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

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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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	-	180.962	170.354	138.187	-	138.187	93.408	81.394	69.629	99.156	Continuing	Continuing
CA4: <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>	-	39.930	60.192	42.308	-	42.308	8.238	9.679	12.802	17.381	Continuing	Continuing
DE4: <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>	-	2.051	1.594	0.500	-	0.500	2.500	5.500	12.000	12.500	Continuing	Continuing
IP4: <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>	-	6.253	4.217	3.235	-	3.235	0.000	0.000	0.500	3.500	Continuing	Continuing
IS4: <i>INFORMATION SYSTEMS (ACD&amp;P)</i>	-	7.585	7.464	5.928	-	5.928	6.187	1.451	0.870	0.783	Continuing	Continuing
MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>	-	114.230	79.516	65.648	-	65.648	61.660	41.306	29.440	50.001	Continuing	Continuing
MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>	-	0.000	0.000	5.681	-	5.681	0.000	0.000	0.000	0.000	0	5.681
TE4: <i>TEST &amp; EVALUATION (ACD&amp;P)</i>	-	10.913	17.371	14.887	-	14.887	14.823	23.458	14.017	14.991	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

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

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

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

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

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

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

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>
Previous President's Budget	180.536	172.754	118.284	-	118.284
Current President's Budget	180.962	170.354	138.187	-	138.187
Total Adjustments	0.426	-2.400	19.903	-	19.903
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	0.000	-2.400			
• Congressional Rescissions	-	-			
• Congressional Adds	0.000	-			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	2.921	-			
• SBIR/STTR Transfer	-2.495	-			
• Other Adjustments	0.000	-	19.903	-	19.903

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**Change Summary Explanation**

Funding: FY17 - Adjustments due to underexecution and fact-of-life changes (-\$15M). Other Departmental adjustments (-\$4M). 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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				<b>Project (Number/Name)</b> CA4 / CONTAMINATION AVOIDANCE (ACD&P)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
CA4: CONTAMINATION AVOIDANCE (ACD&P)	-	39.930	60.192	42.308	-	42.308	8.238	9.679	12.802	17.381	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This Advanced Component Development and Prototypes (ACD&P) Project supports Component Advanced Development and System Integration (CAD/SI) of reconnaissance, detection, identification, and hazard prediction equipment, hardware, and software. Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, CONOPS and TTPs. Individual efforts are: (1) Biosurveillance (BSV), (2) Next Generation Chemical Detector (NGCD); (3) Non-Traditional Agent (NTA) Defense.

Biosurveillance (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). BSV will align the biosurveillance efforts across DoD and national strategies. BSV will scope and influence BSