMD)*	-	9.901	6.053	6.119	-	6.119	6.385	6.341	6.310	6.436	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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Chemical and Biological Defense Program	Date: February 2016
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)*

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: PB 2017 Chemical and Biological Defense Program	Date: February 2016
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)*

B. Program Change Summary ($ in Millions)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	345.883	303.647	363.435	-	363.435
Current President's Budget	330.326	282.147	266.231	-	266.231
Total Adjustments	-15.557	-21.500	-97.204	-	-97.204
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	0.000	-21.500			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	-21.771	-			
• SBIR/STTR Transfer	-4.782	-			
• Other Adjustments	10.996	-	-97.204	-	-97.204

Change Summary Explanation

Funding: FY17 - Adjustments due to underexecution and fact-of-life changes ($37M). Other Departmental adjustments ($12M). Combined efforts of Emerging Infectious Diseases Therapeutic program and the Hemorrhagic Fever Virus program to develop and deliver FDA approved antiviral countermeasures ($39M).

Schedule: N/A

Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program											Date: February 2016	
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 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
CA5: *CONTAMINATION AVOIDANCE (EMD)*	-	48.333	56.104	50.203	-	50.203	127.558	62.229	50.951	11.200	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 Biological Tactical Detection System (JBTDS); (3) Next Generation Chemical Detector (NGCD); (4) Non-Traditional Agent (NTA) Defense Support; and (5) the Global Biosurveillance Technology Initiatives (GBTI).

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 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.

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 develop a tactical common identifier using technology from the Next Generation Diagnostic System. Identifier testing will take place during EMD to evaluate technologies against requirements and find the best solution(s) for the warfighter. 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 develop 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 unto Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV).

The Next Generation Chemical Detector (NGCD) is several detection systems for multi phase of matter sampling, location of liquid and solids on surfaces, and vapor and aerosol monitoring. 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. 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. These sensors will improve detection, consequence management and reconnaissance, and weapons of mass

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

destruction (WMD) interdiction capabilities. The scope of the project includes detection of chemical a few feet away from the detector as well as the sampling point of the detector.

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, Advanced Technology Demonstrations (ATD), 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.

The Global Biosurveillance Technology Initiatives (GBTI) is developing a globally-distributed, fully integrated and networked, state-of-the-art analytical capability for biological threats that will enable the compression of the discovery-to-decision timeframe and provide awareness and understanding of the baseline biological threat footprint. For the first time, capabilities such as advanced characterization and genomic sequencing are being located in forward locations, bringing faster pathogen detection, improved multiplex assays and medical countermeasures to the Warfighter.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: 1) EMBD ***FY 2017 Plans:*** Provide Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support for USN variant.	-	-	2.205
Title: 2) EMBD ***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.	-	-	1.123
Title: 3) EMBD ***FY 2017 Plans:*** Initiate development of Logistics Management Information (LMI) for USN variant.	-	-	0.671
Title: 4) JBTDS ***FY 2015 Accomplishments:***	5.937	9.715	3.599

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Completed Milestone B and initiated the Engineering and Manufacturing Development (EMD) Contract (including 48 test articles at $70,342 each, 1866 consumables at $134 each). ***FY 2016 Plans:*** Continue the EMD Contract (including 62 test articles at approximately $70,000 each). ***FY 2017 Plans:*** Complete the EMD Contract (including 45 test articles at $70,342 each, 1050 consumables at $134 each).			
Title: 5) JBTDS ***FY 2015 Accomplishments:*** Initiated development and design of a tactical identifier using the BioFire Film Array identification system from Next Generation Diagnostic System (NGDS) Increment 1 program. ***FY 2016 Plans:*** Continue 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 and complete development and design of a tactical identifier using the BioFire Film Array identification system from NGDS Increment 1 program.	7.118	7.189	5.300
Title: 6) JBTDS ***FY 2015 Accomplishments:*** Continued Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, testing and evaluation, scheduling, and technical support. ***FY 2016 Plans:*** Continue 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.	9.723	9.794	6.032
Title: 7) JBTDS ***FY 2015 Accomplishments:***	1.520	3.080	2.140

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continued combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) during Engineering and Manufacturing Development (EMD) Phase. ***FY 2016 Plans:*** Continue combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups)during Engineering and Manufacturing Development Phase. ***FY 2017 Plans:*** Continue and complete combat developer, test community and Service representation (i.e. IPT and working groups) during EMD Phase.			
Title: 8) JBTDS ***FY 2015 Accomplishments:*** Initiated developmental planning and testing to include live agent, environmental false alarm, outdoor interferent and military standard testing. ***FY 2016 Plans:*** Continue 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.	0.499	2.651	4.218
Title: 9) JBTDS ***FY 2015 Accomplishments:*** Continued sensor calibration standards effort for routine maintenance, metrology and calibration capability for detection systems. ***FY 2016 Plans:*** Continue sensor calibration standards effort for routine maintenance, metrology and calibration capability for detection systems.	1.200	0.600	-
Title: 10) JBTDS ***FY 2016 Plans:*** Initiate reliability growth model for EMD phase testing. ***FY 2017 Plans:*** Complete reliability growth model for EMD phase testing.	-	0.043	0.075
Title: 11) JBTDS	0.240	0.100	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Continued the verification and validation of military utility model. ***FY 2016 Plans:*** Complete the verification and validation of military utility model.			
Title: 12) JBTDS ***FY 2016 Plans:*** Initiate combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) for USN variant.	-	0.983	-
Title: 13) JBTDS ***FY 2016 Plans:*** Initiate developmental testing to include live agent, environmental false alarm, shipboard operations, outdoor interferent and military standard testing for USN variant.	-	1.031	-
Title: 14) JBTDS ***FY 2016 Plans:*** Initiate the Contract action (including test articles) for USN variant.	-	4.972	-
Title: 15) JBTDS ***FY 2016 Plans:*** Provide Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support for USN Variant.	-	2.814	-
Title: 16) JBTDS ***FY 2016 Plans:*** Initiate and complete testing of a surface sampler solution to meet the JBTDS requirements.	-	0.350	-
Title: 17) JBTDS ***FY 2015 Accomplishments:*** Initiate Rapid Agent Aerosol Detector (RAAD) software development and presumptive identification development in support of the JBTDS platform requirement.	1.348	-	-
Title: 18) JBTDS ***FY 2016 Plans:***	-	0.500	2.670

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Initiate engineering redesign study on the JBTDS system to meet Nuclear Biological Reconnaissance Vehicle (NBCRV) platform requirements. ***FY 2017 Plans:*** Continue engineering redesign study on the JBTDS system to meet NBCRV platform requirements.			
Title: 19) JBTDS ***FY 2015 Accomplishments:*** Conducted development of three lightweight, handheld bio-identification systems with screening assays to meet the needs of Special Purpose Units (SPUs).	6.188	-	-
Title: 20) JBTDS ***FY 2015 Accomplishments:*** Conducted engineering support of three lightweight, handheld bio-identification systems with screening assays to meet the needs of SPUs.	0.840	-	-
Title: 21) JBTDS ***FY 2015 Accomplishments:*** Conducted Government strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, testing and evaluation, scheduling, and technical support for SPUs.	0.404	-	-
Title: 22) Next Generation Chemical Detector (NGCD) ***FY 2015 Accomplishments:*** Purchased mockups for acquisition acceleration. Awarded contract. ***FY 2016 Plans:*** Award contract ***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).	0.453	1.482	13.132
Title: 23) Next Generation Chemical Detector (NGCD) ***FY 2015 Accomplishments:*** Initiated and completed acquisition acceleration test support.	0.170	-	-
Title: 24) Next Generation Chemical Detector (NGCD)	1.625	0.462	3.695

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Continued Government Program Management and systems engineering support ***FY 2016 Plans:*** Continue 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.			
Title: 25) NTA Defense - Threat Understanding/Military Utility and Supportability ***FY 2015 Accomplishments:*** Expanded analysis of threat understanding to additional threat classes and provided information to combat developers to ascertain technology and capability gaps in multiple mission areas. Leveraged previous work to fully characterize outputs of threat and operational phenomenology. Centralized the analysis outputs and provide enhanced understanding of CB threat presentation. Initiated planning of a front end analysis to support future Multi-Threat Multi-Commodity (MTMC) ATDs. ***FY 2016 Plans:*** Initiate planning for expanded threat space characterization. Continue analysis of threat understanding for further emerging classes to enable refinement of technology and capability gaps identified during mission analysis. Utilize mission analysis outputs to develop initial Military Utility Assessments (MUAs) and Table Top Exercises (TTXs) that inform requirement development.	2.059	1.904	-
Title: 26) NTA Defense - Systems Engineering ***FY 2015 Accomplishments:*** Validated baseline model for use in identifying system performance trade space prior to technology evaluation, system design or final requirements definition. Enhanced capability through expanded mission space to support detector program trade-off analyses. ***FY 2016 Plans:*** Execute mission modeling to identify enterprise (multi-commodity) NTA solutions to support accelerated and enduring materiel solution development.	0.300	1.504	-
Title: 27) NTA Defense - Test and Evaluation ***FY 2015 Accomplishments:*** Initiated planning for Military Utility Assessments (MUAs) and Table Top Exercises (TTXs) to inform execution of equipment field trials. Continued to utilize advanced and emerging threat test bed facilities and methodologies to assess component technologies	6.689	2.123	1.174

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
(detectors, decontaminants, individual protection ensembles, etc.) for the enterprise to inform technology development strategies and support competitive prototypes and technology insertions in acquisition options and efforts (PORs, ATDs, and Accelerated Acquisition) against advanced and emerging CB threats. Supported assessments of fielded capabilities and emerging technologies against new CB threats and assists risk assessments. ***FY 2016 Plans:*** Continue to utilize emerging threat test bed for system/component technology evaluation against emerging and unforeseen threats, preparing inputs into Systems Engineering processes that conduct solution set analyses. ***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.			
Title: 28) NTA Defense - Technology Assessments ***FY 2015 Accomplishments:*** Completed assessments and utilized fielded equipment characterization to identify potential NTA capabilities or respond to emerging requirements.	1.268	-	-
Title: 29) NTA Defense - Strategic Coordination (NTA Library) ***FY 2015 Accomplishments:*** Utilized DoD/CBDP guidance to synchronize acquisition strategies across interagency and international advanced and emerging threat initiatives. Expanded capabilities of the NTA Library to accommodate emerging information and upgrade for use by whole of Government. Initiated concept of Integrated Acquisition Portal (IAP) to provide critical enabling data to Systems Engineering for trade off analyses. ***FY 2016 Plans:*** Continue to synchronize acquisition strategies across interagency and international NTA initiatives according to DoD/CBDP guidance. Continue to update and maintain NTA Library. Initiate transition to effects manual.	0.752	0.892	-
Title: 30) Global Biosurveillance Technology Initiative (GBTI) ***FY 2016 Plans:*** Continue ongoing efforts to procure additional assays for biological warfare agents and emerging infectious diseases to support the GBTI labs previously funded under the Next Generation Diagnostic System (NGDS) within Project MB - Medical Biological Defense. ***FY 2017 Plans:***	-	1.277	0.834

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue ongoing 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.			
Title: 31) GBTI ***FY 2016 Plans:*** Continue ongoing efforts for bioinformatics integration for Global Biosurveillance Technology Initiative (GBTI) previously funded under the Next Generation Diagnostic System (NGDS) within Project MB - Medical Biological Defense. ***FY 2017 Plans:*** Continue ongoing 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.	-	0.688	0.667
Title: 32) GBTI ***FY 2016 Plans:*** Continue ongoing efforts for three open architecture analytical platforms to be fielded and technology insertion of additional capabilities in support the GBTI labs previously funded under the Next Generation Diagnostic System (NGDS) within Project MB - Medical Biological Defense. ***FY 2017 Plans:*** Continue ongoing 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

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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.			
Title: 33) SBIR/STTR ***FY 2016 Plans:*** SBIR/STTR - FY16 - Small Business Innovative Research.	-	1.011	-
Accomplishments/Planned Programs Subtotals	48.333	56.104	50.203

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• CA4: *CONTAMINATION AVOIDANCE (ACD&P)*	39.930	60.192	42.308	-	42.308	8.238	9.679	12.802	17.381	Continuing	Continuing
• JF0100: *JOINT CHEMICAL AGENT DETECTOR (JCAD)*	36.924	24.834	7.547	-	7.547	0.000	0.000	0.000	0.000	0	69.305
• JF0104: *NEXT GEN CHEMICAL DETECTOR (NGCD)*	0.000	1.000	2.378	-	2.378	1.000	17.208	17.204	44.155	Continuing	Continuing
• MC0100: *JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)*	3.600	3.600	1.956	-	1.956	0.000	0.000	10.000	35.000	Continuing	Continuing
• MC0101: *CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)*	132.121	108.704	90.094	-	90.094	80.633	94.074	60.425	41.977	Continuing	Continuing
• MX0001: *JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)*	0.000	0.000	0.000	-	0.000	5.000	61.559	108.751	98.248	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. The EMBD program will coordinate with the JBTDS, Next Generation Diagnostic System (NGDS) and Common Analytical Laboratory System (CALS) to share information and leverage potential collector and identification technologies. A Sole Source contract is anticipated to be necessary to obtain the selected technology and meet expected fielding schedule.

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. 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)

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. 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. Full and Open competition will be used to award Engineering and Manufacturing Development (EMD) contracts with production options for each capability at Milestone B.

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 full and open competition contract actions that enhance the CBDP's portfolio and mission and feed directly into Programs of Record, Advanced Technology Demonstrations, and Acquisition Programs. NTA Defense efforts: (1) evaluate COTS and GOTS technologies and systems, (2) conduct demonstrations and experiments, (3) integrates 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) provides coordination of DoD, interagency, international NTA projects. 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.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

GLOBAL BIO TECH INITIATIVE (GBTI)

Global Biosurveillance Technology Initiative (GBTI) will use an evolutionary acquisition strategy. Under this approach capability is developed and fielded based on current technologies and user needs. Technology insertions will provide state-of-the art analytical capability for biological threats. GBTI will make maximum use of Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf (GOTS) technology.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) CA5 / *CONTAMINATION AVOIDANCE (EMD)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBTDS - JBTDS - HW S - EMD Contract Award	C/CPIF	Chemring Detection Systems : Inc., Charlotte, NC	0.000	5.937	Mar 2015	9.714	Dec 2015	3.599		-		3.599	Continuing	Continuing	0.000
JBTDS - JBTDS - HW C - Tactical Common Identifier	C/CPFF	BioFire Dx : Salt Lake City, UT	0.000	7.118	Mar 2015	7.189	Mar 2016	5.300	Mar 2017	-		5.300	Continuing	Continuing	0.000
JBTDS - HW C - USN Variant Contract Action	Various	TBD : TBD	0.000	0.000		4.972	Jun 2016	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - JBTDS - HW C - RAAD Development	FFRDC	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	0.000	1.348	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - JBTDS - HW C - NBCRV Platform Integration	MIPR	TBD : TBD	0.000	0.000		0.500	Mar 2016	2.670	Mar 2017	-		2.670	Continuing	Continuing	0.000
JBTDS - JBTDS - HW C - SPU Candidate 1	SS/FP	Biomeme : Philadelphia, PA	0.000	1.660	Sep 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - JBTDS - HW C - SPU Candidate 2	SS/CPFF	Ibis : Carlsbad, CA	0.000	2.533	Sep 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - JBTDS - HW C - SPU Candidate 3	SS/FFP	TBD : TBD	0.000	1.995	Sep 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - HW S - Prototype Build	C/CPFF	Smiths Detection : Edgewood, MD	0.000	0.453	Dec 2014	1.482	Dec 2015	13.132	Dec 2016	-		13.132	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Fielded Equipment Characterization	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.376	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Fielded Equipment Characterization #2	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.931	0.832	Jun 2015	0.525	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Systems Engineering	C/CPFF	Various : TBD	0.000	0.000		0.950	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Strategic Coordination	MIPR	Various : TBD	0.899	0.415	Jun 2015	0.400	Mar 2015	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NTA DEFENSE - HW S - Accelerated Acquisition	FFRDC	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	0.000	2.360	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Fielded Equipment Characterization #3	C/CPFF	Defense Logistics Agency : Philadelphia, PA	0.000	1.128	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Accelerated Acquisition #2	C/CPFF	Northrop Grumman Corp : Reston, VA	0.000	2.323	Sep 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Fielded Equipment Characterization #4	MIPR	Various : TBD	0.000	0.002	Jun 2015	0.000		0.645	Mar 2017	-		0.645	Continuing	Continuing	0.000
GBTI - HW S - GBTI - CRP Assay Optimization	MIPR	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		1.277	Dec 2015	1.000	Dec 2016	-		1.000	Continuing	Continuing	0.000
		Subtotal	1.830	28.104		27.385		26.346		-		26.346	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMBD - ES S - OTA/OGA Service Representation USN Variant	MIPR	Various : TBD	0.000	0.000		0.000		1.123	Mar 2017	-		1.123	Continuing	Continuing	0.000
EMBD - ILS S - OTA/OGA Service Representation USN Variant	MIPR	Various : TBD	0.000	0.000		0.000		0.671	Mar 2017	-		0.671	Continuing	Continuing	0.000
JBTDS - JBTDS - ES S - OTA/OGA Service Representation	MIPR	Various : TBD	1.553	1.520	Mar 2015	3.081	Mar 2016	2.140	Mar 2017	-		2.140	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) CA5 / *CONTAMINATION AVOIDANCE (EMD)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBTDS - JBTDS - ES S - Biosensor Calibration Effort	MIPR	Naval Research Lab (NRL) : Washington, DC	0.475	1.200	Mar 2015	0.600	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - ES S - OTA/ OGA Representation USN Variant	MIPR	Various : TBD	0.000	0.000		0.983	Jun 2016	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - JBTDS - ES C - SPU System Integration	C/CPFF	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	0.500	Sep 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - JBTDS - ES C - SPU Biological warfare support	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.340	Sep 2015	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	0.054	0.129	Mar 2015	0.054	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - TD/D C - Integrated Product Team (IPT) Support	MIPR	Various : TBD	1.108	0.900	Mar 2015	1.008	Mar 2016	0.124	Mar 2017	-		0.124	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		1.011	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	3.190	4.589		6.737		4.058		-		4.058	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBTDS - JBTDS - DTE S - Developmental Testing	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.499	Mar 2015	1.493	Mar 2016	4.118	Mar 2017	-		4.118	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) CA5 / *CONTAMINATION AVOIDANCE (EMD)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBTDS - JBTDS - DTE S - V&V of JBTDS Military Utility Model	FFRDC	Institute for Defense Analysis (IDA) : Alexandria, VA	0.224	0.240	Jun 2015	0.100	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - JBTDS - OTHT S - Reliability growth model	MIPR	United States Army Materiel Systems Analysis Activity(AMSAA) : Aberdeen Proving Ground, MD	0.000	0.000		0.043	Mar 2016	0.075	Mar 2017	-		0.075	Continuing	Continuing	0.000
JBTDS - JBTDS - DTE S - Development Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.000		0.858	Mar 2016	0.100	Jun 2017	-		0.100	Continuing	Continuing	0.000
JBTDS - JBTDS - DTE S - Development Testing #2	C/FP	Navy Operational Test and Eval Force (OPTEVFOR) : Norfolk, VA	0.000	0.000		0.300	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - DTE S - Development Testing USN Variant	MIPR	Various : TBD	0.000	0.000		1.031	Jun 2016	0.000		-		0.000	Continuing	Continuing	0.000
JBTDS - OTHT SB - Surface Sampling	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.350	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
NGCD - DTE S - Production Qualification Test	MIPR	Various : TBD	0.000	0.170	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Developmental Test and Evaluation	C/CPFF	Battelle Memorial Institute : Columbus, OH	1.728	0.000	Mar 2015	0.714	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Developmental Test and Evaluation #2	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.280	Mar 2015	0.536	Mar 2016	0.300	Dec 2016	-		0.300	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NTA DEFENSE - DTE S - Analysis and Evaluation	FFRDC	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	1.545	0.000	Mar 2015	0.950	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Analysis and Evaluation #2	C/CPFF	Defense Logistics Agency : Philadelphia, PA	0.000	0.919	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - DTE S - Analysis and Evaluation #3	MIPR	Various : TBD	0.000	0.049		0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	3.497	2.157		6.375		4.593		-		4.593	-	-	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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		0.000		2.205	Dec 2016	-		2.205	Continuing	Continuing	0.000
JBTDS - JBTDS - PM/ MS SB - Program Management and System Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	2.996	9.723	Dec 2014	9.794	Dec 2015	6.032	Dec 2016	-		6.032	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	0.000		2.814	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBTDS - JBTDS - PM/ MS SB - Program Management and System Engineering Support SPU	MIPR	Fort Belvoir Garrison : Fort Belvoir, VA	0.000	0.404	Sep 2015	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	0.000	1.625	Mar 2015	0.462	Dec 2015	3.695	Dec 2016	-		3.695	Continuing	Continuing	0.000
NTA DEFENSE - PM/MS S - Program Management Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	2.627	1.731	Mar 2015	0.910	Mar 2016	0.105	Dec 2016	-		0.105	Continuing	Continuing	0.000
GBTI - PM/MS C - GBTI - Laboratory Operational Demonstrations	MIPR	Various : TBD	0.000	0.000		0.939	Dec 2015	2.369	Dec 2016	-		2.369	Continuing	Continuing	0.000
GBTI - PM/MS C - Bioinformatics	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.688	Jan 2016	0.800	Dec 2016	-		0.800	Continuing	Continuing	0.000
		Subtotal	5.623	13.483		15.607		15.206		-		15.206	-	-	0.000

Remarks

Also includes the Government Integrated Product Development Team

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.140	48.333		56.104		50.203		-		50.203	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

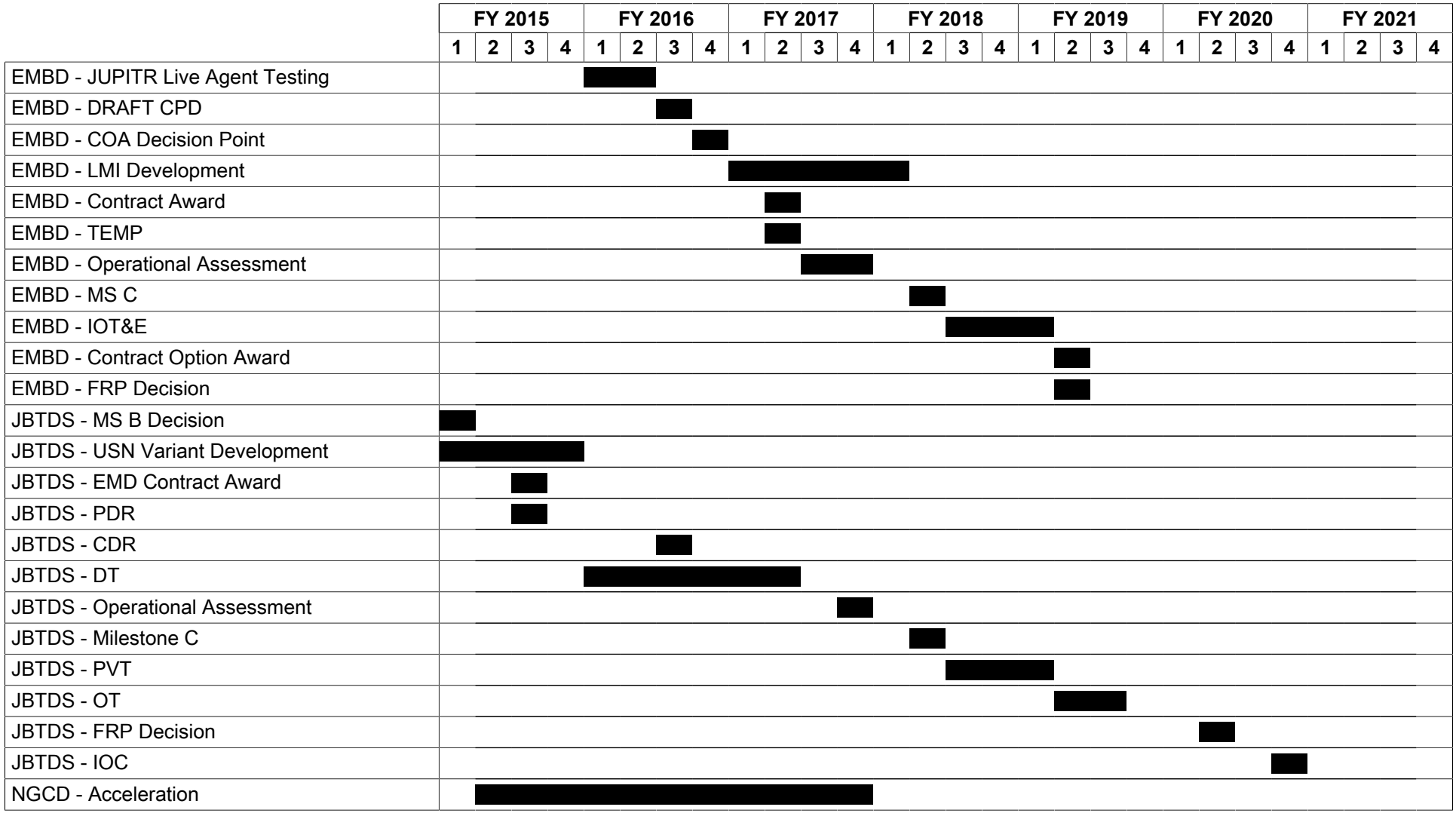

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

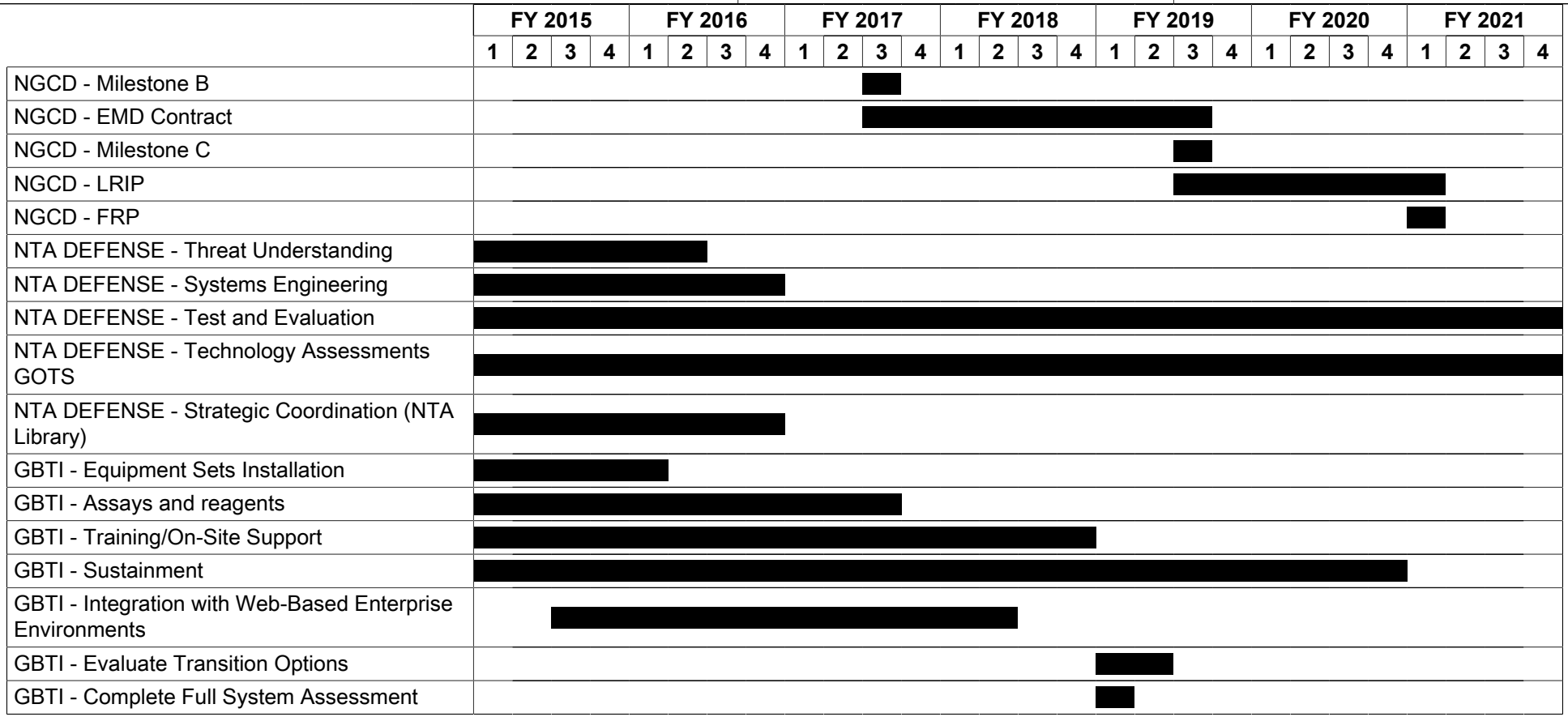

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CA5 / *CONTAMINATION AVOIDANCE (EMD)*

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
JBTDS - MS B Decision	1	2015	1	2015
JBTDS - USN Variant Development	1	2015	4	2015
JBTDS - EMD Contract Award	3	2015	3	2015
JBTDS - PDR	3	2015	3	2015
JBTDS - CDR	3	2016	3	2016
JBTDS - DT	1	2016	2	2017
JBTDS - Operational Assessment	4	2017	4	2017
JBTDS - Milestone C	2	2018	2	2018
JBTDS - PVT	3	2018	1	2019
JBTDS - OT	2	2019	3	2019
JBTDS - FRP Decision	2	2020	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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**
JBTDS - IOC	4	2020	4	2020
NGCD - Acceleration	2	2015	4	2017
NGCD - Milestone B	3	2017	3	2017
NGCD - EMD Contract	3	2017	3	2019
NGCD - Milestone C	3	2019	3	2019
NGCD - LRIP	3	2019	1	2021
NGCD - FRP	1	2021	1	2021
NTA DEFENSE - Threat Understanding	1	2015	2	2016
NTA DEFENSE - Systems Engineering	1	2015	4	2016
NTA DEFENSE - Test and Evaluation	1	2015	4	2021
NTA DEFENSE - Technology Assessments GOTS	1	2015	4	2021
NTA DEFENSE - Strategic Coordination (NTA Library)	1	2015	4	2016
GBTI - Equipment Sets Installation	1	2015	1	2016
GBTI - Assays and reagents	1	2015	3	2017
GBTI - Training/On-Site Support	1	2015	4	2018
GBTI - Sustainment	1	2015	4	2020
GBTI - Integration with Web-Based Enterprise Environments	3	2015	2	2018
GBTI - Evaluate Transition Options	1	2019	2	2019
GBTI - Complete Full System Assessment	1	2019	1	2019

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program			Date: February 2016
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) CM5 / *HOMELAND DEFENSE (EMD)*	

COST ($ in Millions)	Prior Years	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
CM5: *HOMELAND DEFENSE (EMD)*	-	30.975	7.192	11.224	-	11.224	5.323	2.536	0.000	0.000	0	57.250
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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 are three variants of CALS:
Field Confirmatory Integrated System (FC-IS) - NGB and Marine Corp
-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.

Theater Validation Integrated System (TV-IS) - Army
-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 two Family of Medium Tactical Vehicles (FMTV) and one trailer, to support the needed additional laboratory space.

Field Confirmatory Analytical Capability Sets (FC-ACS) - All Services including NGB
-A palletized / transportable equipment subsets that allows them to be loaded into transport cases and palletized. Enables the users to receive the Chemical, Biological and Radiological (CBR) subsystems that meet their specific mission profiles.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: 1) CALS - Subsystem Component Test and Evaluation	6.127	2.930	-
FY 2015 Accomplishments: Initiated EMD sub-system DT/OT.			
FY 2016 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Complete EMD sub-system DT/OT in preparation for Milestone C.			
Title: 2) CALS - System Level Prototype Variant Development and Manufacturing ***FY 2015 Accomplishments:*** Initiated the procurement of System Level variant prototypes ensuring integration and connectivity between modules as a general system layout. Purchased parts materials, fabrication, processing, subassembly, final assembly, reworking modification, and installation of parts and equipment, power plants, electronic equipment, other items (including Government-Furnished Equipment [GFE]), and the proving of such equipment and instruments for the specified system prototype (Module). ***FY 2017 Plans:*** Complete engineering changes and refurbishment of variant prototypes ensuring integration and connectivity between modules as a general system layout.	20.028	-	3.648
Title: 3) CALS - System Level Test and Evaluation ***FY 2016 Plans:*** Conduct 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.	-	0.150	3.182
Title: 4) CALS - System Integration Laboratory ***FY 2015 Accomplishments:*** Continued system integration laboratory analysis risk reduction and initiated activities to incorporate analysis of variant system configurations, capabilities, engineering controls. ***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 DIACAP requirements.	0.561	-	0.400
Title: 5) CALS - Safety Release Internal Review Board ***FY 2016 Plans:*** Initiate 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:***	-	0.000	0.182

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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 2015 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 2016 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 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.	4.259	3.800	3.812
Title: 7) SBIR/STTR ***FY 2016 Plans:*** SBIR/STTR - FY16 - Small Business Innovative Research.	-	0.312	-
Accomplishments/Planned Programs Subtotals	30.975	7.192	11.224

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• JS0004: *WMD - CIVIL SUPPORT TEAMS (WMD CST)*	13.292	5.069	0.000	-	0.000	0.000	0.000	0.000	0.000	0	18.361
• JS0005: *COMMON ANALYTICAL LABORATORY SYSTEM (CALS)*	0.000	0.000	23.100	-	23.100	50.801	70.139	70.898	66.417	Continuing	Continuing

Remarks

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) (FY18) 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: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - HW S Engineering and Planning	Various	Various : TBD	0.000	0.540	Mar 2015	0.000		0.000		-		0.000	0.000	0.540	0.000
CALS - HW S Prototype System Manufacturing	C/CPIF	Battelle Memorial Institute : Columbus, OH	4.568	20.028	Apr 2015	0.000		3.648	Jan 2017	-		3.648	0.000	28.244	0.000
CALS - HW S - NGDS Tactical Variant Alpha Prototype	C/CPFF	BioFire Dx : Salt Lake City, UT	0.000	1.501	Sep 2015	0.000		0.000		-		0.000	0.000	1.501	0.000
		Subtotal	4.568	22.069		0.000		3.648		-		3.648	0.000	30.285	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - ES S - CALS - Engineering Support System	C/FFP	Various : TBD	2.574	2.269	Mar 2015	2.930	Feb 2016	2.377	Feb 2017	-		2.377	0.000	10.150	0.000
CALS - ES S - System Integration Laboratory Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.375	0.561	Mar 2015	0.000		0.400	Jan 2017	-		0.400	0.000	1.336	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		0.000		0.182	Mar 2017	-		0.182	0.000	0.182	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.312	Dec 2016	0.000		-		0.000	0.000	0.312	0.000
		Subtotal	2.949	2.830		3.242		2.959		-		2.959	0.000	11.980	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CALS - DTE SB - Subsystem Prototype/ Subsystem DT/OT	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	4.626	Mar 2015	0.000		0.000		-		0.000	0.000	4.626	0.000
CALS - DTE S - System DT and LOGDEMO	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.000		0.000		3.182	Feb 2017	-		3.182	0.000	3.182	0.000
CALS - OTHT C - Operation Test Agencies	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	0.000		0.150	Jan 2016	0.000		-		0.000	0.000	0.150	0.000
		Subtotal	0.000	4.626		0.150		3.182		-		3.182	0.000	7.958	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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	1.203	1.450	Mar 2015	3.800	Mar 2016	1.435	Mar 2017	-		1.435	0.000	7.888	0.000
		Subtotal	1.203	1.450		3.800		1.435		-		1.435	0.000	7.888	0.000

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.720	30.975		7.192		11.224		-		11.224	0.000	58.111	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

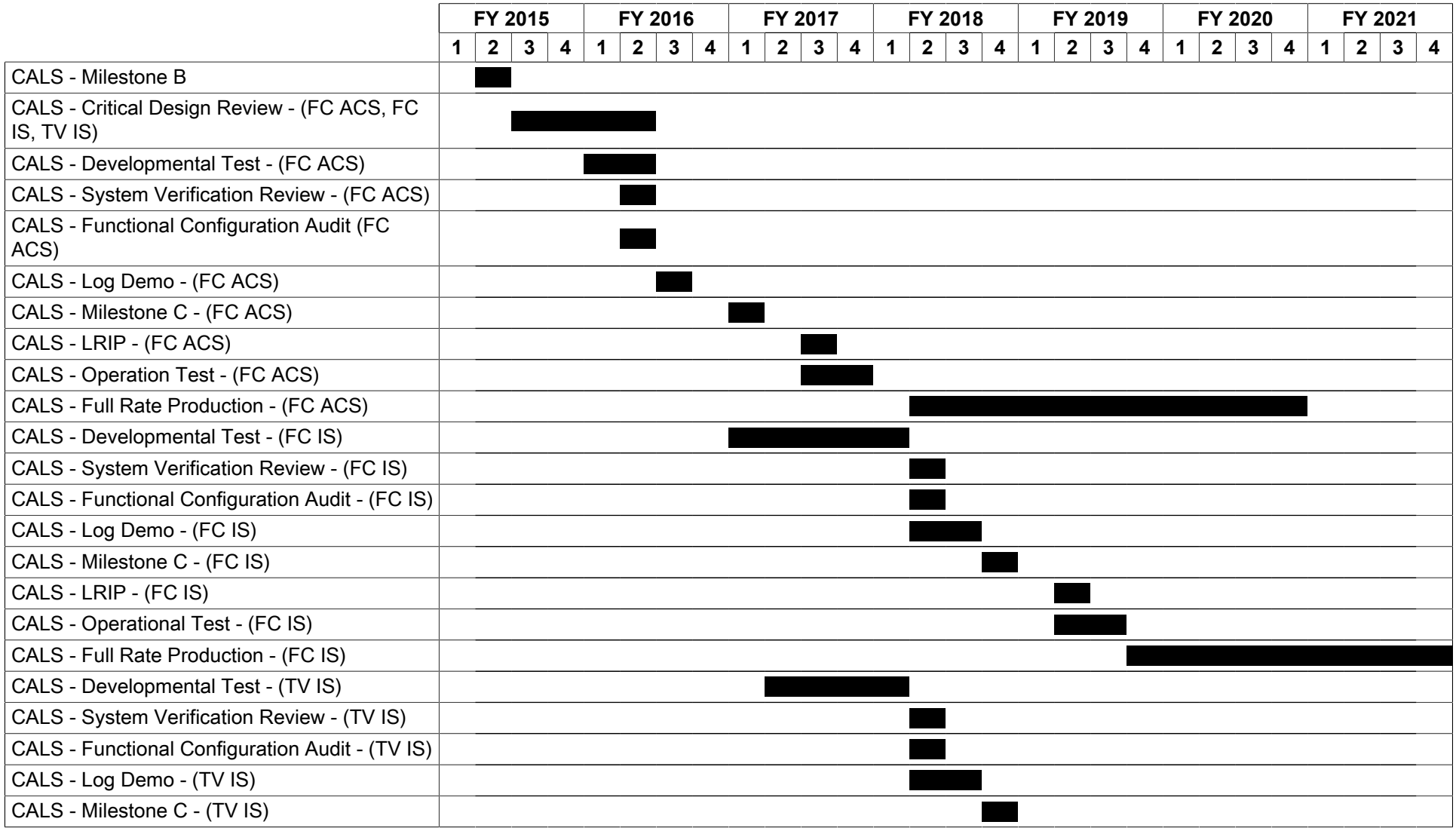

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

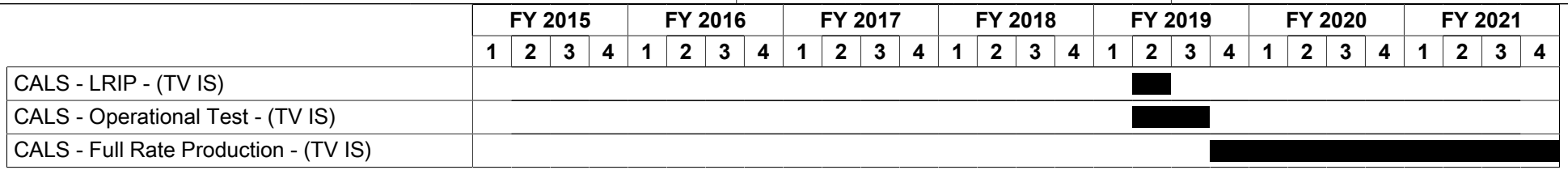

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CM5 / *HOMELAND DEFENSE (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CALS - Milestone B	2	2015	2	2015
CALS - Critical Design Review - (FC ACS, FC IS, TV IS)	3	2015	2	2016
CALS - Developmental Test - (FC ACS)	1	2016	2	2016
CALS - System Verification Review - (FC ACS)	2	2016	2	2016
CALS - Functional Configuration Audit (FC ACS)	2	2016	2	2016
CALS - Log Demo - (FC ACS)	3	2016	3	2016
CALS - Milestone C - (FC ACS)	1	2017	1	2017
CALS - LRIP - (FC ACS)	3	2017	3	2017
CALS - Operation Test - (FC ACS)	3	2017	4	2017
CALS - Full Rate Production - (FC ACS)	2	2018	4	2020
CALS - Developmental Test - (FC IS)	1	2017	1	2018
CALS - System Verification Review - (FC IS)	2	2018	2	2018
CALS - Functional Configuration Audit - (FC IS)	2	2018	2	2018
CALS - Log Demo - (FC IS)	2	2018	3	2018
CALS - Milestone C - (FC IS)	4	2018	4	2018
CALS - LRIP - (FC IS)	2	2019	2	2019
CALS - Operational Test - (FC IS)	2	2019	3	2019
CALS - Full Rate Production - (FC IS)	4	2019	4	2021
CALS - Developmental Test - (TV IS)	2	2017	1	2018
CALS - System Verification Review - (TV IS)	2	2018	2	2018
CALS - Functional Configuration Audit - (TV IS)	2	2018	2	2018
CALS - Log Demo - (TV IS)	2	2018	3	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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	2018	4	2018
CALS - LRIP - (TV IS)	2	2019	2	2019
CALS - Operational Test - (TV IS)	2	2019	3	2019
CALS - Full Rate Production - (TV IS)	4	2019	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
CO5: *COLLECTIVE PROTECTION (EMD)*	-	7.482	7.361	4.224	-	4.224	5.652	6.034	4.513	5.000	Continuing	Continuing
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 system included in this project is the Joint Expeditionary Collective Protection (JECP).

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 one includes standalone Collective protection systems, kits to provide existing host platforms and structures with CBRN protection. Phase two includes kits to provide other host platforms and structures that were not explicitly designed in phase one. 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 2015	FY 2016	FY 2017
Title: 1) JECP - Phase One Low Rate Initial Production (LRIP)	3.078	4.842	-
Description: Low rate initial production contract events.			
FY 2015 Accomplishments: Continued to develop level III drawing package, technical data package, technical manuals, training package and other required logistic support products.			
FY 2016 Plans: Finalize technical manuals, training package and all logistic support products in preparation for Full Rate Production (FRP)/ material release decision. Finalize level III drawing package. Conduct physical configuration audit and FRP manufacturing readiness assessment. Prepare for FRP.			
Title: 2) JECP - Phase One Developmental and Operational Testing	4.404	2.386	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015	FY 2016	FY 2017
Description: Logistics demonstration, developmental and operational test events. ***FY 2015 Accomplishments:*** Conducted a combined DT/ MOT&E I field chemical simulant challenge event on LRIP systems. Completed Government system level DT on LRIP systems. Conducted Logistics Demonstration. ***FY 2016 Plans:*** Conduct MOT&E II without a field chemical simulant challenge to test the operational capabilities of the system to support service specific missions.			
Title: 3) JECP - Phase Two System Development and Demonstration ***Description:*** Phase two 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. Effort will include prototyping, identifying and beginning changes to logistic support products and beginning update of the Govt owned Tech Data Package.	-	-	4.224
Title: 4) SBIR/STTR ***FY 2016 Plans:*** SBIR/STTR - FY16 - Small Business Innovative Research.	-	0.133	-
Accomplishments/Planned Programs Subtotals	7.482	7.361	4.224

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• JP1111: *JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)*	14.624	5.864	12.449	-	12.449	14.037	26.020	25.418	22.876	Continuing	Continuing

Remarks

D. Acquisition Strategy

JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *COLLECTIVE PROTECTION (EMD)*

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 two systems will be developed as engineering changes to phase one systems. A business case analysis (BCA) will be conducted to determine the best strategy for full rate production. Following a successful Full Rate Production (FRP) decision for phase one systems implement recommendations from the BCA. Phase two 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 systems.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *COLLECTIVE PROTECTION (EMD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JECP - HW S - Non-recurring Engineering	C/FFP	Leidos : Abingdon, MD	1.834	1.578	Nov 2014	1.049	Nov 2015	0.000		-		0.000	Continuing	Continuing	0.000
JECP - HW S - Phase Two System Prototype Development	MIPR	US Army Natick Soldier RD&E Center : Natick, MA	0.000	0.000		0.000		0.728	Nov 2016	-		0.728	Continuing	Continuing	0.000
JECP - HW S - Phase Two Systems Prototype Development	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.000	0.000		0.000		0.194	Nov 2016	-		0.194	Continuing	Continuing	0.000
		Subtotal	1.834	1.578		1.049		0.922		-		0.922	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JECP - ES S - Systems Engineering Oversight	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.681	0.340	Nov 2014	0.742	Dec 2015	0.318	Nov 2016	-		0.318	Continuing	Continuing	0.000
JECP - ES S - Systems Engineering IPT	MIPR	Various : TBD	6.100	0.502	Dec 2014	0.796	Dec 2015	0.422	Nov 2016	-		0.422	Continuing	Continuing	0.000
JECP - ILS S - Integrated Logistics IPT	MIPR	Various : TBD	3.819	0.708	Dec 2014	0.599	Dec 2015	1.207	Nov 2016	-		1.207	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.133	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	10.600	1.550		2.270		1.947		-		1.947	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *COLLECTIVE PROTECTION (EMD)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JECP - OTHT SB - Test & Evaluation IPT	MIPR	Various : TBD	6.286	0.525	Nov 2014	0.584	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
JECP - DTE S - Low Rate Initial Production Units Production Verification Testing	MIPR	Various : TBD	2.390	0.752	Dec 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JECP - OTE S - Low Rate Initial Production Multi-Service Operational Testing	MIPR	Various : TBD	0.403	1.931	Dec 2014	1.802	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
JECP - DTE S - Phase Two Systems Production Verification Testing	MIPR	Various : TBD	0.000	0.000		0.000		0.500	Nov 2016	-		0.500	Continuing	Continuing	0.000
		Subtotal	9.079	3.208		2.386		0.500		-		0.500	-	-	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JECP - PM/MS S - Program Management Support	MIPR	Various : TBD	8.324	1.146	Dec 2014	1.656	Dec 2015	0.855	Nov 2016	-		0.855	Continuing	Continuing	0.000
		Subtotal	8.324	1.146		1.656		0.855		-		0.855	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	29.837	7.482		7.361		4.224		-		4.224	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *COLLECTIVE PROTECTION (EMD)*

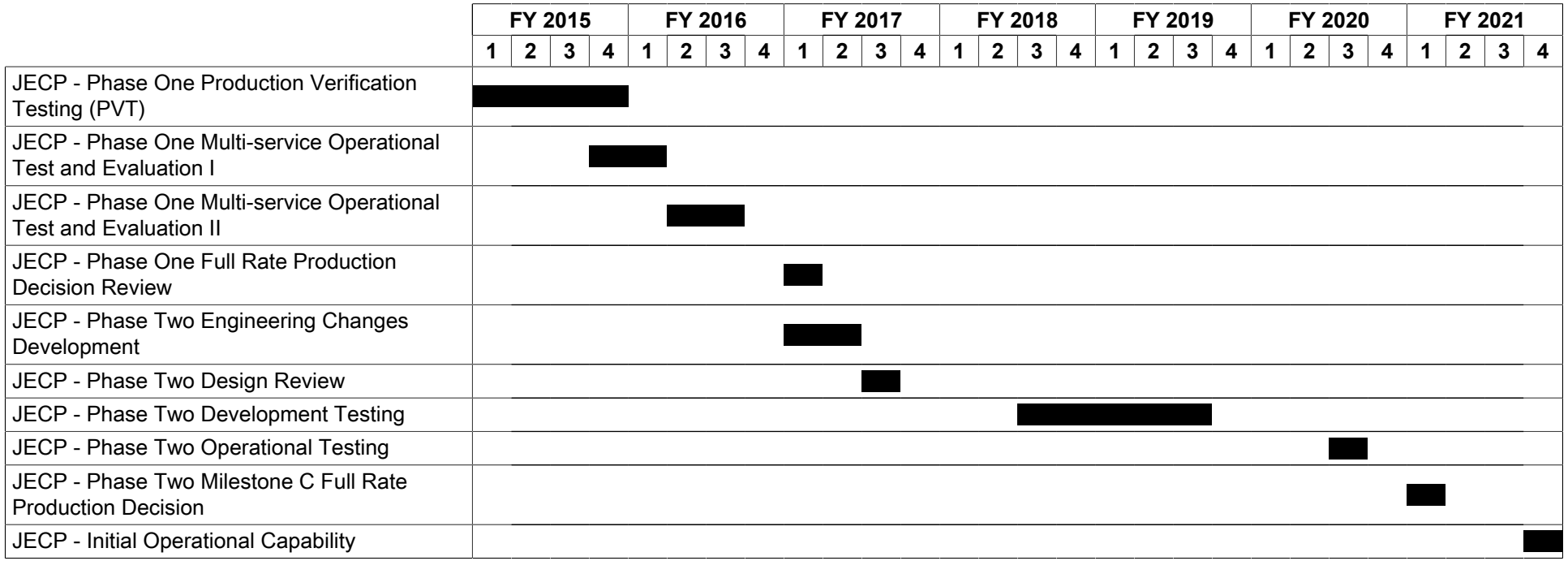

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** CO5 / *COLLECTIVE PROTECTION (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JECP - Phase One Production Verification Testing (PVT)	1	2015	4	2015
JECP - Phase One Multi-service Operational Test and Evaluation I	4	2015	1	2016
JECP - Phase One Multi-service Operational Test and Evaluation II	2	2016	3	2016
JECP - Phase One Full Rate Production Decision Review	1	2017	1	2017
JECP - Phase Two Engineering Changes Development	1	2017	2	2017
JECP - Phase Two Design Review	3	2017	3	2017
JECP - Phase Two Development Testing	3	2018	3	2019
JECP - Phase Two Operational Testing	3	2020	3	2020
JECP - Phase Two Milestone C Full Rate Production Decision	1	2021	1	2021
JECP - Initial Operational Capability	4	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program											Date: February 2016	
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 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
DE5: *DECONTAMINATION SYSTEMS (EMD)*	-	9.031	15.244	9.984	-	9.984	16.164	10.416	14.209	17.681	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 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 (a small-scale, mid-scale and large scale applicator). 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.

General Purpose Decontaminant (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.

The Joint Service Equipment Wipe (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 phases. Phase I will provide thorough biological decontamination of the interior and exterior of cargo aircraft. The JBADS Phase 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. Phase II will expand upon the Phase I capability set. Phase II will develop multiple decontaminants and modular designs to address various platforms and chemical agent decontamination.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: 1) MDAP Support JSF DECON SYSTEM	1.117	0.388	0.155
FY 2015 Accomplishments: Conducted Joint Strike Fighter (JSF) Decontamination System Integration Demonstration and began System modification and refurbishment in preparation for JSF Live Fire Test and Evaluation (LFT&E).			
FY 2016 Plans: Provide engineering and technical support to the JSF Program Office Live Fire Test and Evaluation (LFT&E).			
FY 2017 Plans: Complete engineering and technical support to the JSF Live Fire Test and Evaluation (LFT&E).			
Title: 2) CIDAS Development Test and Evaluation	0.869	5.324	4.591
FY 2015 Accomplishments: Conducted Human Factors Assessment. Achieved Milestone B and completed contract documentation. Conducted Manufacturing Readiness Assessment and Critical Design Review of the Large Scale Applicator. Built large scale applicators and initiated Developmental Testing (DT) planning and preparation of nerve indicators and applicators.			
FY 2016 Plans: Continue DT to include indication level, decontaminant compatibility, detector compatibility, equipment compatibility, IPE compatibility, electromagnetic interference, coverage area, natural environmental factors, packaging, and limited shelf life testing. Conduct an Operational Assessment and Technical Manual Validation.			
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.			
Title: 3) CIDAS LRIP Test and Evaluation	1.511	1.272	0.169
FY 2015 Accomplishments: Procured 410 test assets (120 small scale nerve and training indicator and applicator kits at $381 each; 60 mid scale nerve and training indicator kits at $922 each; and 230 large scale nerve and training indicator kits at $1,844 each) for $525,160 for			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015	FY 2016	FY 2017
Developmental Testing. Funded documentation, readiness assessments support, technical review support, training and test support, and sustainment cost reduction efforts. ***FY 2016 Plans:*** Purchase 800 CIDAS test assets (523 small scale applicators at approximately $381 each; 15 mid scale applicators at $2,885 each and 10 large scale applicators at $6,300 each; 126 mid scale indicator kits at approximately $922 each; and 126 large scale indicator kits at $1844) for DT; fund engineering support for engineering changes, training, test support and development of integrated product support deliverables. ***FY 2017 Plans:*** Procure 12 small scale nerve and training indicator and applicator kit test assets (at $381 each) for performance verification testing.			
Title: 4) GPD ***FY 2015 Accomplishments:*** Conducted chemical and biological efficacy, and detector compatibility Developmental Testing (DT). Prepared documentation in support of MS C/LRIP decision, Request for Proposal (RFP), and contract award. Completed Early User Evaluation (EUE). ***FY 2016 Plans:*** Initiate and complete Operational Testing (to include MOT&E reporting, Log Demo & First Article Test), conduct and complete second phase of Joint Independent Logistics Assessment (JILA).	3.686	2.391	-
Title: 5) JSEW ***FY 2015 Accomplishments:*** Conducted Developmental Testing to include Chemical Efficacy with traditional agents as well as advanced threats and Shelf Life; conducted Technical Design Review (TDR). Prepared documentation for Milestone C/Low Rate Initial Production (LRIP) (Life Cycle Management Plan (LCMP), Life Cycle Sustainment Plan (LCSP), etc.)	1.848	-	-
Title: 6) JBADS Phase One ***FY 2016 Plans:*** Award Contract for fabrication of Modified Aircraft Enclosure and Conduct Design Verification Testing. ***FY 2017 Plans:*** Conduct Production Qualification Testing on Low Rate Initial Production (LRIP) JBADS (Aircraft Enclosure integrated with Aircraft Decontamination Units) to include MIL-STD 810 and Human Factors Assessment.	-	4.839	2.069
Title: 7) JBADS Phase Two	-	0.731	3.000

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015	FY 2016	FY 2017
FY 2016 Plans: Initiate developmental testing (DT) to evaluate the efficacy of chemical agent hot air decontamination on several materials of interest. ***FY 2017 Plans:*** Award EMD contract for 1 JBADS (Aircraft Enclosure plus Aircraft Decontamination Units) Developmental Test asset (at $3 million) for Design Verification Testing for Phase Two.			
Title: 8) SBIR/STTR ***FY 2016 Plans:*** SBIR/STTR - FY16 - Small Business Innovative Research.	-	0.299	-
Accomplishments/Planned Programs Subtotals	9.031	15.244	9.984

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• JD0050: *DECONTAMINATION FAMILY OF SYSTEMS (DFoS)*	0.000	7.254	7.602	-	7.602	8.913	14.862	12.058	9.958	Continuing	Continuing
• JD0063: *CONTAMINATED HUMAN REMAINS POUCH (CHRP)*	0.500	1.542	0.000	-	0.000	0.000	0.000	0.000	0.000	0	2.042

Remarks

D. Acquisition Strategy

MAJOR DEFENSE ACQUISITION PROGRAM (MDAP)

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 mid and large scale applicators to provide an affordable solution to meet specific User requirements. Following MS B, used full and open competition to award a performance based firm fixed price contract with options for LRIP and FRP for nerve indicator and small scale applicator systems. Used full and open competition to award a performance based firm fixed price contract for engineering and manufacturing development and limited developmental testing of two blister technologies, with options for LRIP and FRP of preferred 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 (which includes CP I, CP II), 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 (which includes CP I, CP II), 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)

The JBADS program will be executed utilizing a phased approach. Phase One will deliver a biological agent decontamination capability for interior and exterior decontamination of cargo aircraft. For Phase One, the program will leverage the Joint Biological Agent Decontamination System Joint Capability Technology Demonstration (JCTD) and prior testing of candidate technologies to skip Milestone B and proceed directly to Milestone C, Low Rate Initial Production Decision. Modifications to the JCTD design will be made and technical testing will be conducted to support a Milestone C/Low Rate Initial Production Decision. A single, firm fixed price production contract with full and open competition will be awarded using a performance-based specification for the Aircraft Decontamination Units and a detailed

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

specification for the Aircraft Enclosure. Low Rate Initial Production/Operational test assets will be purchased using procurement funding due to the low density and estimated cost of the Phase One system. These assets will be retrofitted and fielded following a successful Full Rate Production decision.

JBADS Phase Two will expand the biological agent decontamination capability to other platforms such as tactical and rotary wing aircraft, as well as ground vehicles. In addition, Phase Two will provide chemical agent decontamination capabilities. Phase Two will enter the acquisition process at Milestone B and a full and open cost plus fixed fee contract will be awarded to conduct the Engineering and Manufacturing Development (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: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MDAP - HW SB - JSF Decontamination Delivery System	SS/FFP	STERIS Corporation : Mentor, OH	0.000	0.364	Mar 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	0.000	0.192	Mar 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	0.000	0.433	Mar 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	0.000	0.986	Sep 2015	0.757	Nov 2015	0.169	Nov 2016	-		0.169	Continuing	Continuing	0.000
DFoS CIDAS - HW S - Mid and Large Scale Applicator	MIPR	Various : TBD	0.000	0.525	May 2015	0.575	Nov 2015	0.221	Apr 2017	-		0.221	Continuing	Continuing	0.000
DFoS JSEW - HW S - Test Assets	C/FFP	STERIS Corporation : Mentor, OH	0.000	0.003	Sep 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - HW C - Aircraft Enclosure (Phase I)	C/CPFF	Materials Engineering and Technical Support Services Corp. (METSS) : Westerville, OH	0.000	0.000		2.011	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
JBADS - HW S - Chemical Agent Decon Mods (Phase II)	C/FPIF	TBD : TBD	0.000	0.000		0.000		3.000	Jun 2017	-		3.000	Continuing	Continuing	0.000
		Subtotal	0.000	2.503		3.343		3.390		-		3.390	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MDAP - TD/D SB - IPT and Technical Support	MIPR	Various : TBD	0.000	0.117	Feb 2015	0.315	Oct 2015	0.124	Nov 2016	-		0.124	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DFoS CIDAS - TD/D S - IPT and Technical Support	MIPR	Various : TBD	0.000	0.549	May 2015	1.075	Nov 2015	1.878	Nov 2016	-		1.878	Continuing	Continuing	0.000
DFoS GPD - TD/D S - IPT and Technical Support	MIPR	Various : TBD	0.000	0.277	Sep 2014	0.600	Oct 2015	0.000		-		0.000	Continuing	Continuing	0.000
DFoS JSEW - TD/D S - IPT and Technical Support	MIPR	Various : TBD	0.000	0.141	Nov 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - TD/D S - IPT and Technical Support	MIPR	Various : TBD	0.000	0.000		0.975	Dec 2015	0.685	Nov 2016	-		0.685	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.299	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	0.000	1.084		3.264		2.687		-		2.687	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DFoS CIDAS - DTE S - Live Agent / Lab Testing	MIPR	Various : TBD	0.000	0.320	May 2015	2.949	Oct 2015	1.540	Nov 2016	-		1.540	Continuing	Continuing	0.000
DFoS GPD - DTE S - Developmental Testing	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	2.135	Nov 2014	1.305	Oct 2015	0.000		-		0.000	Continuing	Continuing	0.000
DFoS GPD - DTE S - Developmental Testing #2	MIPR	Various : TBD	0.000	0.963	Nov 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
DFoS JSEW - OTE S - Developmental Testing	MIPR	Various : TBD	0.000	1.504	Nov 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - DTE S - Phase I Design Verification Testing	MIPR	Various : TBD	0.000	0.000		0.796	Apr 2016	0.000		-		0.000	Continuing	Continuing	0.000
JBADS - DTE S - Phase I Product Qualification Testing	MIPR	Various : TBD	0.000	0.000		0.000		0.738	Jun 2017	-		0.738	Continuing	Continuing	0.000
		Subtotal	0.000	4.922		5.050		2.278		-		2.278	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MDAP - PM/MS SB - Program Management and Technical Support	MIPR	Various : TBD	0.000	0.011	Feb 2015	0.073	Oct 2015	0.031		-		0.031	Continuing	Continuing	0.000
DFoS CIDAS - PM/MS S - Program Management and Technical Support	MIPR	Various : TBD	0.000	0.000		1.240	Oct 2015	0.952	Nov 2016	-		0.952	Continuing	Continuing	0.000
DFoS GPD - PM/MS S - Program Management and Technical Support	MIPR	Various : TBD	0.000	0.311	Nov 2014	0.486	Oct 2015	0.000		-		0.000	Continuing	Continuing	0.000
DFoS JSEW - PM/MS C - JSEW	PO	Various : TBD	0.000	0.200	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - PM/MS S - Program Management & Tech Support	MIPR	Various : TBD	0.000	0.000		1.788	Nov 2015	0.646	Nov 2016	-		0.646	Continuing	Continuing	0.000
		Subtotal	0.000	0.522		3.587		1.629		-		1.629	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	9.031		15.244		9.984		-		9.984	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

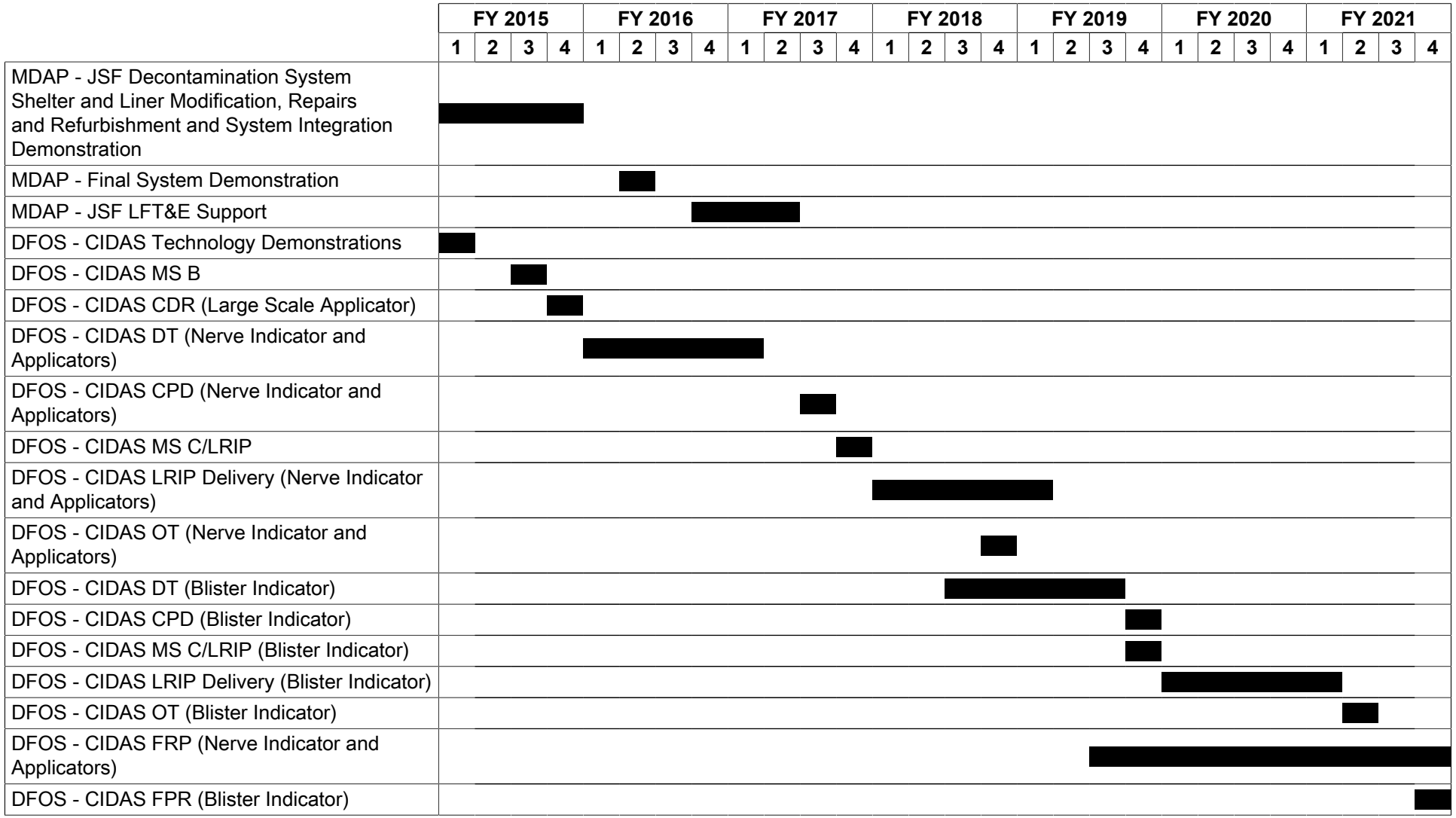

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

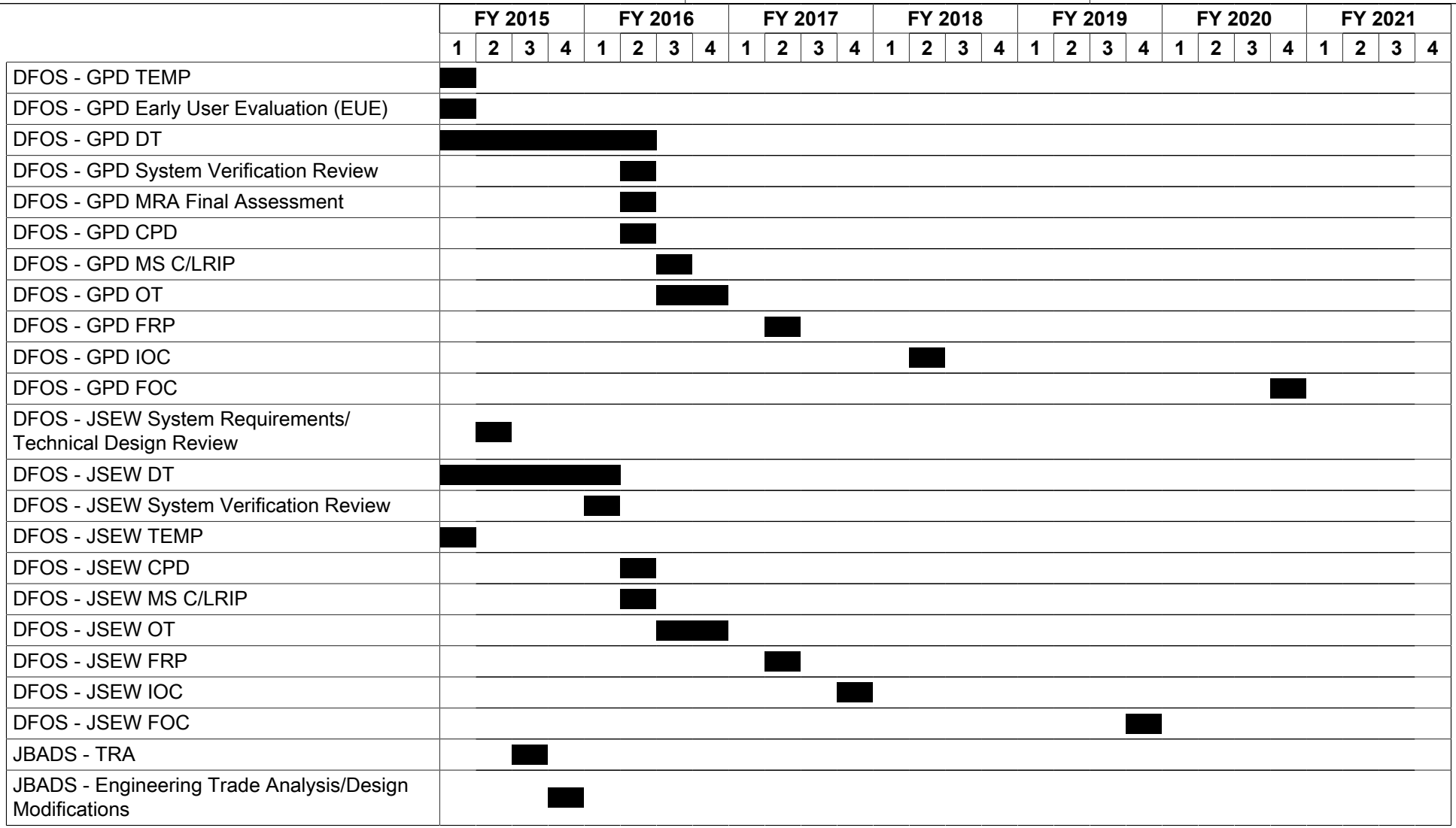

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

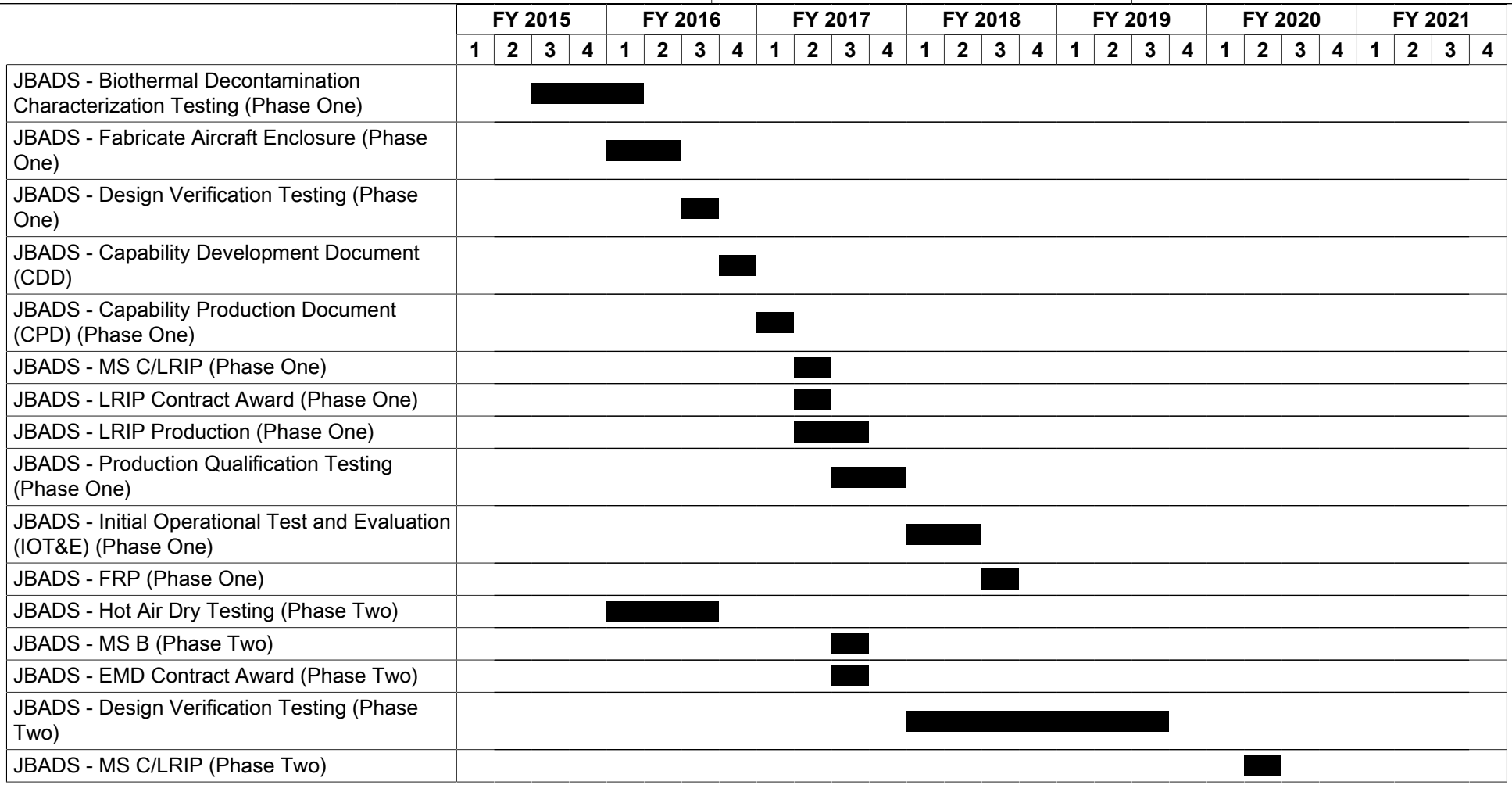

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** DE5 / *DECONTAMINATION SYSTEMS (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
MDAP - JSF Decontamination System Shelter and Liner Modification, Repairs and Refurbishment and System Integration Demonstration	1	2015	4	2015
MDAP - Final System Demonstration	2	2016	2	2016
MDAP - JSF LFT&E Support	4	2016	2	2017
DFOS - CIDAS Technology Demonstrations	1	2015	1	2015
DFOS - CIDAS MS B	3	2015	3	2015
DFOS - CIDAS CDR (Large Scale Applicator)	4	2015	4	2015
DFOS - CIDAS DT (Nerve Indicator and Applicators)	1	2016	1	2017
DFOS - CIDAS CPD (Nerve Indicator and Applicators)	3	2017	3	2017
DFOS - CIDAS MS C/LRIP	4	2017	4	2017
DFOS - CIDAS LRIP Delivery (Nerve Indicator and Applicators)	1	2018	1	2019
DFOS - CIDAS OT (Nerve Indicator and Applicators)	4	2018	4	2018
DFOS - CIDAS DT (Blister Indicator)	3	2018	3	2019
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)	1	2020	1	2021
DFOS - CIDAS OT (Blister Indicator)	2	2021	2	2021
DFOS - CIDAS FRP (Nerve Indicator and Applicators)	3	2019	4	2021
DFOS - CIDAS FPR (Blister Indicator)	4	2021	4	2021
DFOS - GPD TEMP	1	2015	1	2015
DFOS - GPD Early User Evaluation (EUE)	1	2015	1	2015
DFOS - GPD DT	1	2015	2	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 System Verification Review	2	2016	2	2016
DFOS - GPD MRA Final Assessment	2	2016	2	2016
DFOS - GPD CPD	2	2016	2	2016
DFOS - GPD MS C/LRIP	3	2016	3	2016
DFOS - GPD OT	3	2016	4	2016
DFOS - GPD FRP	2	2017	2	2017
DFOS - GPD IOC	2	2018	2	2018
DFOS - GPD FOC	4	2020	4	2020
DFOS - JSEW System Requirements/Technical Design Review	2	2015	2	2015
DFOS - JSEW DT	1	2015	1	2016
DFOS - JSEW System Verification Review	1	2016	1	2016
DFOS - JSEW TEMP	1	2015	1	2015
DFOS - JSEW CPD	2	2016	2	2016
DFOS - JSEW MS C/LRIP	2	2016	2	2016
DFOS - JSEW OT	3	2016	4	2016
DFOS - JSEW FRP	2	2017	2	2017
DFOS - JSEW IOC	4	2017	4	2017
DFOS - JSEW FOC	4	2019	4	2019
JBADS - TRA	3	2015	3	2015
JBADS - Engineering Trade Analysis/Design Modifications	4	2015	4	2015
JBADS - Biothermal Decontamination Characterization Testing (Phase One)	3	2015	1	2016
JBADS - Fabricate Aircraft Enclosure (Phase One)	1	2016	2	2016
JBADS - Design Verification Testing (Phase One)	3	2016	3	2016
JBADS - Capability Development Document (CDD)	4	2016	4	2016
JBADS - Capability Production Document (CPD) (Phase One)	1	2017	1	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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**
JBADS - MS C/LRIP (Phase One)	2	2017	2	2017
JBADS - LRIP Contract Award (Phase One)	2	2017	2	2017
JBADS - LRIP Production (Phase One)	2	2017	3	2017
JBADS - Production Qualification Testing (Phase One)	3	2017	4	2017
JBADS - Initial Operational Test and Evaluation (IOT&E) (Phase One)	1	2018	2	2018
JBADS - FRP (Phase One)	3	2018	3	2018
JBADS - Hot Air Dry Testing (Phase Two)	1	2016	3	2016
JBADS - MS B (Phase Two)	3	2017	3	2017
JBADS - EMD Contract Award (Phase Two)	3	2017	3	2017
JBADS - Design Verification Testing (Phase Two)	1	2018	3	2019
JBADS - MS C/LRIP (Phase Two)	2	2020	2	2020

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
IP5: *INDIVIDUAL PROTECTION (EMD)*	-	16.961	19.439	11.427	-	11.427	11.206	11.610	3.799	6.419	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).

Included in this program are:

(1) The Joint Service Aircrew Mask (JSAM) for Tactical Aircraft (TA), Strategic Aircraft (SA), Joint Strike Fighter (JSF), and Rotary Wing (RW) 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 Army, Air Force, Navy and Marine Corps fixed wing (FW) and RW aircrew members. 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, and an intercom for ground communication. They will also provide flame protection, demist/emergency demist, 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.

In FY14, the JSAM FW program was separated into two programs: JSAM TA and JSAM SA. The JSAM TA and SA respirators are being developed for use in the majority of DoD FW aircraft except for the F-35 JSF. The JSAM TA program will provide CB and anti-G protection up to nine times the vertical force (Gz), for aircrew in high-performance aircraft. The JSAM SA program will be used in aircrew positions that do not require anti-G protection and provide CB protection for positions that only need pressure breathing for altitude.

The JSAM-JSF is a CB respirator being specifically designed to support the F-35. 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. Prior to FY15, this project was funded under the JSAM funding line. 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 United States Air Force (USAF), Navy (USN), Marine Corps (USMC), and International Partners.

The JSAM MPU-5 RW mask is being developed for use by pilots and aircrew in the majority of DoD RW aircraft in the United States Army (USA) except AH-64 users, USAF, USN, and USMC. 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) 2 (garment and boots) and easily convert to MOPP 3 (garment,

boots, and mask) when the threat level dictates, thereby reducing physiological 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.

(2) The Joint Service General Purpose Mask (JSGPM) Advanced Respiratory Protection Initiative (ARPI) will address improved mask protection, filter protection against Toxic Industrial Chemicals (TIC)/Toxic Industrial Materials (TIM) and improved profile and breathing resistance; and wearability compatibility/integration. This will be accomplished through class-based analysis, Filtration Advanced Screening Test (FAST), desorption study, and advanced Chemical, Biological, Radiological, and Nuclear (CBRN) filtration efforts. Several technologies are being pursued by the Joint Science and Technology Office (JSTO), with two specific technologies being pursued in the FY14-16 timeframe. The JSGPM ARPI effort will investigate alternative designs and modifications to Zirconium hydroxide, Zinc, Argentum (Silver), Triethylene di-amine (TEDA) (ZZAT) to further increase filtration of TICs and Chemical Warfare Agents (CWA). ZZAT is a zirconium hydroxide based filtration media that can potentially be layered with carbon. The first technology, known as Cobalt-Zinc ZZAT (CoZZAT), uses a layered bed of carbon concept to improve TIC and CWA protection capabilities, while the second technology known as Metal Organic Framework (MOF), is an engineered media that is a porous crystalline compound made up of metal ions and organic bridging molecules (ligands) for targeted removal of chemicals. The JSGPM ARPI effort will also investigate various applications of nanofiber particulate media. The new filters will create a new JSGPM mask, the M53A1, which will meet National Institute of Occupational Safety and Health (NIOSH) certification standards for use against CBRN agents in order to provide users the flexibility to have one mask that is approved for both military and Occupational Safety and Health Administration (OSHA) regulated missions. This effort transitions to BA7 in FY16.

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.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015	FY 2016	FY 2017
Title: 1) JSAM SA ***Description:*** Complete Developmental Testing and Operational Testing on the E-3 (Air Force) and P-8 (Navy) aircraft. ***FY 2016 Plans:*** Complete Design Verification Testing (DVT), including flight tests on the E-3 and P-3C aircraft. Conduct System Verification Review (SVR), Production Readiness Review (PRR), and Physical Configuration Audit (PCA). Initiate preliminary events leading to operational testing (OT), and initiate OT. Develop and finalize the Operational Test Agency (OTA) Milestone Assessment Report (OMAR), conduct the Logistics Demonstration, finalize the Technical Manual (TM) and complete the Joint Integrated Logistics Assessment (JILA). ***FY 2017 Plans:*** Conduct operational testing (OT) for use on the E-3 (Air Force), and P-8 (Navy) aircraft. Develop the Operational Evaluation Report (OER). 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 OT.	-	5.588	3.539
Title: 2) JSAM TA ***Description:*** Achieve MS C and conduct test integration events on aircraft platforms. ***FY 2016 Plans:*** Continue with comparative gate testing for the full and open contract and award contract to the JSAM TA selected vendor. Purchase 100 masks at an estimated unit cost of $13,000.00 for use in Operational Tests (OT) and integration events. Conduct OT and integration events with JSAM TA platforms, and achieve Milestone C/Low Rate Initial Production decision. ***FY 2017 Plans:*** Conduct test integration events on USAF and USN aircraft platforms.	-	6.000	4.065
Title: 3) JSAM JSF ***Description:*** Developmental Testing and Live Fire Test and Evaluation ***FY 2015 Accomplishments:*** Completed key Developmental Testing (DT) events including in part Quantitative Fit Factor (QFF) testing, Simulant Agent Resistance Test Manikin (SMARTMAN) testing, Man in Simulant Test (MIST), Filter testing, and Acceleration and Altitude Tests.	2.457	3.099	1.883

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015	FY 2016	FY 2017
Conducted Logistic Demonstration and Manufacturing Readiness Assessment. Provided product development support to the JSF program office in support of the Chemical and Biological Live Fire Test and Evaluation (LFT&E) planning. ***FY 2016 Plans:*** Complete Developmental Testing (DT) and F-35 CB SDD flights. Conduct follow-on DT and Initiate JSF CB LFT&E event. Conclude Manufacturing Readiness Assessment. Conduct System Verification and Production Readiness Reviews supporting a Low Rate Initial Production decision. Conduct Physical Configuration Audit (PCA) and Instructor and Key Personnel Training (IKPT). ***FY 2017 Plans:*** Complete JSF Chemical and Biological Live Fire Test and Evaluation (LFT&E) event. Conduct Chemical and Biological Operational Test event.			
Title: 4) JSAM RW ***Description:*** Multi-Service Operational Testing and Evaluation (MOT&E) ***FY 2015 Accomplishments:*** Conducted and completed MOT&E for USA and USAF. Conducted USN/USMC aircraft integration testing. Conducted airworthiness testing and obtained airworthiness releases for operational testing of USA and USAF rotary wing aircraft. Conducted System Verification Review (SVR) and achieved Milestone (MS) C / Low Rate Initial Production (LRIP). ***FY 2016 Plans:*** Conduct and complete USN/USMC MOT&E and USN shipboard flight testing. Complete USN airworthiness testing and obtain airworthiness releases for the USN rotary wing aircraft. ***FY 2017 Plans:*** Receive the final Operational Evaluation Report, implement potential design changes through modifications or reconfiguration to the MPU-5 as result of USN/USMC MOT&E and shipboard testing, update the Test and Evaluation Master Plan, and perform validation testing.	3.179	4.404	0.940
Title: 5) JSAM (FW) - SA ***Description:*** Completed final design and initiated Developmental Testing. ***FY 2015 Accomplishments:***	6.687	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015	FY 2016	FY 2017
Completed Design Verification Testing (DVT). Conducted the Critical Design Review (CDR) and Manufacturing Readiness Assessment (MRA), and completed the final design phase. Initiated production tooling and built 265 assets (200 for DT and 65 for other users) at a unit cost of $1,900 each. Completed draft Technical Manual. Began Developmental Testing (DT)			
Title: 6) JSAM (FW) -TA ***Description:*** Conducted USAF-F22 ECP testing and prepare for MS C. ***FY 2015 Accomplishments:*** Purchased 44 modified A/P22P(A)V3 test assets at $10,653 to support testing of the ECP respirator for the USAF F-22 Readiness requirement. Continued testing the ECP respirator for the USAF F-22 Readiness requirement and provided test data for risk reduction of the program. Initiated documentation to support solicitation of Request for Proposals (RFP) and initiated Full and Open Competition and Milestone C documentation.	3.677	-	-
Title: 7) JSGPM ***Description:*** Advanced Respiratory Protection Initiative - M53A1 NIOSH Certification ***FY 2015 Accomplishments:*** Completed refinement of technical data and manufacturing process controls for the CoZZAT material. Fully funded National Institute for Occupational Safety and Health (NIOSH) certification delivery order for filter prototype systems development and delivery to National Personal Protective Test Laboratory (NPPTL). M53A1 is scheduled to be NIOSH certified in October 2015.	0.961	-	-
Title: 8) UIPE - Increment 2 ***Description:*** System Development and Demonstration/Engineering and Manufacturing Development ***FY 2017 Plans:*** Achieve Milestone B. Initiate detailed design and prototype development in coordination with the selected manufacturing partner. Perform system-level design verification testing.	-	-	1.000
Title: 9) SBIR/STTR ***FY 2016 Plans:*** SBIR/STTR - FY16 - Small Business Innovative Research.	-	0.348	-
Accomplishments/Planned Programs Subtotals	16.961	19.439	11.427

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program			Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• JI0002: *JS AIRCREW MASK (JSAM)*	11.526	24.630	52.284	-	52.284	54.558	55.136	50.374	50.062	Continuing	Continuing
• MA0401: *CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)*	8.222	11.101	13.525	-	13.525	11.101	13.200	14.000	14.600	Continuing	Continuing

Remarks

D. Acquisition Strategy

JS AIRCREW MASK FIXED WING (JSAM FW)

The overall JSAM acquisition approach is phased due to the complexity of interfacing with almost 200 aircraft types and models with different mission sets, Aviation Life Support Equipment (ALSE), cockpit layouts, priorities, etc. JSAM will pursue two materiel solutions for fixed wing aircraft via the JSAM for Tactical Aircraft (TA) and JSAM for Strategic Aircraft (SA) programs. JSAM TA and SA must be compatible with current CB ensembles and provide flame protection and will replace all existing Pressure Breathing for Gravity (PBG) and non-PBG CB aircrew respirators. The JSAM TA program utilizes a phased acquisition strategy to provide aircrew of all Services with individual head-eye-respiratory protection against Chemical-Biological (CB) warfare agents. The JSAM TA effort will provide Pressure Breathing for Gravity (PBG) Mask for USN and USAF tactical aircraft. The JSAM SA (Modified M53 (MM53)) effort will test and field a mask for aircrew positions not requiring PBG capabilities. This contract was awarded via sole source to Avon Protection Systems, Cadillac, Michigan to modify and field a commercially available mask (M53).

JS AIRCREW MASK ROTARY WING (JSAM RW)

The JSAM RW was developed under a competitive Cost Plus Fixed Fee contract, which is also used by JSAM Apache and JSAM Apache Block III. A sole source Fixed Price Incentive (FPI) contract was awarded for LRIP items. A sole source Indefinite Delivery/Indefinite Quantity (IDIQ) production contract with FPI and FFP CLINs will be pursued for additional LRIP quantities and FRP.

JS AIRCREW MASK FIXED WING 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), United States Army (USA), and United States Coast Guard (USCG). 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: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 in four LRIP phases. This phased approach will allow the JSAM SA mask to be fielded to aircrew of the most applicable aircrafts in the shortest amount of time. At the end of each LRIP phase, the aircraft associated with each phase will have achieved an Initial Operating Capability (IOC) with the JSAM SA mask. The remaining aircrew, not given a JSAM SA mask during the LRIP phases, will receive their masks after FRP. At the end of FRP, the Services will have achieved their Full Operating Capability (FOC) with the mask. LRIP 1 will consist of fielding the JSAM SA mask to most of 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 LRIP phase (i.e. 2, 3, or 4) will include the remaining aircraft.

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 CDR. The second test phase is Developmental Testing (DT) to support Milestone C/LRIP. The third test phase is Operational Testing (OT) of LRIP assets to support IOC fielding to USAF E-3 and USN P-8 aircrew. The final test phase is combined DT/OT for the LRIPs 2, 3, and 4.

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, Manufacturing, and Development (EMD) phase. The second contract, which is planned to be awarded after Milestone C/LRIP, will cover the activities during the Production and Deployment (PD) phase including all LRIP and FRP builds.

JS AIRCREW MASK FIXED WING TACTICAL AIRCRAFT (JSAM TA)

The JSAM TA planned solution for the USAF F-22 Readiness requirement is an integration effort and an Engineering Change Proposal (ECP) to the Navy's A/P22P-14(A). The ECP will provide CB-protection capability to F-22 pilots while providing valuable test data to characterize the JSAM TA performance envelope. The JSAM TA program plans to pursue a full-and-open competition for the production contract to cover Low Rate Initial Production (LRIP) and Full Rate Production (FRP). The Government plans to competitively award one, Firm Fixed Price (FFP) contract that will include production and subsequent integration efforts to be completed for each aircraft platform.

JS 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.

JS GENERAL PURPOSE MASK (JSGPM)

The JSGPM Advanced Respiratory Protection Initiative (ARPI) effort is using the two M61 filter contracts awarded to 3M and Avon to develop improved filters for the JSGPM. There is a continual technology refreshment CLIN on both contracts that allow for filter development tasks to be awarded. The tasks can be competed between the two awardees or awarded to both to ensure competition on future spares and delivery orders. As filter technologies transition from the Defense Threat Reduction Agency (DTRA) and Joint Science and Technology Office (JSTO), the technologies will be matured from system/subsystem prototyping demonstration

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

technologies at Technology Readiness Level (TRL) 6 to actual system "mission proven" through successful mission operations in a mission environment at TRL 9. In addition to the maturing of the technology, the Manufacturing Readiness Level (MRL) of the media and the layered bed design requires maturing to an MRL level 9. The complexity of maturing all these different items requires an evolutionary approach with one prototype iteration governing the approach on the next iteration. With the criticality of the filter, the production transition to the new improved filter has to be done with a high degree of confidence with risks mitigated to a low level.

CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)

The UIPE Increment 2 supports an evolutionary acquisition strategy with the intent of protecting the Warfighter from operationally relevant and non-traditional chemical, biological, radiological, and nuclear (CBRN)/toxic industrial hazards during Joint Force operations. UIPE Increment 2 will leverage the approved UIPE CBRN Initial Capabilities Document (ICD) to build on and enhance capabilities attained in UIPE Increment 1 by continuing to provide integrated individual protective equipment that enables the Warfighter to operate in a contaminated environment with no or minimal degradation to performance. UIPE Increment 2 will perform trade space analysis using Requests for Information for materials, closures, and designs, the issuance of a Challenge, and a concept demonstration event to provide a baseline assessment and feed the requirements development process. A manufacturing and development contract will be awarded prior to Milestone A to build prototypes/development samples, produce test articles, and provide manufacturability, development and documentation support. The final UIPE Increment 2 garment design will be Government owned in order to control interfaces and insert future technologies. UIPE Increment 2 is exploring the use of a Government issued Challenge to attract innovative ideas from Government, Industry, and Academia for inclusion into the final solutions. Strategies for obtaining various capability solutions will be developed as those solutions are identified. If Commercial-of-the-Shelf (COTS) or Non-Developmental Item (NDI) solutions are identified, appropriate contracting methods will be pursued. Where possible, rights and data will be requested to allow competitive procurement.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM FW - HW S - Modified M53 - Design Modification and Development	SS/CPFF	AVON Protection Systems Inc. : Cadillac, MI	4.893	1.670	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM FW - HW S - HW C- AP22P-14 (A)- Mask/ Respirators/System Components	SS/CPFF	Cam Lock Limited : Aldershot Hampshire, UK	0.000	0.469	Mar 2015	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	0.000	1.366	Jan 2015	0.775	Jan 2016	0.330	Jan 2017	-		0.330	Continuing	Continuing	0.000
JSAM RW - HW S - MBU-5 Engineering and Manufacturing Contract	C/CPFF	AVOX Systems Inc. : Lancaster, NY	1.452	0.214	Jul 2015	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	0.000		0.502	Nov 2015	0.207	Nov 2016	-		0.207	Continuing	Continuing	0.000
JSAM TA - HW S - Hardware and Support Equipment for Integration and Test	C/FPIF	TBD : TBD	0.000	0.000		0.000		0.440	Dec 2016	-		0.440	Continuing	Continuing	0.000
JSAM TA - HW S - Mask	C/FPIF	TBD : TBD	0.000	0.000		1.300	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000
JSGPM - HW C - NIOSH Certification	C/FFP	AVON Protection Systems Inc. : Cadillac, MI	0.642	0.207	Oct 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
UIPE - HW S - UIPE Increment 2 - Prototype Development	Various	TBD : TBD	0.000	0.000		0.000		0.598	Jul 2017	-		0.598	Continuing	Continuing	0.000
		Subtotal	6.987	3.926		2.577		1.575		-		1.575	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM FW - (TA) - ES S - Engineering Support	MIPR	Various : TBD	3.654	1.249	Oct 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM FW - (SA)- ES S - MM53 - Engineering and IPT Support	MIPR	Various : TBD	3.974	1.776	Dec 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM JSF - ES S - JSAM-JSF Engineering Support	MIPR	Various : TBD	0.000	0.202	Nov 2014	0.800	Jan 2016	0.642	Nov 2016	-		0.642	Continuing	Continuing	0.000
JSAM RW - ES S - MBU-5 Integrated Product Team/ Engineering/Technical Support	MIPR	Various : TBD	3.902	0.713	Dec 2014	0.601	Dec 2015	0.290	Nov 2016	-		0.290	Continuing	Continuing	0.000
JSAM SA - TD/D S - Logistics Demonstration	MIPR	Various : TBD	0.000	0.000		0.150	Nov 2015	0.000		-		0.000	Continuing	Continuing	0.000
JSAM SA - ES S - Engineering and IPT Support	MIPR	Various : TBD	0.000	0.000		2.167	Jan 2016	1.779	Nov 2016	-		1.779	Continuing	Continuing	0.000
JSAM TA - ES S - Engineering Support	MIPR	Various : TBD	0.000	0.000		1.331	Nov 2015	1.353	Nov 2016	-		1.353	Continuing	Continuing	0.000
JSGPM - TD/D SB - NIOSH Test/Log Support	MIPR	Various : TBD	1.286	0.353	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.348	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	12.816	4.293		5.397		4.064		-		4.064	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM FW - (SA) - DTE S - MM53 - Developmental Testing	MIPR	Various : TBD	1.044	1.408	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM FW - (TA) - DTE S - AP22P-14(A) - Developmental Testing	MIPR	Various : TBD	1.309	0.878	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM JSF - OTE S - LFT&E	MIPR	Various : TBD	0.000	0.000		0.622	Jan 2016	0.671	Nov 2016	-		0.671	Continuing	Continuing	0.000
JSAM JSF - DTE S- Developmental Testing	MIPR	Various : TBD	0.000	0.232	Nov 2014	0.300	Nov 2015	0.000		-		0.000	Continuing	Continuing	0.000
JSAM JSF - DTE S - Follow-On DT	MIPR	Various : TBD	0.000	0.000		0.200	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000
JSAM RW - DTE S - MPU-5 Developmental Testing (USN/USMC)	MIPR	Various : TBD	2.681	0.680	Apr 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM RW - OTE S - MPU-5 Multi-Service Operational Testing (USA/ USAF)	MIPR	Various : TBD	0.000	0.600	Dec 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM RW - OTE S - MPU-5 Multi-Service Operational Testing (USN/ USMC)	MIPR	Various : TBD	0.000	0.000		1.848	Jan 2016	0.459	Nov 2016	-		0.459	Continuing	Continuing	0.000
JSAM SA - DTE S - Developmental Testing	MIPR	Various : TBD	0.000	0.000		0.669	Nov 2015	0.000		-		0.000	Continuing	Continuing	0.000
JSAM SA - OTE S - Operational Testing	MIPR	Various : TBD	0.000	0.000		1.375	Nov 2015	1.102	Nov 2016	-		1.102	Continuing	Continuing	0.000
JSAM TA - JSAM TA - Testing and Integration	MIPR	Various : TBD	0.000	0.000		2.590	Nov 2015	1.754	Nov 2016	-		1.754	Continuing	Continuing	0.000
JSGPM - DTE SB - JSGPM Filter Testing	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	3.596	0.092	Apr 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
UIPE - DTE S - Design Verification Testing	MIPR	TBD : TBD	0.000	0.000		0.000		0.200	Jul 2017	-		0.200	Continuing	Continuing	0.000
		Subtotal	8.630	3.890		7.604		4.186		-		4.186	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JSAM FW - (SA)- PM/ MS C - JSAM MM53 - Program Management and Technical Support	Various	Various : TBD	0.210	1.833	Nov 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM FW - (TA)- PM/ MS C - AP22P-14(A) - Program Management and Technical Support	Various	Various : TBD	0.975	1.081	Oct 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSAM JSF - PM/MS C - Program Management and Technical Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.657	Jan 2015	0.402	Jan 2016	0.240	Nov 2016	-		0.240	Continuing	Continuing	0.000
JSAM RW - PM/MS S - MBU-5 Program Management and Technical Support	Various	Various : TBD	1.499	0.972	Dec 2014	1.955	Dec 2015	0.191	Nov 2016	-		0.191	Continuing	Continuing	0.000
JSAM SA - PM/MS S - Program Management and Technical Support Services	MIPR	Various : TBD	0.000	0.000		0.725	Nov 2015	0.451	Nov 2016	-		0.451	Continuing	Continuing	0.000
JSAM TA - PM/MS S - Program and Technical Management	MIPR	Various : TBD	0.000	0.000		0.779	Nov 2015	0.518	Nov 2016	-		0.518	Continuing	Continuing	0.000
JSGPM - PM/MS C - Program Management and Technical Support	Various	Various : TBD	1.056	0.309	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
UIPE - PM/MS S - UIPE Increment 2 - PM/SME Prog Mgt	MIPR	Various : TBD	0.000	0.000		0.000		0.202	Jul 2017	-		0.202	Continuing	Continuing	0.000
		Subtotal	3.740	4.852		3.861		1.602		-		1.602	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) IP5 / *INDIVIDUAL PROTECTION (EMD)*	

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	32.173	16.961		19.439		11.427		-		11.427	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

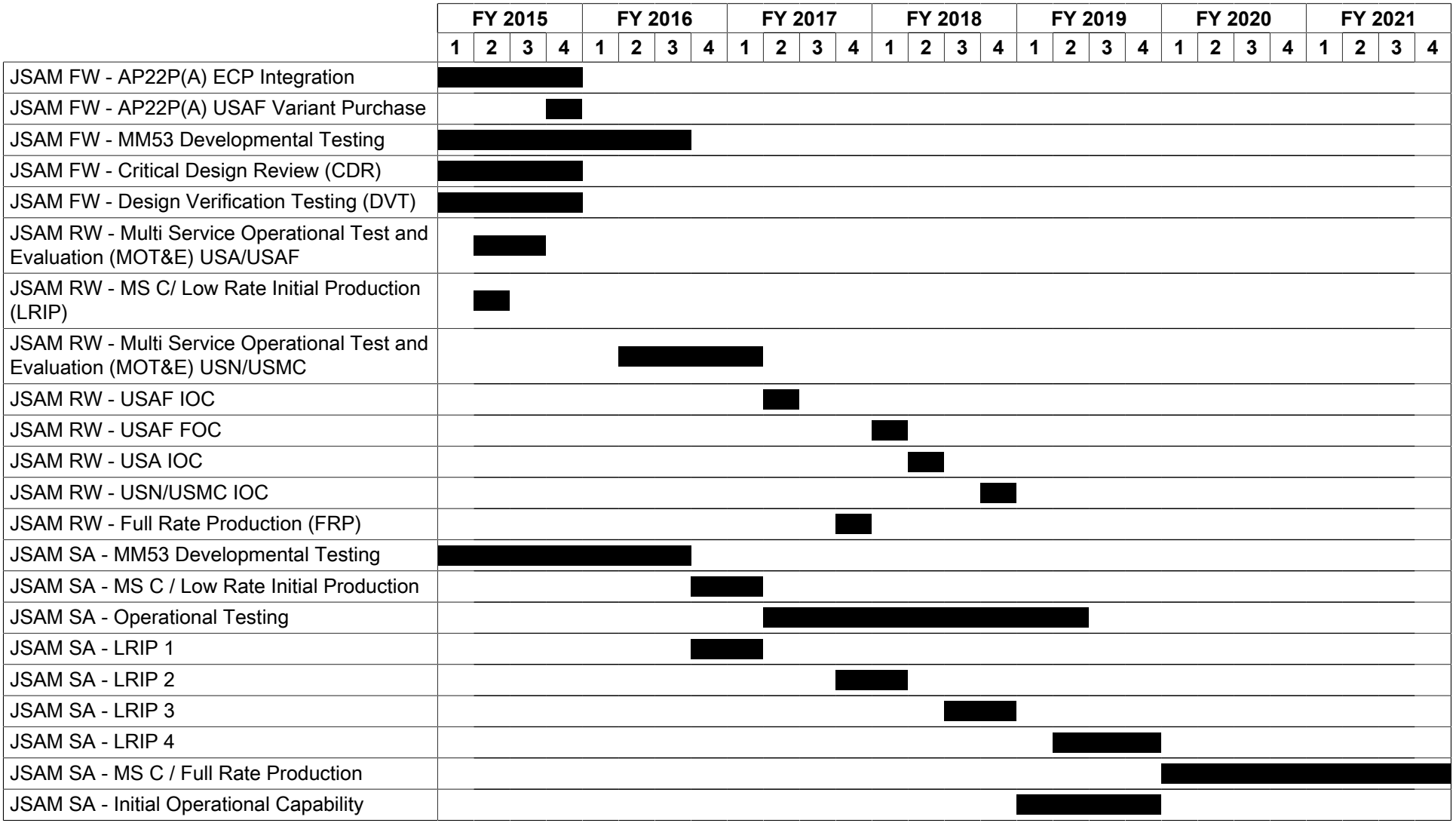

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

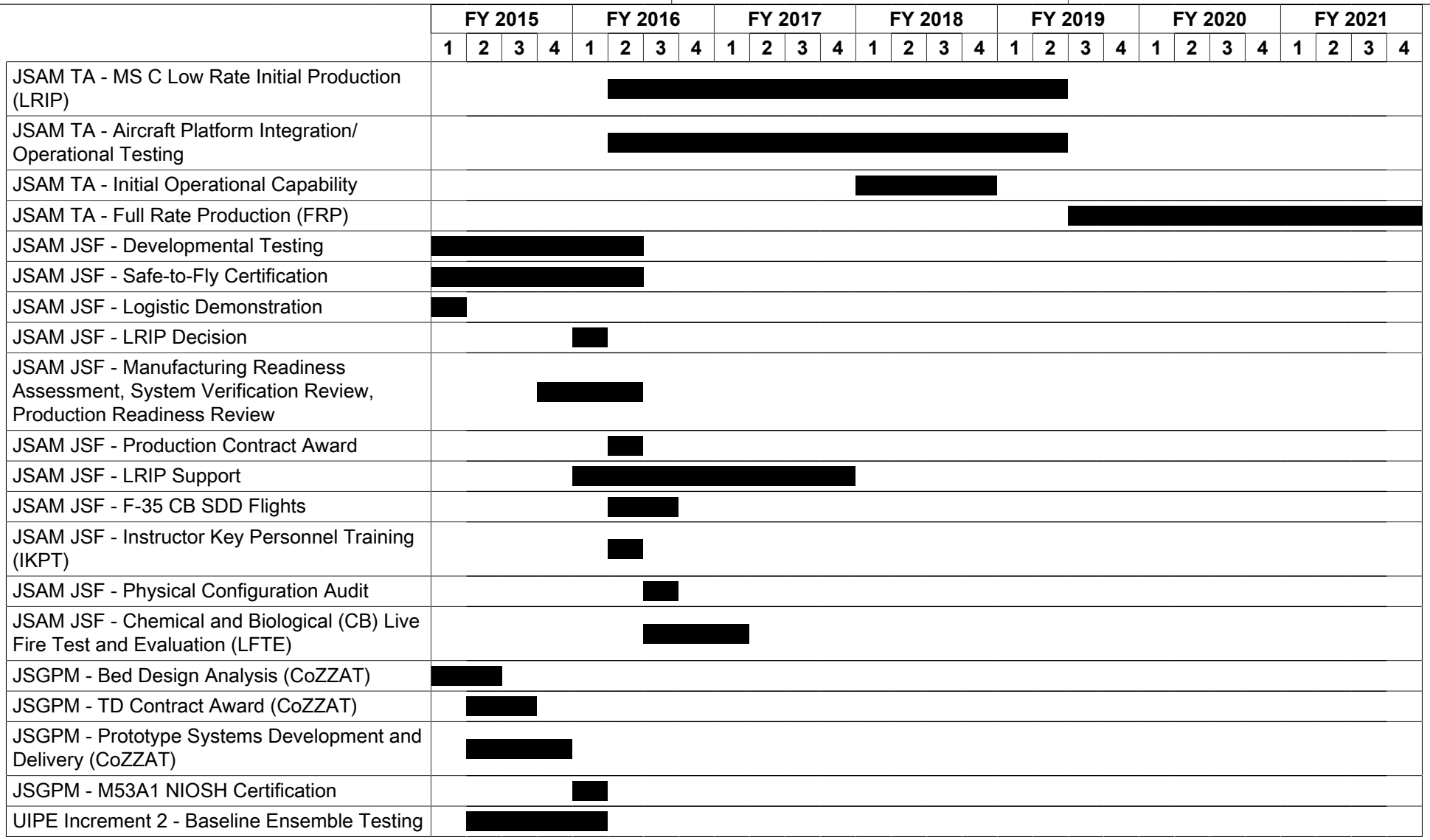

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

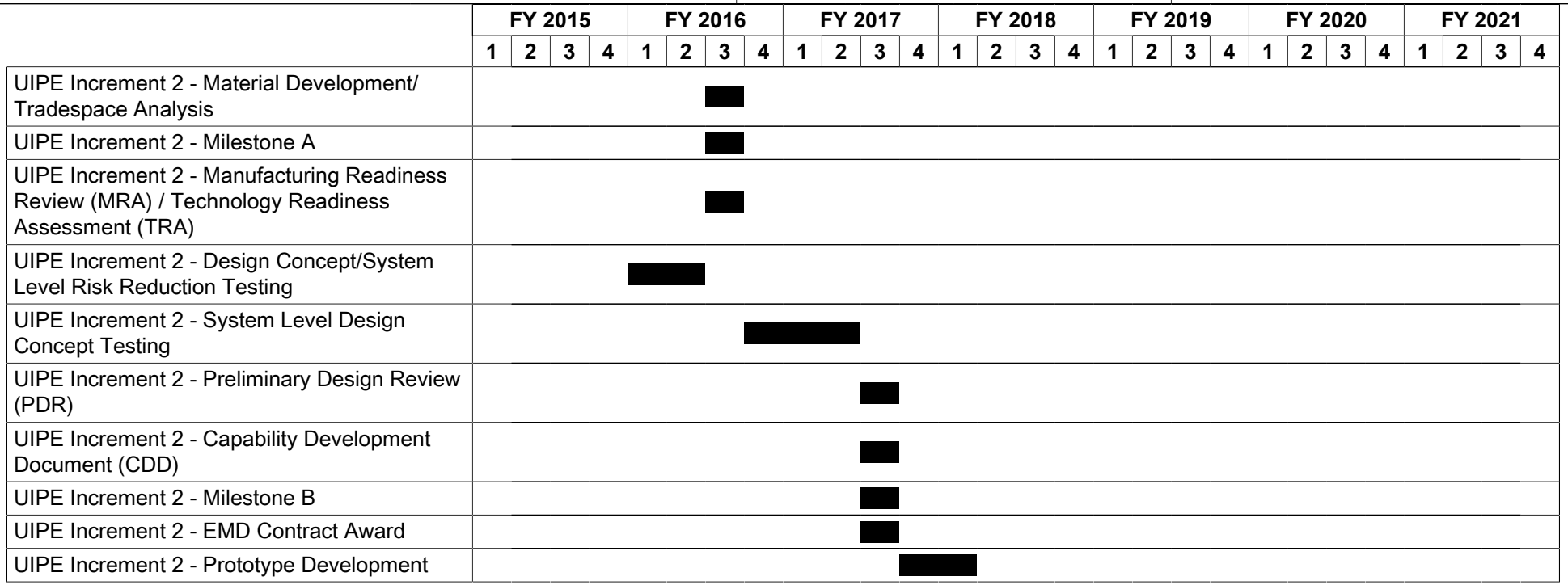

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IP5 / *INDIVIDUAL PROTECTION (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JSAM FW - AP22P(A) ECP Integration	1	2015	4	2015
JSAM FW - AP22P(A) USAF Variant Purchase	4	2015	4	2015
JSAM FW - MM53 Developmental Testing	1	2015	3	2016
JSAM FW - Critical Design Review (CDR)	1	2015	4	2015
JSAM FW - Design Verification Testing (DVT)	1	2015	4	2015
JSAM RW - Multi Service Operational Test and Evaluation (MOT&E) USA/USAF	2	2015	3	2015
JSAM RW - MS C/ Low Rate Initial Production (LRIP)	2	2015	2	2015
JSAM RW - Multi Service Operational Test and Evaluation (MOT&E) USN/USMC	2	2016	1	2017
JSAM RW - USAF IOC	2	2017	2	2017
JSAM RW - USAF FOC	1	2018	1	2018
JSAM RW - USA IOC	2	2018	2	2018
JSAM RW - USN/USMC IOC	4	2018	4	2018
JSAM RW - Full Rate Production (FRP)	4	2017	4	2017
JSAM SA - MM53 Developmental Testing	1	2015	3	2016
JSAM SA - MS C / Low Rate Initial Production	4	2016	1	2017
JSAM SA - Operational Testing	2	2017	2	2019
JSAM SA - LRIP 1	4	2016	1	2017
JSAM SA - LRIP 2	4	2017	1	2018
JSAM SA - LRIP 3	3	2018	4	2018
JSAM SA - LRIP 4	2	2019	4	2019
JSAM SA - MS C / Full Rate Production	1	2020	4	2021
JSAM SA - Initial Operational Capability	1	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 - MS C Low Rate Initial Production (LRIP)	2	2016	2	2019
JSAM TA - Aircraft Platform Integration/ Operational Testing	2	2016	2	2019
JSAM TA - Initial Operational Capability	1	2018	4	2018
JSAM TA - Full Rate Production (FRP)	3	2019	4	2021
JSAM JSF - Developmental Testing	1	2015	2	2016
JSAM JSF - Safe-to-Fly Certification	1	2015	2	2016
JSAM JSF - Logistic Demonstration	1	2015	1	2015
JSAM JSF - LRIP Decision	1	2016	1	2016
JSAM JSF - Manufacturing Readiness Assessment, System Verification Review, Production Readiness Review	4	2015	2	2016
JSAM JSF - Production Contract Award	2	2016	2	2016
JSAM JSF - LRIP Support	1	2016	4	2017
JSAM JSF - F-35 CB SDD Flights	2	2016	3	2016
JSAM JSF - Instructor Key Personnel Training (IKPT)	2	2016	2	2016
JSAM JSF - Physical Configuration Audit	3	2016	3	2016
JSAM JSF - Chemical and Biological (CB) Live Fire Test and Evaluation (LFTE)	3	2016	1	2017
JSGPM - Bed Design Analysis (CoZZAT)	1	2015	2	2015
JSGPM - TD Contract Award (CoZZAT)	2	2015	3	2015
JSGPM - Prototype Systems Development and Delivery (CoZZAT)	2	2015	4	2015
JSGPM - M53A1 NIOSH Certification	1	2016	1	2016
UIPE Increment 2 - Baseline Ensemble Testing	2	2015	1	2016
UIPE Increment 2 - Material Development/Tradespace Analysis	3	2016	3	2016
UIPE Increment 2 - Milestone A	3	2016	3	2016
UIPE Increment 2 - Manufacturing Readiness Review (MRA) / Technology Readiness Assessment (TRA)	3	2016	3	2016
UIPE Increment 2 - Design Concept/System Level Risk Reduction Testing	1	2016	2	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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**
UIPE Increment 2 - System Level Design Concept Testing	4	2016	2	2017
UIPE Increment 2 - Preliminary Design Review (PDR)	3	2017	3	2017
UIPE Increment 2 - Capability Development Document (CDD)	3	2017	3	2017
UIPE Increment 2 - Milestone B	3	2017	3	2017
UIPE Increment 2 - EMD Contract Award	3	2017	3	2017
UIPE Increment 2 - Prototype Development	4	2017	1	2018

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
IS5: *INFORMATION SYSTEMS (EMD)*	-	12.277	19.960	27.323	-	27.323	24.676	25.853	26.236	28.806	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. Increment 2 will 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: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

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", a term used frequently through the JPM IS R forms, 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 Interim 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) 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.

As software-intensive systems, JEM, JWARN, and BSP have no separately identifiable unit production components. 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. Expect BSP to be similarly designated.

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 2015	FY 2016	FY 2017
Title: 1) BSP Product Development	-	6.954	8.101
FY 2016 Plans: Plan to development and integration of BSP capabilities for inclusion in Capability Releases. This will 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: Continued development and integration of BSP capabilities for inclusion in Capability Releases. This will included architecture development, system design, key system tools, third party developed models, access to external data sources, information assurance, and host platform design.			
Title: 2) BSP Developmental Test and Evaluation	-	0.998	0.984
FY 2016 Plans: Joint and Service Developmental Testing of BSP Capability Releases as required in accordance with the BSP Test and Evaluation Master Plan (TEMP).			
FY 2017 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continued Joint and Service Developmental Testing of BSP Capability Releases as required in accordance with the BSP Test and Evaluation Master Plan (TEMP).			
Title: 3) BSP Program Management Support ***FY 2016 Plans:*** Will provide support for the management of all aspects of BSP development and testing. Tasks will included, planning, budgeting, execution oversight, risk management, user feedback, scheduling, and administration. ***FY 2017 Plans:*** Continued support for the management of all aspects of BSP development and testing. Tasks will included, planning, budgeting, execution oversight, risk management, user feedback, scheduling, and administration.	-	0.867	1.003
Title: 4) BSP Operational Testing and Evaluation ***FY 2016 Plans:*** Will support the 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:*** Continued 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.	-	1.135	1.486
Title: 5) CBRN IS - Technical Guidance ***FY 2017 Plans:*** Define CBRN IS Technical Guidance.	-	-	0.500
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.	-	-	0.800
Title: 7) CBRN IS - Cybersecurity / Information Assurance ***FY 2017 Plans:*** Implement cybersecurity lock-downs for CBRN and achieve an Authority To Operate.	-	-	0.500
Title: 8) CBRN IS - Product Development ***FY 2017 Plans:***	-	-	2.339

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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.			
Title: 9) CBRN IS - Operational Assessments ***FY 2017 Plans:*** Conduct Operational Assessments of CBRN IS in various operational environments.	-	-	1.500
Title: 10) JEM - Increment 2 Developmental Test and Evaluation ***FY 2015 Accomplishments:*** Conducted Government Development Test of the software deliveries. Conduct independent Verification, Validation, and Accreditation of software models to support OT. ***FY 2016 Plans:*** Continue Government Development Test of software deliveries. ***FY 2017 Plans:*** Continue Government Development Test of 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.	1.305	0.677	0.656
Title: 11) JEM - Increment 2 Program Development ***FY 2015 Accomplishments:*** Developed JEM Increment 2 software development and perform integration into Command and Control (C2) systems. ***FY 2016 Plans:*** Continue development of JEM Increment 2 software and perform 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.	4.594	1.005	1.051
Title: 12) JEM - Increment 2 Program Management ***FY 2015 Accomplishments:*** Performed program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Continued development and execution of Build Decisions (BD) 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	0.747	0.833	0.674

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
order to deploy JEM Increment 2 to the services. Completed development of Requirements Definition Package 3 (RDP-3), which defines requirements for C2 systems integration of the JEM software. Completed Build Decision 2 (BD2) for JEM Increment 2. ***FY 2016 Plans:*** Complete 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 Build Decision 4 (BD4) 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 3 (RDP-3), 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 3 (BD3) 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 4 (RDP-4), which defines requirements for C2 systems integration of the JEM software.			
Title: 13) JEM - Increment 2 Operational Test and Evaluation ***FY 2015 Accomplishments:*** Developed Operational Test Plans. Conducted lab based Operational Test (OT) and limited scope service-specific Initial Operational Test & Evaluation (IOT&E) which will allowed for Initial Operational Capability (IOC) of JEM Increment 2 as a standalone to be deployed to the services. ***FY 2016 Plans:*** Continue 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.	1.050	1.037	0.539
Title: 14) JWARN Management Support	0.351	0.574	0.735

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Achieved Milestone B (MS B) approval. As part of IT Box development received approval for the following: Build Decision 1 (BD-1), Requirements Definition Packages 1 & 2 (RDP-1/2) and Capability Drops 1.1 & 1.2 (CD 1.1/1.2). ***FY 2016 Plans:*** Continue 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 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.			
Title: 15) JWARN - Increment 2 Product Development ***FY 2015 Accomplishments:*** Initiated JWARN Increment 2 software development and perform integration into Command and Control (C2) systems. ***FY 2016 Plans:*** Continue JWARN Increment 2 software development and perform integration into Command and Control (C2) systems. Initiate 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.	1.601	2.609	3.196
Title: 16) JWARN - Developmental Test and Evaluation ***FY 2015 Accomplishments:*** Initiate Government development test and evaluation of software deliveries in preparation for 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 2016 Plans:***	0.153	0.257	0.329

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue Government development test and evaluation of software deliveries in preparation for 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 2017 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 - Operational Test and Evaluation ***FY 2015 Accomplishments:*** Conducted Operational Test and Evaluation. ***FY 2016 Plans:*** Conduct Multiservice Operational Test and Evaluation (MOT&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 Initial Operational Capability (IOC) of JWARN Increment 2 to be deployed to the services.	0.462	0.789	0.809
Title: 18) SSA Policies, Standards and Guidelines ***FY 2015 Accomplishments:*** Provided 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 2016 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 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.	0.203	0.211	0.235
Title: 19) SSA Integrated Architecture	0.240	0.247	0.276

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Modified 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 2016 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 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.			
Title: 20) SSA Enterprise Support and Services ***FY 2015 Accomplishments:*** Supported processes and support services for Cybersecurity/Information Assurance, Architectures, Data, 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 2016 Plans:*** Continue to support processes and services for Architectures, Data, Information Assurance, 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 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.	0.219	0.177	0.197
Title: 21) SSA Chemical, Biological, Radiological, Nuclear (CBRN) Data Model ***FY 2015 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 2016 Plans:***	0.167	0.198	0.221

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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 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.			
Title: 22) SSA Cybersecurity / Information Assurance ***FY 2015 Accomplishments:*** Employed 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 CS/IA component of the Global Information Grid architecture, and makes maximum use of enterprise CS/IA capabilities and services. ***FY 2016 Plans:*** Continue 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.	0.477	0.423	0.509
Title: 23) SSA Policy and Standards Repository ***FY 2015 Accomplishments:*** Provided 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 2016 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. ***FY 2017 Plans:***	0.357	0.355	0.396

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
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 2015 Accomplishments:*** Performed Technology Transition support services (common components and services) for CBD programs. ***FY 2016 Plans:*** Continue 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.	0.351	0.257	0.287
Title: 25) SBIR/STTR ***FY 2016 Plans:*** SBIR/STTR - FY16 - Small Business Innovative Research.	-	0.357	-
Accomplishments/Planned Programs Subtotals	12.277	19.960	27.323

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• IS7: *INFORMATION SYSTEMS (OP SYS DEV)*	4.703	7.703	10.357	-	10.357	12.707	13.219	13.967	13.590	Continuing	Continuing
• G47101: *JOINT WARNING & REPORTING NETWORK (JWARN)*	0.766	0.000	3.889	-	3.889	1.022	0.533	0.479	0.431	Continuing	Continuing
• JC0208: *JOINT EFFECTS MODEL (JEM)*	1.141	3.316	3.069	-	3.069	3.086	3.031	2.728	2.455	Continuing	Continuing
• JS5230: *SOFTWARE SUPPORT ACTIVITY (SSA)*	0.000	0.100	0.300	-	0.300	0.100	0.100	0.090	0.081	Continuing	Continuing

Remarks

D. Acquisition Strategy

BIOSURVEILLANCE PORTAL (BSP)

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

The Biosurveillance Portal (BSP) program will meet the requirements as set forth in the USSOCOM Information Systems Capability Development Document (IS CDD), 19 May 2014. BSP is a new start program in FY16. 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 Interim 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) identified in Requirement Definition Packages (RDPs). Intent is to deliver CDs every three months. Developmental Testing (DT) and end-to-end tests (E2E) will be conducted for each CD and an operational assessment (OA) will be conducted to verify capabilities for each RDP. User Feedback Events (UFEs) will be conducted with identified Users to illicit feedback on developed capabilities and input on required adjustments to address new technologies. Initial Operational Capability (IOC) is targeted for 3QFY16 with 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.

As part of this strategy, JEM program office developed and issued a competitive prototyping contract in April 2013 where two offerers were given the same Technical Data Package (TDP), performance Work Statement (PWS), and software requirements and were tasked to deliver a JEM prototype that implements the CCMI architecture. This competitive prototyping strategy was successful and a single JEM integrator, General Dynamics Information Technology (GDIT), was selected as the prime development contract in December 2013.

The current contractor for JEM 2.0 will provide all capabilities defined in the Requirement Definition Package 1 (RDP-1) document. The JRO will release RDPs-2, 3, and 4 over the next three years prior to contract completion. It is anticipated when the contract is re-competed in FY17 that there will be four of five capability drops not yet developed under RDP-2 and two of five under RDP-3. 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.

The JEM IS ICD describes the notional implementation plan for fielding of future JEM capabilities among five separate JEM Requirement Definition Packages (RDPs). RDP-1 contains the baseline capabilities for software and was approved in June of 2014. Since last report, the numbering scheme for RDPs was rearranged to account for the sequence of approval for each RDP. RDP-2 now defines requirements to integrate baseline capabilities into a version that can be fielded on service

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

C2 systems will be released in RDP-2. RDP-2 will be released following RDP-1 to rapidly allow baseline capabilities to be incorporated into C2 systems. RDP-3 is a notional package that allows the Science and Technology community a venue to use the JEM program to develop a version of the product for S&T and analytical use. Capabilities that are only required for the Science and Technology and analytical communities and not for operational users would be implemented in RDP-3. Capabilities in RDP-3 would not be required to go to Operational Test, as they would not be fielded to operational users. RDP-4 will be released after the completion of RDP-1. This RDP will incorporate emerging capabilities that have reached a sufficient maturity for incorporation into the operationally fielded JEM system, such as ability to model new agents. RDP-5 was added as a mechanism to define requirements for JEM 2.0 through the remainder of its life cycle.

RDP 1 - Baseline Capabilities: There are 5 planned Capability Drops (CD) within RDP 1.
RDP 2 - C2 Integration: There are 8 planned Capability Drops (CD) within RDP 2 tied to all the various Strategic and Service C2 Systems
RDP 3 - Analytical Support: There are 2 planned Capability Drops (CD) within RDP 3.
RDP 4 - Emerging Capabilities: There are 5 planned Capability Drops (CD) within RDP 4.
RDP 5 - Modernization and Sustainment: There are 2 Capability Drops (CD) planned per year through the life of the program.

An over-arching MS B and Build Decision for RDP-1 were approved by the MDA in September 2014. Each subsequent RDP will have an associated Build Decision. 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). The JWARN Program will procure a Sensor Connectivity Capability (SCC) (hardware materiel solution) in order 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: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - SW S - software	Various	TBD : TBD	0.000	0.000		6.954	Mar 2016	8.101	Mar 2017	-		8.101	Continuing	Continuing	0.000
CBRN IS - SW S	MIPR	Various : TBD	0.000	0.000		0.000		2.339	Dec 2016	-		2.339	Continuing	Continuing	0.000
JEM - SW SB - Increment 2 - Hazard Prediction Model Development and Integration	C/CPAF	General Dynamics Information Technologies : Fairfax, VA	5.927	4.594	Apr 2015	1.005	Apr 2016	1.051	Apr 2017	-		1.051	Continuing	Continuing	0.000
JWARN - SW S - Increments 1&2 - Software Development	C/CPAF	Northrop Grumman Corp. : Winter Park, FL	0.000	1.601	Feb 2015	2.609	Feb 2016	3.196	Feb 2017	-		3.196	Continuing	Continuing	0.000
SSA - SW S - CBRN Data Model	C/CPAF	Various : TBD	5.679	0.664	Mar 2015	0.615	Mar 2016	0.687	Mar 2017	-		0.687	Continuing	Continuing	0.000
		Subtotal	11.606	6.859		11.183		15.374		-		15.374	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CBRN IS - ES S	MIPR	Various : TBD	0.000	0.000		0.000		1.300	Dec 2016	-		1.300	Continuing	Continuing	0.000
SSA - ES S - Support Costs	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	7.221	0.616	Dec 2014	0.549	Nov 2015	0.649	Dec 2016	-		0.649	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.357	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	7.221	0.616		0.906		1.949		-		1.949	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - DTE S - Software	MIPR	Various : TBD	0.000	0.000		0.998	Dec 2015	0.984	Mar 2017	-		0.984	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - OTE S - Software - MOT&E	MIPR	Various : TBD	0.000	0.000		1.135	Dec 2015	1.486	Mar 2017	-		1.486	Continuing	Continuing	0.000
CBRN IS - OTE S	MIPR	Various : TBD	0.000	0.000		0.000		1.500	Dec 2016	-		1.500	Continuing	Continuing	0.000
JEM - DTE SB - Increment 2 - Hazard Prediction Model Development Test	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	7.360	1.305	Dec 2014	0.677	Nov 2015	0.656	Dec 2016	-		0.656	Continuing	Continuing	0.000
JEM - OTHT C - Increment 2 - OT&E Hazard Prediction Modeling software	MIPR	Various : TBD	0.000	1.050	Dec 2014	1.037	Nov 2015	0.539	Dec 2016	-		0.539	Continuing	Continuing	0.000
JWARN - DTE S - Increment 2	MIPR	Various : TBD	0.000	0.153	Dec 2014	0.257	Dec 2015	0.329	Dec 2016	-		0.329	Continuing	Continuing	0.000
JWARN - OTE S - Increment 2	MIPR	Various : TBD	0.000	0.462	Dec 2014	0.789	Dec 2015	0.809	Dec 2016	-		0.809	Continuing	Continuing	0.000
SSA - DTE S - Test and Evaluation	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.718	0.477	Dec 2014	0.461	Nov 2015	0.514	Dec 2016	-		0.514	Continuing	Continuing	0.000
		Subtotal	10.078	3.447		5.354		6.817		-		6.817	-	-	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSP - PM/MS S - Program Management	Various	Various : TBD	0.000	0.000		0.867	Dec 2015	1.003	Dec 2016	-		1.003	Continuing	Continuing	0.000
CBRN IS - PM/MS S	MIPR	Various : TBD	0.000	0.000		0.000		0.500	Dec 2016	-		0.500	Continuing	Continuing	0.000
JEM - PM/MS S - Program Office - Planning and Programming	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	5.643	0.747	Dec 2014	0.833	Nov 2015	0.674	Dec 2016	-		0.674	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JWARN - PM/MS C - Increment 2 - Program Management Support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	0.000	0.351	Dec 2014	0.574	Nov 2015	0.735	Dec 2016	-		0.735	Continuing	Continuing	0.000
SSA - PM/MS S - Management Services	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.426	0.257	Dec 2014	0.243	Dec 2015	0.271	Dec 2016	-		0.271	Continuing	Continuing	0.000
		Subtotal	8.069	1.355		2.517		3.183		-		3.183	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.974	12.277		19.960		27.323		-		27.323	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

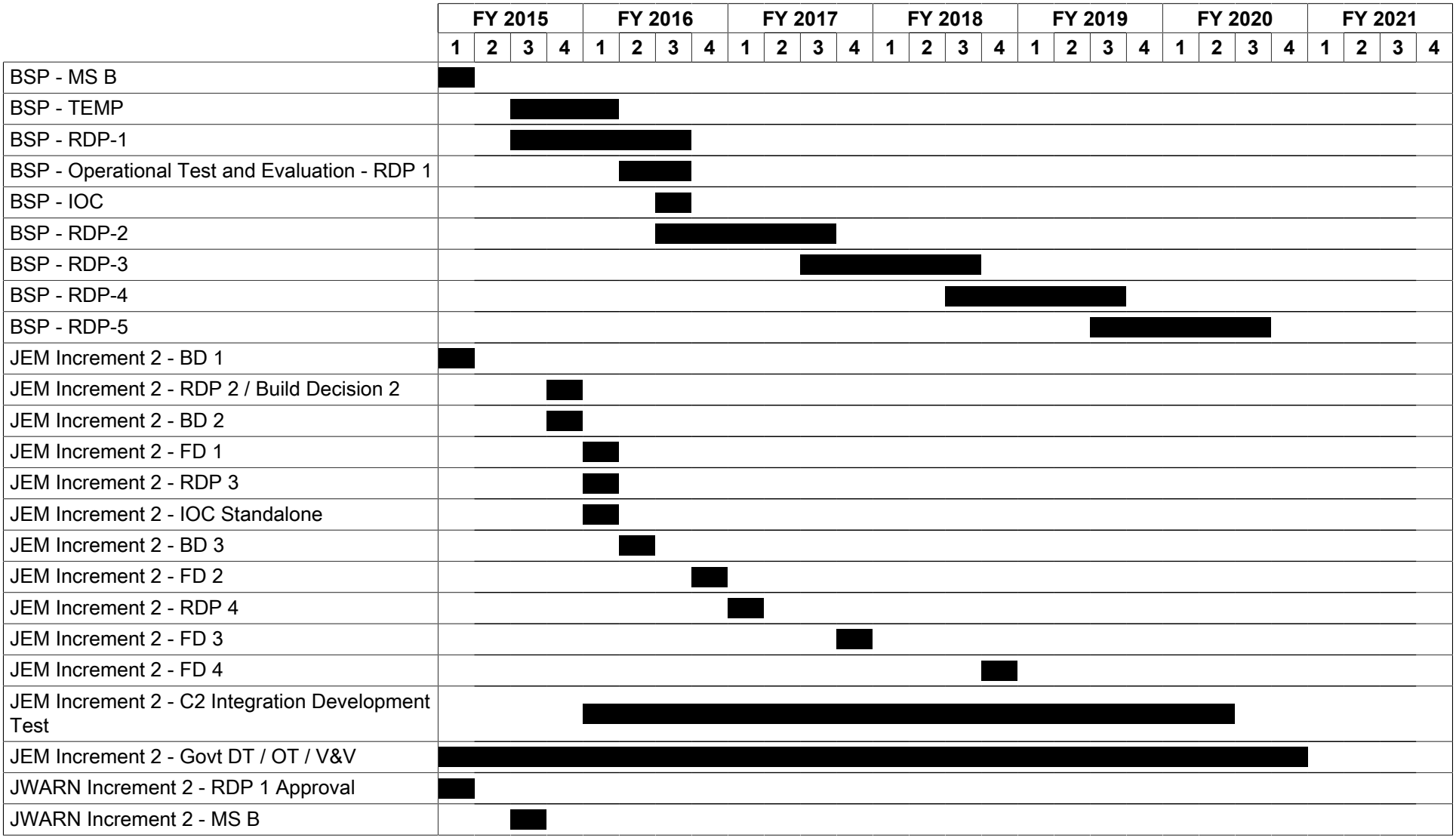

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

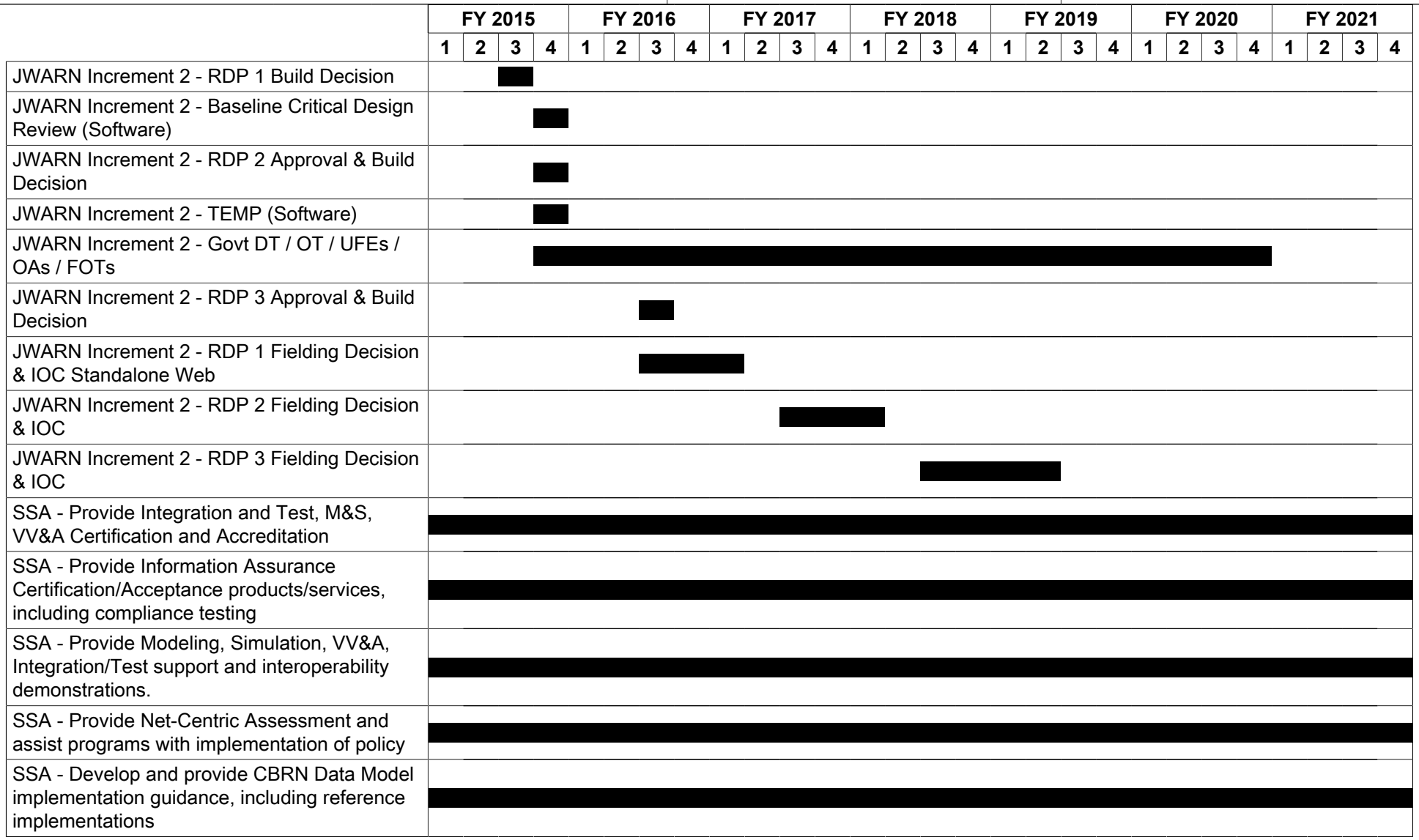

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

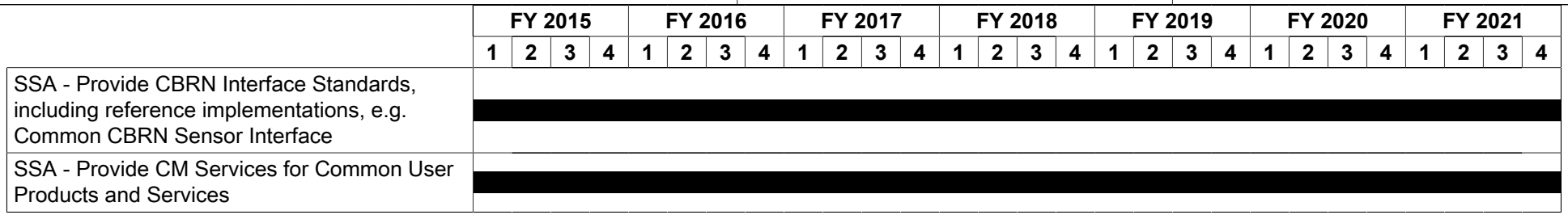

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
BSP - MS B	1	2015	1	2015
BSP - TEMP	3	2015	1	2016
BSP - RDP-1	3	2015	3	2016
BSP - Operational Test and Evaluation - RDP 1	2	2016	3	2016
BSP - IOC	3	2016	3	2016
BSP - RDP-2	3	2016	3	2017
BSP - RDP-3	3	2017	3	2018
BSP - RDP-4	3	2018	3	2019
BSP - RDP-5	3	2019	3	2020
JEM Increment 2 - BD 1	1	2015	1	2015
JEM Increment 2 - RDP 2 / Build Decision 2	4	2015	4	2015
JEM Increment 2 - BD 2	4	2015	4	2015
JEM Increment 2 - FD 1	1	2016	1	2016
JEM Increment 2 - RDP 3	1	2016	1	2016
JEM Increment 2 - IOC Standalone	1	2016	1	2016
JEM Increment 2 - BD 3	2	2016	2	2016
JEM Increment 2 - FD 2	4	2016	4	2016
JEM Increment 2 - RDP 4	1	2017	1	2017
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	2020
JEM Increment 2 - Govt DT / OT / V&V	1	2015	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** IS5 / *INFORMATION SYSTEMS (EMD)*

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
JWARN Increment 2 - RDP 1 Approval	1	2015	1	2015
JWARN Increment 2 - MS B	3	2015	3	2015
JWARN Increment 2 - RDP 1 Build Decision	3	2015	3	2015
JWARN Increment 2 - Baseline Critical Design Review (Software)	4	2015	4	2015
JWARN Increment 2 - RDP 2 Approval & Build Decision	4	2015	4	2015
JWARN Increment 2 - TEMP (Software)	4	2015	4	2015
JWARN Increment 2 - Govt DT / OT / UFEs / OAs / FOTs	4	2015	4	2020
JWARN Increment 2 - RDP 3 Approval & Build Decision	3	2016	3	2016
JWARN Increment 2 - RDP 1 Fielding Decision & IOC Standalone Web	3	2016	1	2017
JWARN Increment 2 - RDP 2 Fielding Decision & IOC	3	2017	1	2018
JWARN Increment 2 - RDP 3 Fielding Decision & IOC	3	2018	2	2019
SSA - Provide Integration and Test, M&S, VV&A Certification and Accreditation	1	2015	4	2021
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing	1	2015	4	2021
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.	1	2015	4	2021
SSA - Provide Net-Centric Assessment and assist programs with implementation of policy	1	2015	4	2021
SSA - Develop and provide CBRN Data Model implementation guidance, including reference implementations	1	2015	4	2021
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface	1	2015	4	2021
SSA - Provide CM Services for Common User Products and Services	1	2015	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
MB5: *MEDICAL BIOLOGICAL DEFENSE (EMD)*	-	169.400	107.883	106.223	-	106.223	170.667	190.756	188.537	181.318	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.

Biosurveillance programs align the biosurveillance efforts across the DoD and national strategies. The BSV program will scope and influence BSV capabilities as products to meet Warfighter requirements through innovative management of key BSV initiative. BSV will also support the Joint US Forces Korea (USFK) Portal and Integrated Threat Recognition (JUPITR) ATD which will find, demonstrate, transition, and transfer the best operational concepts and technology solutions in support of a holistic approach to countering biological threats from laboratory to operational use. Depending on the maturity, outputs will focus on providing component, CONOPS, and subsystem transition into programs of record (PORs) and/or integration into existing PORs. Technologies identified from the JUPITR ATD will be fielded in FY16 to Pacific Command (PACOM). Future ATD developments will continue to bridge communication gaps between US Forces across other Combatant Command (COCOMs). The Biosurveillance (BSV) program will transfer from the Medical Countermeasures (MB) Project to the Contamination Avoidance (CA) Project effective FY 2016.

The Critical Reagents 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 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 drug in development is highly efficacious against multiple influenza viruses, including the 2009 H1N1 pandemic virus, H5N1 avian influenza virus, the most recently identified H7N9 virus from the outbreak in China, and drug resistant strains of influenza viruses. It has also demonstrated efficacy against other viruses of concern to the DoD's biodefense program. FDA approval for an influenza treatment is anticipated following completion of the EMD phase. EID Tx will leverage on going filovirus countermeasure development to demonstrate additional broad-spectrum MCM's against naturally occurring and/or engineered biowarfare threats. To meet the mission need of "one drug, many bugs" EID Tx is testing product efficacy on BWA threats. This will allow the military to leverage a product that will be FDA approved for influenza against other viruses. This work will be funded by the Antiviral Therapeutic programs.

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 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. 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.

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 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.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: 1) AV TX - Candidate 1 (Filovirus TRL 6) ***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: 2) BSV ***FY 2015 Accomplishments:*** Conducted down-select and test planning for the Assessment of Environmental Detector technologies.	9.901	-	-
Title: 3) BSV ***FY 2015 Accomplishments:*** Executed studies and initiatives to address biosurveillance capability needs across the CBRN program in alignment with DoD and National Strategies.	3.167	-	-
Title: 4) CRP ***FY 2015 Accomplishments:*** Continued development/expansion of biological select agents reference materials to known and emerging threats. ***FY 2016 Plans:*** Continue 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.	2.438	1.918	1.753
Title: 5) CRP ***FY 2015 Accomplishments:*** Continued development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems. ***FY 2016 Plans:***	1.290	1.370	1.514

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue 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.			
Title: 6) CRP ***FY 2015 Accomplishments:*** Continued QA/QC testing to encompass the transition and fielding of biological detection assays. ***FY 2016 Plans:*** Continue 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.	0.770	0.865	0.745
Title: 7) CRP ***FY 2015 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 2016 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. ***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.	0.990	1.064	1.251
Title: 8) CRP ***FY 2015 Accomplishments:*** Continued development of prototypes/information for strains contained in Unified Culture Collection. ***FY 2016 Plans:*** Continue 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.	2.084	1.653	1.894
Title: 9) DFAS EFD ADJUSTMENT	0.696	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2015 Accomplishments: Adjustment to balance to DFAS financial reporting within OSD. This is solely an accounting transaction.			
Title: 10) EID TX ***FY 2015 Accomplishments:*** Completed FDA required Phase 3 global Clinical trials in support of influenza indication.	36.100	-	-
Title: 11) EID TX ***FY 2015 Accomplishments:*** Continued analysis of data for all FDA required clinical trials, including the 1,716 patient Phase 3 clinical study. Developed FDA clinical study reports. ***FY 2016 Plans:*** Complete analysis of data for all FDA required clinical trials, including the 1,716 patient Phase 3 clinical study. Develop and deliver FDA clinical study reports.	8.871	15.430	-
Title: 12) EID TX ***FY 2015 Accomplishments:*** Prepared NDA submission for FDA review and approval. ***FY 2016 Plans:*** Deliver NDA for FDA approval, and answer any FDA questions. ***FY 2017 Plans:*** Submit influenza product and gain FDA approval.	4.865	1.231	3.856
Title: 13) EID TX ***Description:*** NOTE: Effort transitions to the Anti-Viral program (AV TX) in FY17. ***FY 2016 Plans:*** Initiate Dose Range and Response studies using Non-Human Primates (NHPs) in support of FDA approval for EID Tx-NI (New Indications) for Bio-Warfare Agent (BWA) threats using the animal rule.	-	3.920	-
Title: 14) EID TX ***Description:*** NOTE: Effort transitions to the Anti-Viral program (AV TX) in FY17. ***FY 2016 Plans:***	-	1.639	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Initiate Delay Time to Treat studies using 72 NHPs in support of FDA approval for EID Tx-NI BWA threats using the animal rule.			
Title: 15) EID TX ***FY 2015 Accomplishments:*** Produced manufacturing registration batches.	14.748	-	-
Title: 16) HFV ***Description:*** Ebola Medical Countermeasure NOTE: Effort transitions to the Anti-Viral (AV TX) program in FY17. ***FY 2015 Accomplishments:*** Completed Phase I clinical safety trials. Manufactured Ebola countermeasure to supply Phase 2 and 3 clinical trials under GMP conditions. ***FY 2016 Plans:*** Continue pivotal animal efficacy studies via aerosol and parenteral routes of challenge in non-human primates. Continue Phase 2 clinical trials.	26.288	18.994	-
Title: 17) HFV ***Description:*** NOTE: Effort transitions to the Anti-Viral program (AV TX) in FY17. ***FY 2016 Plans:*** Continue studies to further characterize the therapeutic window of the Ebola MCM under Good Laboratory Practice (GLP) conditions in a Biological Safety Level (BSL) 4.	-	13.431	-
Title: 18) HFV ***Description:*** Title X - Ebola Response ***FY 2015 Accomplishments:*** Developed protocol to conduct Phase 2 clinical trials for Africa for TEKMIRA (TKM-Ebola). Completed regulatory filing process in order to support new Investigational Drug Application.	9.834	-	-
Title: 19) DFAS EFD ADJUSTMENT ***FY 2015 Accomplishments:*** Adjustment to balance to DFAS financial reporting within OSD. This is solely an accounting transaction.	6.500	-	-
Title: 20) NGDS - Increment 2	-	3.600	1.600

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
FY 2016 Plans: Initiate clinical trials for CBR multiplex lateral flow immunoassays ***FY 2017 Plans:*** Continue clinical trials for CBR multiplex lateral flow immunoassays			
Title: 21) NGDS - Increment 2 ***FY 2016 Plans:*** Purchase lateral flow immunoassays to support clinical trials. ***FY 2017 Plans:*** Purchase lateral flow immunoassays to support clinical trials.	-	0.400	0.400
Title: 22) NGDS - Increment 2 ***FY 2016 Plans:*** Initiate system development and demonstration for CBR NGDS Increment 2 diagnostic platform instrument. ***FY 2017 Plans:*** Continue system development and demonstration for CBR NGDS Increment 2 diagnostic platform instrument.	-	3.855	7.971
Title: 23) NGDS - Increment 2 ***FY 2017 Plans:*** Initiate clinical efforts to expand Test-mate diagnostic capability for Chemical agent threats.	-	-	2.200
Title: 24) VAC BOT - Recombinant Botulinum Vaccine ***Description:*** Manufacturing Technology Transfer ***FY 2015 Accomplishments:*** Initiated technology transfer of the manufacturing process for serotype A & B; conducted process development work for both manufacturing process at the new Contract Manufacturing Organization (CMO) facility; performed three successful manufacturing feasibility runs of the serotype B manufacturing process at new CMO. ***FY 2016 Plans:*** Execute the manufacturing of serotypes A engineering and cGMP lots at the new CMO. ***FY 2017 Plans:***	8.948	7.964	4.000

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Complete the cGMP runs for the serotype B manufacturing process; complete the Process Performance Qualification (PPQ) manufacturing runs for both serotypes; perform drug product fill-finish of drug substance in preparation for Phase 3 clinical trial.			
Title: 25) VAC BOT - Recombinant Botulinum Vaccine ***Description:*** Manufacturing/Analytical Technology Transfer ***FY 2015 Accomplishments:*** Conducted analytical technology transfer of the manufacturing process assays (in-process, release, and stability testing) that will be utilized for demonstration of drug substance comparability at the new CMO and submit comparability plan to the FDA. ***FY 2016 Plans:*** Continue non-clinical comparability studies to bridge newly manufactured drug substance and product that was made at the previous CMO prior to technology transfer; submit comparability protocol to the FDA. Continue to monitor requirements for safeguarding biological select agents and toxins. Initiate efforts for the development of the Chemistry Manufacturing and Controls (CMC) submission to the FDA. ***FY 2017 Plans:*** Continue drug substance comparability efforts.	6.115	6.232	2.652
Title: 26) VAC BOT ***Description:*** Program Management ***FY 2015 Accomplishments:*** Continued to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. ***FY 2016 Plans:*** Continue 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.	3.000	2.274	2.000
Title: 27) DFAS EFD ADJUSTMENT ***FY 2015 Accomplishments:***	2.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Adjustment to balance to DFAS financial reporting within OSD. This is solely an accounting transaction.			
Title: 28) VAC FILO ***FY 2017 Plans:*** Initiate process development and manufacturing scale up.	-	-	4.300
Title: 29) VAC FILO ***FY 2017 Plans:*** Initiate nonclinical testing and assay qualification.	-	-	2.052
Title: 30) VAC PLG ***FY 2015 Accomplishments:*** Continued animal efficacy studies (mouse vaccine booster efficacy and duration study and low dose exposure macaque study). Initiated and completed the pivotal animal efficacy study design. ***FY 2016 Plans:*** Complete 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. Continue ongoing requirements for safeguarding biological select agents and toxins.	4.200	6.682	9.348
Title: 31) VAC PLG ***FY 2015 Accomplishments:*** Initiated and completed the FDA-required Phase 3 human clinical trial design. Initiated Fill/Finish operations to complete manufacturing of Drug Product consistency lots. ***FY 2016 Plans:*** Complete 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.	3.864	3.798	24.212
Title: 32) VAC PLG ***FY 2015 Accomplishments:***	2.000	1.500	9.586

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Prepared and submitted Protective Capacity Assay results to the FDA for guidance and approval. Continued to prepare formal regulatory submissions to the FDA that document the ability to consistently manufacture drug substance and drug product. ***FY 2016 Plans:*** Complete 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.			
Title: 33) VAC PLG ***FY 2015 Accomplishments:*** Continued to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. ***FY 2016 Plans:*** Continue 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.	7.350	5.200	3.304
Title: 34) DFAS EFD ADJUSTMENT ***FY 2015 Accomplishments:*** Adjustment to balance to DFAS financial reporting within OSD. This is solely an accounting transaction.	1.800	-	-
Title: 35) VAC SIP ***FY 2015 Accomplishments:*** Continued storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. ***FY 2016 Plans:*** Continue storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. ***FY 2017 Plans:***	1.581	2.722	2.688

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program.			
Title: 36) SBIR/STTR	-	2.141	-
FY 2016 Plans: SBIR/STTR - FY16 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	169.400	107.883	106.223

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• MB7: *MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)*	13.186	11.801	7.145	-	7.145	9.575	16.516	13.931	13.338	Continuing	Continuing
• JM8788: *NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)*	12.518	5.300	7.395	-	7.395	10.618	13.493	10.465	13.618	Continuing	Continuing
• JX0005: *DOD BIOLOGICAL VACCINE PROCUREMENT (VACCINES)*	0.185	0.185	0.185	-	0.185	0.185	0.185	13.048	0.185	Continuing	Continuing
• JX0210: *CRITICAL REAGENTS PROGRAM (CRP)*	1.553	1.005	1.005	-	1.005	1.005	1.005	1.005	0.905	Continuing	Continuing

Remarks

D. Acquisition Strategy

ANTI-VIRAL THERAPEUTICS (AV TX)

The acquisition strategy combines the HFV and EID TX Program efforts beginning in FY17, into a single funding line 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 will be conducted targeting award in FY16. Candidates selected for entry into the EMD phase of development will be initiated in FY16 as part of the HFV program, and continued 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

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

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.

BIOSURVEILLANCE (BSV)

BSV is a set of capabilities that acquire, integrate, and analyze medical, environmental, and incident management data using existing and next generation systems, medical and non-medical sample collection tools and identifiers/diagnostics; and transition hardware/software tools and devices as residuals from the Biosurveillance Joint United States Force Korea (USFK) Portal and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD). Prototype family of systems will be released to Busan Pier 8 and Camp Humphreys with a two year paid sustainment. Lessons learned, technologies, concepts of employment from the ATD will be transitioned to the programs of record associated with the CBDP (such as G-BSP, NGDS, JBTDS & CALS). The acquisition strategy will address the materiel solutions identified out of the multiple Biosurveillance (BSV) related Analysis of Alternatives (AoA's).

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.

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. NDA submission is expected in 4QFY16 with approval in FY17, and all remaining FY16/17 funds will support the influenza effort. In 3QFY16, the EID program will continue its strategy of leveraging broad spectrum therapeutics against new BW viral indications. The program will leverage on-going development to demonstrate additional broad-spectrum MCM's against naturally occurring and/or engineered biowarfare threats. The program will conduct human clinical safety studies, definitive animal efficacy, toxicology studies, and manufacturing scale up and optimization, as required for FDA approval. The performer will submit New Drug Applications/ Biologic License Agreements for the therapeutic 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, it will be conducted during Production and Deployment. This work will be funded by the Antiviral Therapeutic programs.

HEMORRHAGIC FEVER VIRUS (HFV)

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

The acquisition strategy uses an evaluation of a drug candidate against the lethal Ebola Zaire viruses. Following a successful Milestone B and entry into EMD phase, the program will conduct expanded human clinical safety studies, definitive animal efficacy, and toxicology studies, required for FDA approval. The performer will submit a New Drug Application for the Ebola Zaire therapeutic 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.

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. NGDS Increment 2 will complement NGDS Increment 1 by developing diagnostic capabilities for biological pathogens and toxins and address diagnostics for chemical and radiological exposures, and to provide capability to lower echelons of care.

NGDS Increment 2 will conduct technology development FY14-FY16 prior to MS B. The acquisition strategy and capability to be developed will be informed by the results of the Analysis of Alternatives to be completed 4QFY14. NGDS Increment 2 is intended to be complementary to NGDS Increment 1 to expand the breadth and depth of diagnostics to CBR threats, pre-symptomatic diagnostics, and far forward echelons of care.

The MB7 program will support development, testing, and FDA approval of additional assays after system fielding.

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)

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

The acquisition strategy supports the development of multiple filovirus vaccine prototypes through the Technology Maturation and Risk Reduction (TMRR) Phase. At Milestone B (MS B), the best prototype will be selected through a full and open competition to transition to the Engineering and Manufacturing Development (EMD) Phase with the delivery of an FDA licensed filovirus vaccine that will protect against multiple filoviruses. It is anticipated that the development contracts 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 U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID). Following a successful MS B, the program will conduct manufacturing scale up, expanded clinical and nonclinical testing, and assay qualification and validation efforts. These efforts will support Biological Licensure Application (BLA) submission to the FDA and licensure of a filovirus 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. Currently, the Phase 3 clinical trial has been delayed about 12-14 months due to new guidance from the FDA that all documentation concerning vaccine production (large scale engineering and consistency lot manufacturing) and formulation and Fill/Finish (vialing) must be completed and approved prior to the start of the Phase 3 clinical trial. This was normally done concurrently with the Phase 3 clinical trial.

SPECIAL IMMUNIZATION PROGRAM (VAC SIP)

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.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AV TX - Candidate 1 - Complete Pivotal Animal Efficacy Studies	C/CPAF	TBD : TBD	0.000	0.000		0.000		8.626	Jan 2017	-		8.626	Continuing	Continuing	0.000
AV TX - Candidate 1 - Manufacturing Process Optimization and Scale up	C/CPIF	TBD : TBD	0.000	0.000		0.000		6.059	Jan 2017	-		6.059	Continuing	Continuing	0.000
BSV - HW S - HW S - Purchase COTS Detectors for JUPITR Assessment Env. Detectors	MIPR	Defense Technical Information Center (DTIC) : Fort Belvoir, VA	0.000	2.200	Jul 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - HW S - HW S - Purchase COTS Detectors for JUPITR Assessment Env. Detectors #2	C/CPIF	Leidos : Abingdon, MD	0.000	1.340	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - HW S -HW S - Purchase COTS Detectors for JUPITR Assessment Env. Detectors	MIPR	Defense Logistics Agency : Philadelphia, PA	0.000	1.400	Apr 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CRP - HW C - Scale-up of Select Biological Threat Agent Reference Materials	MIPR	Various : TBD	14.290	1.779	Jun 2015	2.015	Jun 2016	2.521	Jun 2017	-		2.521	Continuing	Continuing	0.000
CRP - HW C - Development of Select Biological Threat Agent Reference Materials and Assays	MIPR	Various : TBD	10.427	1.580	Jun 2015	1.195	Jun 2016	1.686	Jan 2017	-		1.686	Continuing	Continuing	0.000
EID TX - SW SB - TMT EID FLU	C/CPFF	MediVector Inc. : Boston, MA	145.815	58.087	Dec 2014	8.955	Dec 2015	2.932	Dec 2016	-		2.932	Continuing	Continuing	0.000
EID TX - SW GFPR - T705 Broad Spectrum Capability Development	C/CPIF	TBD : TBD	0.000	0.000		7.800	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
HFV - HW S - Pivotal Animal Efficacy Studies	C/CPIF	Tekmira Pharmaceuticals	2.500	17.567	Jan 2015	13.121	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Corp. : Vancouver British Columbia, CN													
HFV - HW S - OGA Marburg Development	MIPR	Various : TBD	0.000	0.000		3.002	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000
HFV - HW S - Ebola Response Phase 2 clinical trials for TKM-Ebola targeting Guinea Variant	C/CPIF	Tekmira Pharmaceuticals Corp. : Vancouver British Columbia, CN	0.000	9.834	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGDS - HW C - Complete assay optimization for multiplex lateral flow immunoassay to support clinical trials	C/CPFF	TBD : TBD	0.000	0.000		3.355	Jun 2016	2.000	Dec 2016	-		2.000	Continuing	Continuing	0.000
NGDS - HW C - Develop Diagnostic Platform	C/CPFF	TBD : TBD	0.000	0.000		0.000		5.518	Dec 2016	-		5.518	Continuing	Continuing	0.000
VAC BOT - HW S - Manufacturing, Validation and Consistency Lot Production	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	5.115	1.455	Dec 2014	1.400	Dec 2015	2.000	Dec 2016	-		2.000	Continuing	Continuing	0.000
VAC BOT - HW S - Manufacturing Tech Transfer	MIPR	Battelle Memorial Institute : Columbus, OH	5.686	3.503	Dec 2014	3.146	Jan 2016	2.000	Jan 2017	-		2.000	Continuing	Continuing	0.000
VAC FILO - HW S - Manufacturing Scale Up	Various	TBD : TBD	0.000	0.000		0.000		4.300	Dec 2016	-		4.300	Continuing	Continuing	0.000
VAC FILO - HW S - Nonclinical & Assay Development	Various	TBD : TBD	0.000	0.000		0.000		2.052	Dec 2016	-		2.052	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	0.000		3.400	Dec 2015	14.638	Dec 2016	-		14.638	Continuing	Continuing	0.000
		Subtotal	191.688	98.745		47.389		54.332		-		54.332	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSV - ES S - System Engineering	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	1.300	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - ES S - OTA/OGA Representatives	MIPR	Various : TBD	0.000	1.200	Nov 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - ES S - Special Studies and Support	PO	Various : TBD	0.000	0.900	Sep 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CRP - ES C - Select Biological Threat Agent Reference Material Support	MIPR	Various : TBD	3.886	0.928	Jun 2015	0.785	Jun 2016	0.800	Jan 2017	-		0.800	Continuing	Continuing	0.000
CRP - ES C - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	1.525	0.408	Jun 2015	0.318	Jun 2016	0.350	Jun 2017	-		0.350	Continuing	Continuing	0.000
NGDS - ES C - Studies and WIPT Support	MIPR	Various : TBD	0.000	0.000		0.350	Jun 2016	0.971	Dec 2016	-		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	16.123	2.001	Dec 2014	3.000	Dec 2015	1.208	Dec 2016	-		1.208	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	16.123	2.000	Dec 2014	1.500	Dec 2015	1.600	Dec 2016	-		1.600	Continuing	Continuing	0.000
VAC SIP - Storage and Distribution of Vaccines	SS/FP	Fisher BioServices : Rockville, MD	0.326	0.314	Dec 2014	0.350	Dec 2015	0.370	Dec 2016	-		0.370	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		2.141	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	37.983	9.051		8.444		5.299		-		5.299	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BSV - DTE S - Developmental Testing	MIPR	Defense Technical Information Center (DTIC) : Fort Belvoir, VA	0.000	1.300	Sep 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - DTE S - Government Test Center	MIPR	Various : TBD	0.000	1.750	Oct 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
HFV - OTHT C - BSL4 Non-Clinical Animal Efficacy Studies	C/CPIF	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.000	0.000		7.710	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - OTHT C - Test and evaluate interagency	MIPR	TBD : TBD	0.000	0.000		2.668	Jun 2016	0.000		-		0.000	Continuing	Continuing	0.000
NGDS - OTHT C - Evaluate Test Mate	MIPR	TBD : TBD	0.000	0.000		0.000		2.200	Dec 2016	-		2.200	Continuing	Continuing	0.000
VAC BOT - DTE C - Clinical Trials - Nonclinical Studies	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	67.099	5.811	Dec 2014	4.150	Dec 2015	2.500	Dec 2016	-		2.500	Continuing	Continuing	0.000
VAC PLG - DTE C - Clinical Trials/Non-Clinical Studies	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	67.765	13.214	Dec 2014	7.980	Dec 2015	24.212	Dec 2016	-		24.212	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	6.001	0.987	Dec 2014	2.087	Dec 2015	2.028	Dec 2016	-		2.028	Continuing	Continuing	0.000
		Subtotal	140.865	23.062		24.595		30.940		-		30.940	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AV TX - PM/MS - SB - Candidate 1 - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.314	Jan 2017	-		1.314	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		0.000		1.001	Jan 2017	-		1.001	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		0.000		0.577	Jan 2017	-		0.577	Continuing	Continuing	0.000
AV TX - PM/MS - SB - Candidate 1 - Management Support #4	C/FP	Various : TBD	0.000	0.000		0.000		1.320	Jan 2017	-		1.320	Continuing	Continuing	0.000
BSV - PM/MS S - Management Support to Commercial Off the Shelf AED as part of JUPITR ATD	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.400	0.830	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - PM/MS SB - Program Management Support	MIPR	Various : TBD	0.000	0.848	Dec 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CRP - PM/MS C - Product Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	2.839	0.897	Mar 2015	0.755	Mar 2016	0.800	Jan 2017	-		0.800	Continuing	Continuing	0.000
CRP - PM/MS C - Product Management Support #2	SS/FFP	Goldbelt Raven LLC. : Frederick, MD	8.080	1.543	Jun 2015	1.384	Jun 2016	1.000	Jan 2017	-		1.000	Continuing	Continuing	0.000
CRP - PM/MS C - Chemical and Biological Medical Systems Office	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.893	0.437	Jun 2015	0.418	Jun 2016	0.000		-		0.000	Continuing	Continuing	0.000
CRP - DFAS EFD Adjustment	Various	TBD : TBD	0.000	0.696		0.000		0.000		-		0.000	Continuing	Continuing	0.000
EID TX - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	2.507	1.517	Jan 2015	1.398	Jan 2016	0.610	Jan 2017	-		0.610	Continuing	Continuing	0.000
EID TX - PM/MS SB - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	3.536	2.097	Jan 2015	2.160	Jan 2016	0.083	Jan 2017	-		0.083	Continuing	Continuing	0.000
EID TX - PM/MS SB - Management Support #3	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.914	0.578	Sep 2015	0.533	Sep 2016	0.037	Jan 2017	-		0.037	Continuing	Continuing	0.000
EID TX - PM/MS C - Contractor Systems Engineering/ Program Management Support	C/FP	TAURI GROUP LLC THE : Alexandria, VA	4.778	1.129	Dec 2014	1.162	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
EID TX - PM/MS C - Contractor Systems	C/FP	Various : TBD	2.030	1.176	Aug 2015	0.212	Aug 2016	0.194	Dec 2016	-		0.194	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering/ Program Management Support #2															
HFV - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	2.001	Sep 2015	2.268	Sep 2016	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	0.000	0.793	Sep 2015	0.864	Sep 2016	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	0.965	0.994	Jan 2015	0.787	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000
HFV - PM/MS C - Contractor Systems Engineering/ Program Management Support	C/FP	Various : TBD	0.553	0.728	Aug 2015	0.698	Aug 2016	0.000		-		0.000	Continuing	Continuing	0.000
HFV - PM/MS C - Contractor Systems Engineering/ Program Management Support #2	C/FP	Patricio Enterprises : Inc., Woodbridge, VA	1.364	1.756	Aug 2015	1.660	Aug 2016	0.000		-		0.000	Continuing	Continuing	0.000
HFV - PM/MS C - Contractor/ Systems Engineering/ Program Management Support	C/FP	Noblis Inc. : Falls Church, VA	0.970	1.247	Aug 2015	1.177	Aug 2016	0.000		-		0.000	Continuing	Continuing	0.000
HFV - PM/MS C - Contractor Systems Engineering/ Program Management Support #3	C/FP	TASC : INC., Andover, MA	0.931	1.202	Aug 2015	1.138	Aug 2016	0.000		-		0.000	Continuing	Continuing	0.000
HFV - DFAS EFD Adjustment	Various	TBD : TBD	0.000	6.500		0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGDS - PM/MS S - Product Management Support	Allot	TBD : TBD	0.000	0.000		0.732	Dec 2015	0.732	Dec 2016	-		0.732	Continuing	Continuing	0.000
NGDS - PM/MS SB - Product Management Systems Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.750	Jun 2016	0.750	Dec 2016	-		0.750	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	10.234	3.000	Dec 2014	2.500	Dec 2015	0.944	Dec 2016	-		0.944	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	53.480	2.293	Dec 2014	2.274	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
VAC BOT - DFAS EFD Adjustment	Various	TBD : TBD	0.000	2.000		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	15.736	2.200	Dec 2014	1.700	Dec 2015	6.000	Dec 2016	-		6.000	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	0.000	Dec 2014	2.600	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
VAC PLG - DFAS EFD Adjustment	Various	TBD : TBD	0.000	1.800		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	0.744	0.280	Mar 2015	0.285	Mar 2016	0.290	Mar 2017	-		0.290	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	147.944	38.542		27.455		15.652		-		15.652	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	518.480	169.400		107.883		106.223		-		106.223	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

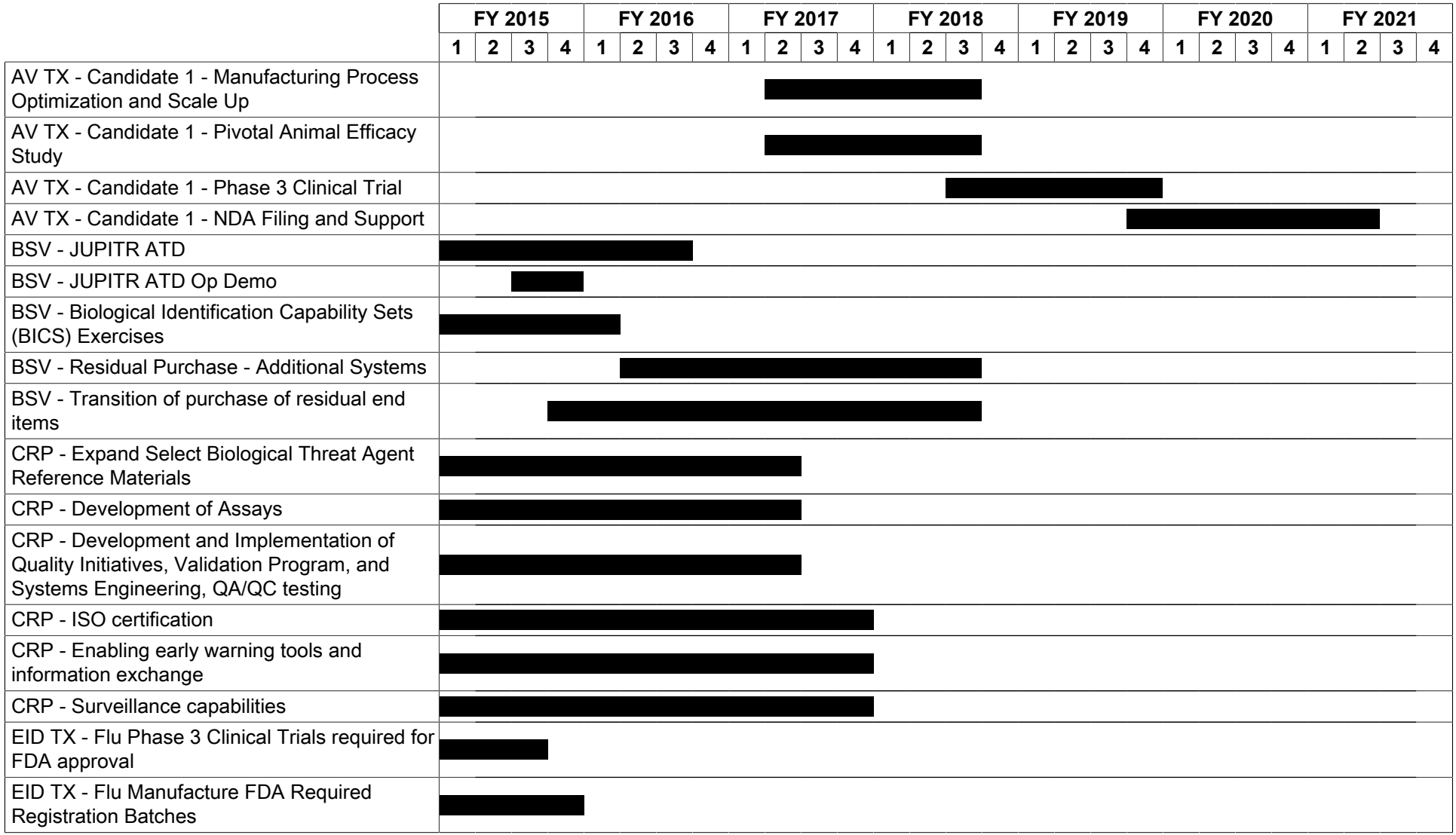

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

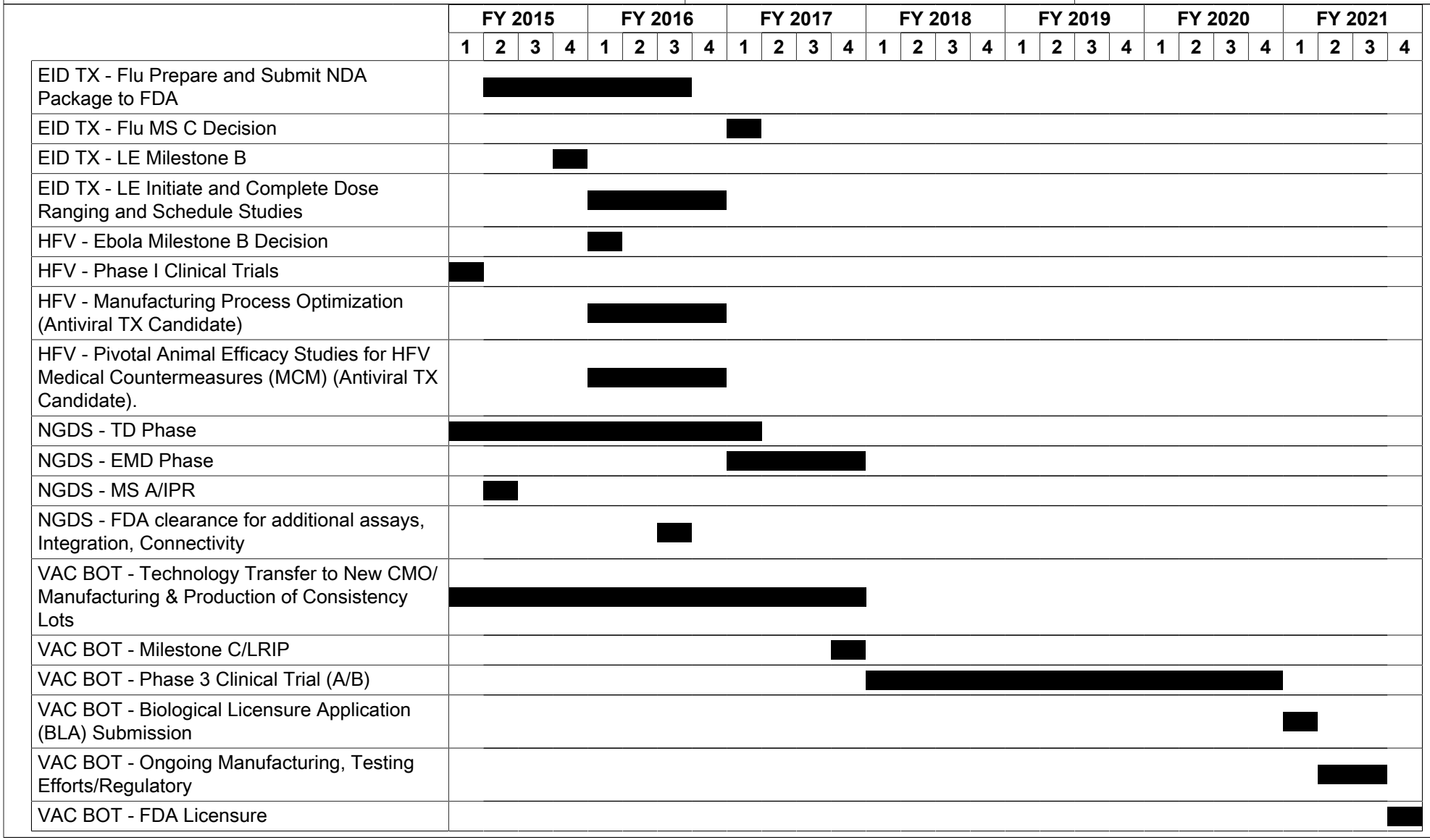

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

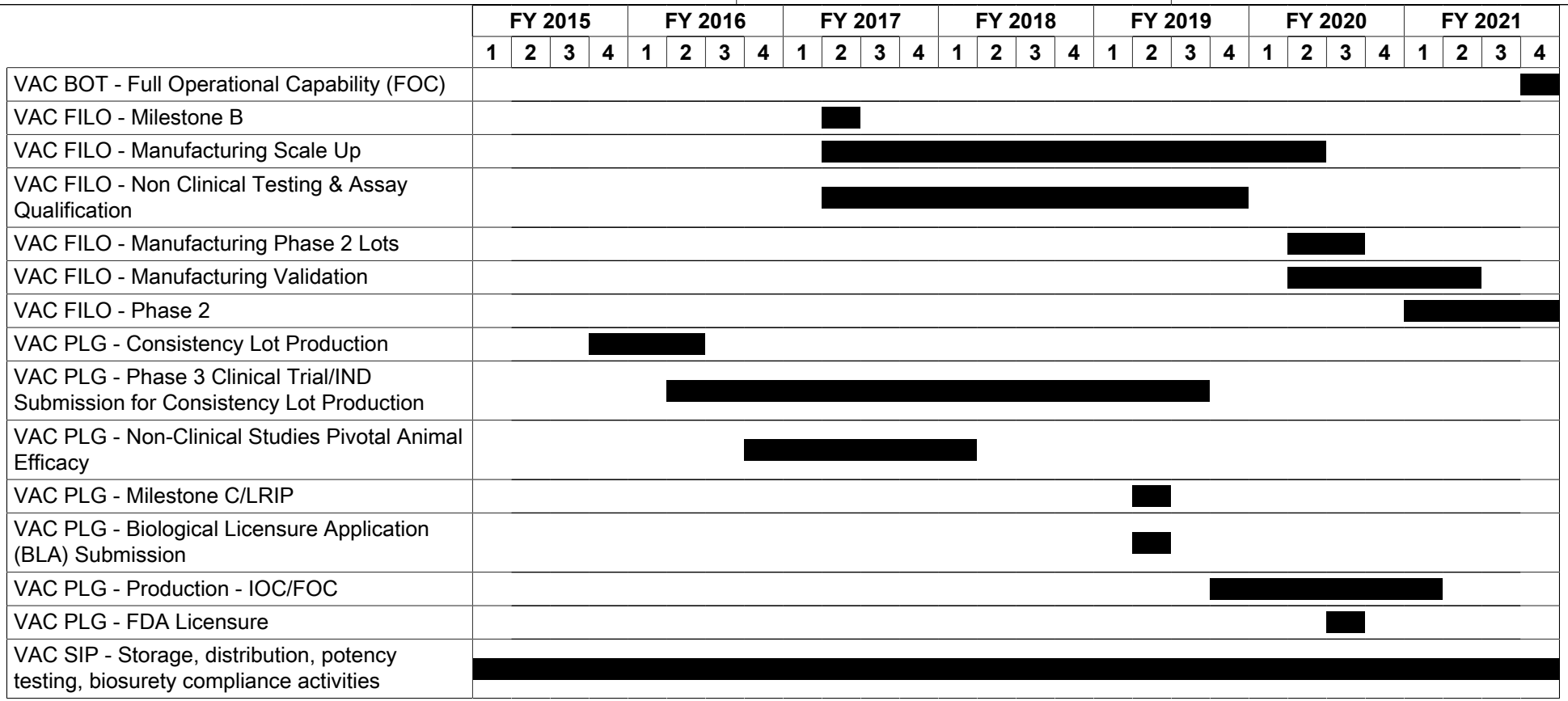

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MB5 / *MEDICAL BIOLOGICAL DEFENSE (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AV TX - Candidate 1 - Manufacturing Process Optimization and Scale Up	2	2017	3	2018
AV TX - Candidate 1 - Pivotal Animal Efficacy Study	2	2017	3	2018
AV TX - Candidate 1 - Phase 3 Clinical Trial	3	2018	4	2019
AV TX - Candidate 1 - NDA Filing and Support	4	2019	2	2021
BSV - JUPITR ATD	1	2015	3	2016
BSV - JUPITR ATD Op Demo	3	2015	4	2015
BSV - Biological Identification Capability Sets (BICS) Exercises	1	2015	1	2016
BSV - Residual Purchase - Additional Systems	2	2016	3	2018
BSV - Transition of purchase of residual end items	4	2015	3	2018
CRP - Expand Select Biological Threat Agent Reference Materials	1	2015	2	2017
CRP - Development of Assays	1	2015	2	2017
CRP - Development and Implementation of Quality Initiatives, Validation Program, and Systems Engineering, QA/QC testing	1	2015	2	2017
CRP - ISO certification	1	2015	4	2017
CRP - Enabling early warning tools and information exchange	1	2015	4	2017
CRP - Surveillance capabilities	1	2015	4	2017
EID TX - Flu Phase 3 Clinical Trials required for FDA approval	1	2015	3	2015
EID TX - Flu Manufacture FDA Required Registration Batches	1	2015	4	2015
EID TX - Flu Prepare and Submit NDA Package to FDA	2	2015	3	2016
EID TX - Flu MS C Decision	1	2017	1	2017
EID TX - LE Milestone B	4	2015	4	2015
EID TX - LE Initiate and Complete Dose Ranging and Schedule Studies	1	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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**
HFV - Ebola Milestone B Decision	1	2016	1	2016
HFV - Phase I Clinical Trials	1	2015	1	2015
HFV - Manufacturing Process Optimization (Antiviral TX Candidate)	1	2016	4	2016
HFV - Pivotal Animal Efficacy Studies for HFV Medical Countermeasures (MCM) (Antiviral TX Candidate).	1	2016	4	2016
NGDS - TD Phase	1	2015	1	2017
NGDS - EMD Phase	1	2017	4	2017
NGDS - MS A/IPR	2	2015	2	2015
NGDS - FDA clearance for additional assays, Integration, Connectivity	3	2016	3	2016
VAC BOT - Technology Transfer to New CMO/Manufacturing & Production of Consistency Lots	1	2015	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	2	2021	3	2021
VAC BOT - FDA Licensure	4	2021	4	2021
VAC BOT - Full Operational Capability (FOC)	4	2021	4	2021
VAC FILO - Milestone B	2	2017	2	2017
VAC FILO - Manufacturing Scale Up	2	2017	2	2020
VAC FILO - Non Clinical Testing & Assay Qualification	2	2017	4	2019
VAC FILO - Manufacturing Phase 2 Lots	2	2020	3	2020
VAC FILO - Manufacturing Validation	2	2020	2	2021
VAC FILO - Phase 2	1	2021	4	2021
VAC PLG - Consistency Lot Production	4	2015	2	2016
VAC PLG - Phase 3 Clinical Trial/IND Submission for Consistency Lot Production	2	2016	3	2019
VAC PLG - Non-Clinical Studies Pivotal Animal Efficacy	4	2016	1	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 - Milestone C/LRIP	2	2019	2	2019
VAC PLG - Biological Licensure Application (BLA) Submission	2	2019	2	2019
VAC PLG - Production - IOC/FOC	4	2019	1	2021
VAC PLG - FDA Licensure	3	2020	3	2020
VAC SIP - Storage, distribution, potency testing, biosurety compliance activities	1	2015	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
MC5: *MEDICAL CHEMICAL DEFENSE (EMD)*	-	25.966	42.911	39.504	-	39.504	44.656	25.358	11.155	4.855	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 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.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: 1) AUTOINJ ***FY 2017 Plans:*** Initiate manufacturing of autoinjector consistency lots.	-	-	2.950
Title: 2) AUTOINJ ***FY 2017 Plans:*** Initiate storage stability and bioequivalency testing.	-	-	1.980
Title: 3) AUTOINJ ***FY 2017 Plans:*** Coordinate New Drug Application meetings with the FDA.	-	-	0.218
Title: 4) AAS ***FY 2015 Accomplishments:***	4.000	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Completed market research of alternative autoinjector manufacturers and reverse engineering of the currently fielded autoinjector.			
Title: 5) BSCAV ***FY 2015 Accomplishments:*** Complete commissioning and qualification of the manufacturing suite.	9.395	-	-
Title: 6) BSCAV ***FY 2015 Accomplishments:*** Initiated and completed evaluation and optimization of alternative source materials at small and intermediate scales.	6.191	-	-
Title: 7) BSCAV ***FY 2015 Accomplishments:*** Continued storage and stability testing of purified product. ***FY 2016 Plans:*** Continue storage and stability testing of purified product.	2.000	2.050	-
Title: 8) BSCAV ***FY 2015 Accomplishments:*** Initiated engineering and scale-up manufacturing runs. ***FY 2016 Plans:*** Complete engineering and scale-up manufacturing runs.	1.050	5.000	-
Title: 9) BSCAV ***FY 2016 Plans:*** Initiated pilot nonclinical toxicity and pharmacokinetic (PK) and efficacy studies. ***FY 2017 Plans:*** Complete pilot nonclinical toxicity and pharmacokinetic (PK) and efficacy studies.	-	5.195	6.018
Title: 10) BSCAV ***FY 2016 Plans:*** Initiate cGMP manufacturing for clinical and nonclinical studies. ***FY 2017 Plans:***	-	6.543	8.100

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Continue cGMP manufacturing for clinical and nonclinical studies.			
Title: 11) BSCAV ***FY 2016 Plans:*** Initiate phase 1 clinical pharmacokinetic (PK) and safety studies. ***FY 2017 Plans:*** Complete phase 1 clinical pharmacokinetic (PK) and safety studies.	-	6.706	3.100
Title: 12) BSCAV ***FY 2016 Plans:*** Initiate Phase 2 clinical and safety studies. ***FY 2017 Plans:*** Complete development of a manufacturing process for additional source materials.	-	5.542	4.600
Title: 13) BSCAV ***FY 2017 Plans:*** Initiate nonclinical studies to evaluate drug-drug interactions in small animal models.	-	-	2.400
Title: 14) INATS ***FY 2015 Accomplishments:*** Continued nonclinical studies to expand indications for pyridostigmine bromide (PB). ***FY 2016 Plans:*** Continue nonclinical studies to expand indications for pyridostigmine bromide (PB). ***FY 2017 Plans:*** Complete nonclinical studies to expand indications for pyridostigmine bromide (PB).	0.840	1.448	1.500
Title: 15) INATS ***FY 2015 Accomplishments:*** Conducted centrally-acting formulation development.	1.495	-	-
Title: 16) INATS ***FY 2015 Accomplishments:***	0.995	2.703	-

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Initiated nonclinical studies to evaluate the efficacy of centrally-acting therapeutics with fielded oxime ***FY 2016 Plans:*** Complete nonclinical studies to evaluate the efficacy of centrally-acting therapeutics with fielded oxime.			
Title: 17) INATS ***FY 2016 Plans:*** Initiate and complete pilot scale development of oxime bulk drug substance (BDS) and final drug product (FDP).	-	4.122	-
Title: 18) INATS ***FY 2016 Plans:*** Initiate oxime 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: 19) INATS ***FY 2017 Plans:*** Initiate large-scale centrally acting current Good Manufacturing Practice (cGMP) efforts and manufacturing of clinical trial material.	-	-	3.838
Title: 20) INATS ***FY 2017 Plans:*** Initiate centrally acting phase 1 clinical trial.	-	-	3.000
Title: 21) SBIR/STTR ***FY 2016 Plans:*** SBIR/STTR - FY16 - Small Business Innovative Research.	-	0.783	-
Accomplishments/Planned Programs Subtotals	25.966	42.911	39.504

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• JM6677: *ADVANCED ANTICONVULSANT SYSTEM (AAS)*	0.000	11.133	0.000	-	0.000	7.215	0.000	0.000	0.000	0	18.348

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost

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, and should that single source experience manufacturing or quality issues, 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 Development 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)

INATS' evolutionary Acquisition Strategy was recently expanded to (1) align all Department of Defense nerve agent therapeutics under it, and to (2) insert a centrally-acting (CA) anticholinergic agent, 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. To accomplish this, separate Milestones B and C reviews were originally scheduled for the oxime and CA development efforts. However after decision briefings to the Milestone Decision Authority and discussions with the Joint Services, MCS-CDP will conduct combined Milestone B and C reviews for the oxime and CA development efforts and decision reviews for PB expansion beyond the combined-development Technology Maturation and Risk Reduction (TM&RR) Phase. In the TM&RR phase, close collaborations will occur between the Joint Program Manager - Medical Countermeasure Systems (JPM-MCS)), and 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 partners 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 system integrator will also oversee the manufacture of improved oxime and CA formulations and delivery system that is stable under operationally relevant temperatures. The system integrator 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.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AUTOINJ - HW S - Autoinjector - Manufacturing of Consistency Lots	PO	TBD : TBD	0.000	0.000		0.000		2.840	Dec 2016	-		2.840	Continuing	Continuing	0.000
AAS - HW S - Alternative Autoinjector	PO	Battelle Memorial Institute : Columbus, OH	4.154	4.000	Sep 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - HW C - Qualification of the Manufacturing Suit	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	24.650	8.260	Dec 2014	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	0.000		6.440	Feb 2016	6.883	Jan 2017	-		6.883	Continuing	Continuing	0.000
BSCAV-P - SW S - Engineering and Scale up Manufacturing	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	0.600	Mar 2015	4.100	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
BSCAV-P - Evaluation of Alternative Source Material	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	5.200	Nov 2015	0.000		3.750	Dec 2016	-		3.750	Continuing	Continuing	0.000
INATS - HW C - Pilot Scale Development of Drug Product	PO	TBD : TBD	0.000	0.000		3.981	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000
INATS - HW C - cGMP Efforts and Manufacture of Material	PO	TBD : TBD	0.000	0.000		3.040	Apr 2016	4.980	Dec 2016	-		4.980	Continuing	Continuing	0.000
INATS - HW S - Centrally Acting Formulation Development	PO	Battelle Memorial Institute : Columbus, OH	0.000	0.825	Dec 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	43.447	18.885		17.561		18.453		-		18.453	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AUTOINJ - TD/D S - Autoinjector - FDA NDA coordination	PO	TBD : TBD	0.000	0.000		0.000		0.190	Jun 2017	-		0.190	Continuing	Continuing	0.000
INATS - ILS S - Regulatory Support	PO	Battelle Memorial Institute : Columbus, OH	0.224	0.205	Jun 2015	0.245	Jun 2016	0.260	Jun 2017	-		0.260	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.783	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	0.224	0.205		1.028		0.450		-		0.450	-	-	0.000

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AUTOINJ - DTE S - Autoinjector - Stability Testing	PO	TBD : TBD	0.000	0.000		0.000		1.760	Jun 2017	-		1.760	Continuing	Continuing	0.000
BSCAV-P - OTHT S - Stability Testing	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	2.830	1.754	Jan 2015	1.920	Jan 2016	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		5.361	Mar 2016	2.310	Jan 2017	-		2.310	Continuing	Continuing	0.000
BSCAV-P - OTHT S - Nonclinical Studies in Small Models	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	0.000		4.235	Dec 2015	1.870	Jan 2017	-		1.870	Continuing	Continuing	0.000
BSCAV-P - OTHT S - Pilot Nonclinical PK Efficacy Studies	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	0.000		4.250	Dec 2015	5.340	Jan 2017	-		5.340	Continuing	Continuing	0.000
INATS - DTE S - Nonclinical Studies for PB	PO	Battelle Memorial Institute : Columbus, OH	3.194	0.700	Jan 2015	0.706	Jan 2016	1.140	Jan 2017	-		1.140	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INATS - DTE S - Centrally Acting Nonclinical Studies - Oxime / 2-PAM	PO	Battelle Memorial Institute : Columbus, OH	0.000	0.650	Dec 2014	1.960	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
INATS - DTE S - INATS - Centrally Acting Phase 1 Trial	PO	TBD : TBD	0.000	0.000		0.000		2.240	Dec 2016	-		2.240	Continuing	Continuing	0.000
		Subtotal	6.024	3.104		18.432		14.660		-		14.660	-	-	0.000

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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		0.000		0.358	Dec 2016	-		0.358	Continuing	Continuing	0.000
BSCAV-P - PM/MS S - MCS Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	2.048	0.800	Mar 2015	1.300	Mar 2016	1.010	Mar 2017	-		1.010	Continuing	Continuing	0.000
BSCAV-P - PM/MS S - Product Management Support	C/FFP	Various : TBD	2.170	0.882	Jun 2015	1.470	Jun 2016	1.190	Jun 2017	-		1.190	Continuing	Continuing	0.000
BSCAV-P - PM/MS S - Product Management Support #2	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.796	0.240	Mar 2015	0.460	Mar 2016	0.240	Mar 2017	-		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	1.825	0.900	Sep 2015	1.500	Sep 2016	1.625	Sep 2017	-		1.625	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
INATS - PM/MS S - Product Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.145	0.155	Dec 2014	0.160	Dec 2015	0.165	Dec 2016	-		0.165	Continuing	Continuing	0.000
INATS - PM/MS S - Program Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.140	0.330	Sep 2015	0.480	Sep 2016	0.528	Sep 2017	-		0.528	Continuing	Continuing	0.000
INATS - PM/MS S - Product Management Support #2	C/FFP	Various : TBD	0.000	0.465	Jun 2015	0.520	Jun 2016	0.825	Jun 2017	-		0.825	Continuing	Continuing	0.000
		Subtotal	7.124	3.772		5.890		5.941		-		5.941	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	56.819	25.966		42.911		39.504		-		39.504	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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)*

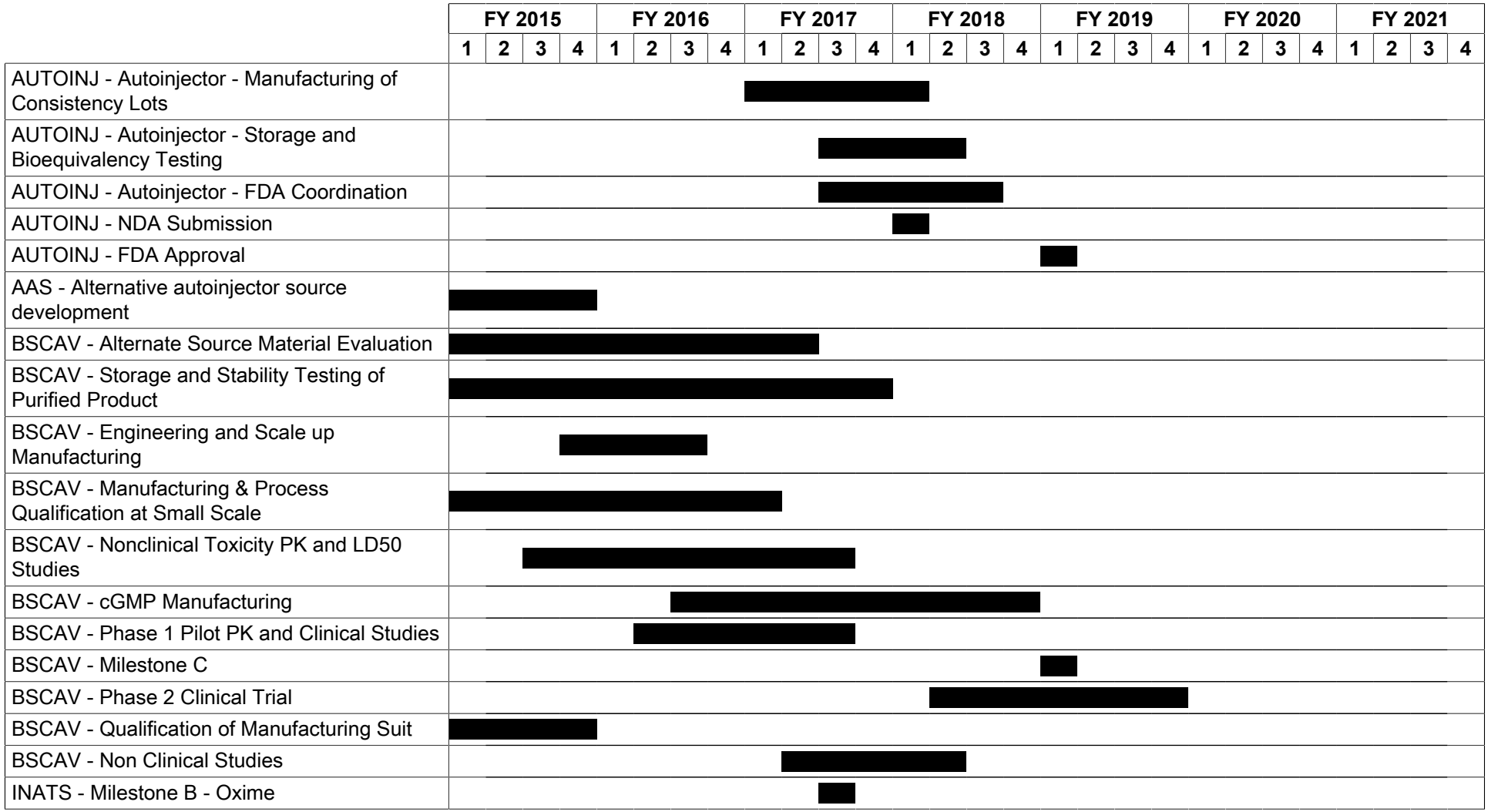

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*

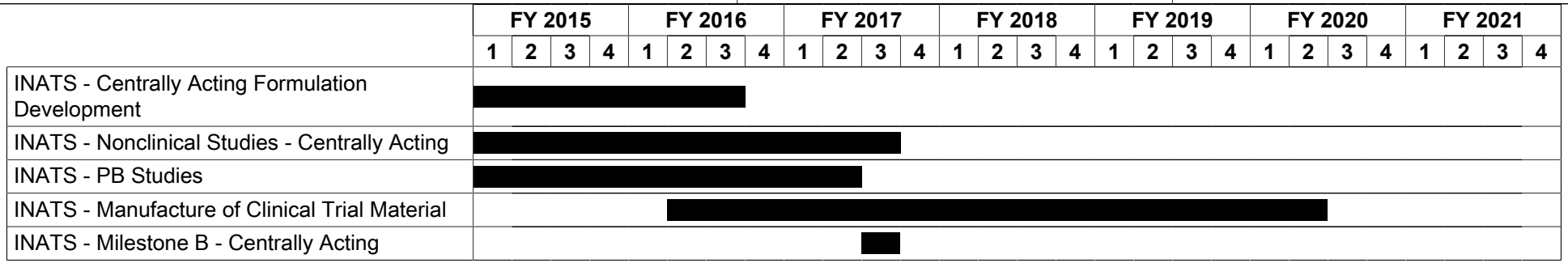

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** MC5 / *MEDICAL CHEMICAL DEFENSE (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
AUTOINJ - Autoinjector - Manufacturing of Consistency Lots	1	2017	1	2018
AUTOINJ - Autoinjector - Storage and Bioequivalency Testing	3	2017	2	2018
AUTOINJ - Autoinjector - FDA Coordination	3	2017	3	2018
AUTOINJ - NDA Submission	1	2018	1	2018
AUTOINJ - FDA Approval	1	2019	1	2019
AAS - Alternative autoinjector source development	1	2015	4	2015
BSCAV - Alternate Source Material Evaluation	1	2015	2	2017
BSCAV - Storage and Stability Testing of Purified Product	1	2015	4	2017
BSCAV - Engineering and Scale up Manufacturing	4	2015	3	2016
BSCAV - Manufacturing & Process Qualification at Small Scale	1	2015	1	2017
BSCAV - Nonclinical Toxicity PK and LD50 Studies	3	2015	3	2017
BSCAV - cGMP Manufacturing	3	2016	4	2018
BSCAV - Phase 1 Pilot PK and Clinical Studies	2	2016	3	2017
BSCAV - Milestone C	1	2019	1	2019
BSCAV - Phase 2 Clinical Trial	2	2018	4	2019
BSCAV - Qualification of Manufacturing Suit	1	2015	4	2015
BSCAV - Non Clinical Studies	2	2017	2	2018
INATS - Milestone B - Oxime	3	2017	3	2017
INATS - Centrally Acting Formulation Development	1	2015	3	2016
INATS - Nonclinical Studies - Centrally Acting	1	2015	3	2017
INATS - PB Studies	1	2015	2	2017
INATS - Manufacture of Clinical Trial Material	2	2016	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 - Milestone B - Centrally Acting	3	2017	3	2017

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
TE5: *TEST & EVALUATION (EMD)*	-	9.901	6.053	6.119	-	6.119	6.385	6.341	6.310	6.436	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 the Test Grid, the Mobile Test Infrastructure (MTI), the Joint Ambient Breeze Tunnel (JABT) and the 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 cloud health and status of all of the equipment in the network anywhere in Dugway Proving Ground (DPG). The MTI is an all-inclusive mobile management service functioning wirelessly. MTI is capable of integrating, controlling, commanding and managing all assets required to conduct transportable testing. 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 Major Range Test Facility Base (MRTFB) for CB Testing. The JABT and ASC improvements will provide a tech refresh to existing infrastructure and allow for test results to be integrated into the Test Grid Data Management System (DMS). 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) Advanced Technology Demonstration (ATD).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016	FY 2017
Title: 1) PD TESS - Dynamic Test Chamber (DTC)	0.497	1.196	-
FY 2015 Accomplishments: Initiated validation of chamber.			
FY 2016 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015	FY 2016	FY 2017
Validate chamber. Initiate upgrade for Next Generation Chemical Detector (NGCD) use.			
Title: 2) PD TESS - Non-Traditional Agent Defense Test System (NTADTS) ***FY 2015 Accomplishments:*** Transitioned test system to the Chemical and Biological (CB) Test and Evaluation (T&E) community. ***FY 2016 Plans:*** Transition 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.	4.525	2.452	2.260
Title: 3) PD TESS - Test Grid ***FY 2015 Accomplishments:*** Conducted V&V Tests for the Chemical Wet and Biological Wet Capabilities. ***FY 2016 Plans:*** Complete 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.	3.754	2.293	1.100
Title: 4) PD TESS - Joint Biological Tactical Detection System Test Infrastructure ***FY 2015 Accomplishments:*** Completed referee equipment, natural background and interferent development.	1.125	-	-
Title: 5) PD TESS - Joint Ambient Breeze Tunnel (JABT) ***FY 2017 Plans:*** Conduct V&V Testing on upgrades and transition.	-	-	0.715
Title: 6) PD TESS - Active Standoff Chamber - (ASC) ***FY 2017 Plans:*** Conduct V&V Testing on upgrades and transition.	-	-	0.715
Title: 7) PD TESS - Mobile Test Infrastructure (MTI) ***FY 2017 Plans:***	-	-	1.329

Exhibit R-2A, RDT&E Project Justification: PB 2017 Chemical and Biological Defense Program		Date: February 2016
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 2015	FY 2016	FY 2017
Conduct V&V Testing. Integrate sensors. Transition MTI to DPG for network dissemination and referee devices.			
Title: 8) SBIR/STTR	-	0.112	-
FY 2016 Plans: SBIR/STTR - FY16 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	9.901	6.053	6.119

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• TE7: *TEST & EVALUATION (OP SYS DEV)*	5.940	4.091	2.594	-	2.594	6.605	6.318	5.416	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

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program			Date: February 2016
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	Project (Number/Name) TE5 / *TEST & EVALUATION (EMD)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PD TESS - Test Infrastructure - HW S - DTC Fabrication/ Installation	C/CPFF	Johns Hopkins University - Applied Physics Lab : Laurel, MD	4.524	0.300	Mar 2015	0.600	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Test Grid Instrumentation/ Data Network	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	4.892	0.600	Mar 2015	0.650	Mar 2016	1.100	Dec 2016	-		1.100	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Test Grid Instrumentation Data Network	C/CPFF	ITT Information Systems : Alexandria, VA	27.301	2.089	Jun 2015	1.050	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HWS - NTA Defense Test System Design/Fabrication/ Installation	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.740	1.000	Mar 2015	0.000		0.581	Dec 2016	-		0.581	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - NTA Defense Test System Design, Fabrication, Install	C/CPFF	MRIGlobal : Kansas City, MO	9.666	1.257	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Test Grid	MIPR	Various : TBD	0.504	0.104	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - SW GFPR - DTC Fabrication/ Installation	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.350	0.000		0.200	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - NTADTS Support	MIPR	Various : TBD	0.000	0.000		1.800	Mar 2016	1.000	Dec 2016	-		1.000	Continuing	Continuing	0.000
PD TESS - HW S - JBTDS TI - Engineering Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.349	0.105	Dec 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *TEST & EVALUATION (EMD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PD TESS - HW S - JBTDS TI -Engineering Support	MIPR	Various : TBD	0.310	1.020	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - HW S - NTADTS Design/ Fabrication/Installation	MIPR	TBD : TBD	0.000	1.111	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - HW S - ASC Component Upgrades	C/CPFF	Various : TBD	0.000	0.000		0.000		0.350	Mar 2017	-		0.350	Continuing	Continuing	0.000
PD TESS - HW S - ASC Component Upgrades #2	MIPR	Various : TBD	0.000	0.000		0.000		0.150	Mar 2017	-		0.150	Continuing	Continuing	0.000
PD TESS - HW S - JABT Component Upgrades	C/CPFF	TBD : TBD	0.000	0.000		0.000		0.350	Mar 2017	-		0.350	Continuing	Continuing	0.000
PD TESS - HW S - JABT Component Upgrades #2	MIPR	Various : TBD	0.000	0.000		0.000		0.150	Mar 2017	-		0.150	Continuing	Continuing	0.000
		Subtotal	48.636	7.586		4.300		3.681		-		3.681	-	-	0.000

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PD TESS - Test Infrastructure - ES S - Integrated Product Team (IPT) Support	MIPR	Various : TBD	14.271	0.379	Dec 2014	0.400	Dec 2015	0.761	Jan 2017	-		0.761	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.112	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
		Subtotal	14.271	0.379		0.512		0.761		-		0.761	-	-	0.000

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *TEST & EVALUATION (EMD)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PD TESS - Test Infrastructure - PM/MS S - Program Management/ Systems Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	5.848	1.936	Dec 2014	1.241	Dec 2015	1.677	Jan 2017	-		1.677	Continuing	Continuing	0.000
		Subtotal	5.848	1.936		1.241		1.677		-		1.677	-	-	0.000

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	68.755	9.901		6.053		6.119		-		6.119	-	-	0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *TEST & EVALUATION (EMD)*

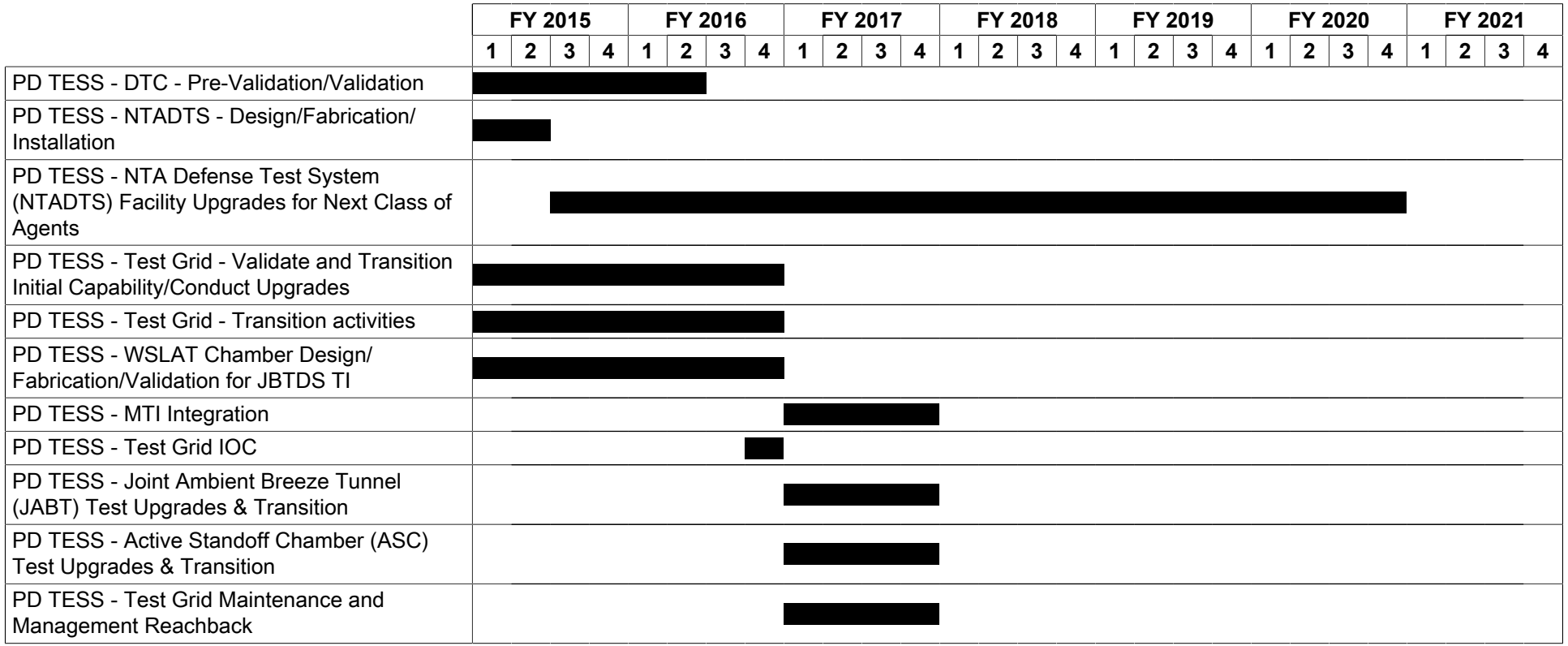

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Chemical and Biological Defense Program		Date: February 2016
Appropriation/Budget Activity 0400 / 5	**R-1 Program Element (Number/Name)** PE 0604384BP / *CHEMICAL/BIOLOGICAL DEFENSE (EMD)*	**Project (Number/Name)** TE5 / *TEST & EVALUATION (EMD)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
PD TESS - DTC - Pre-Validation/Validation	1	2015	2	2016
PD TESS - NTADTS - Design/Fabrication/Installation	1	2015	2	2015
PD TESS - NTA Defense Test System (NTADTS) Facility Upgrades for Next Class of Agents	3	2015	4	2020
PD TESS - Test Grid - Validate and Transition Initial Capability/Conduct Upgrades	1	2015	4	2016
PD TESS - Test Grid - Transition activities	1	2015	4	2016
PD TESS - WSLAT Chamber Design/Fabrication/Validation for JBTDS TI	1	2015	4	2016
PD TESS - MTI Integration	1	2017	4	2017
PD TESS - Test Grid IOC	4	2016	4	2016
PD TESS - Joint Ambient Breeze Tunnel (JABT) Test Upgrades & Transition	1	2017	4	2017
PD TESS - Active Standoff Chamber (ASC) Test Upgrades & Transition	1	2017	4	2017
PD TESS - Test Grid Maintenance and Management Reachback	1	2017	4	2017

THIS PAGE INTENTIONALLY LEFT BLANK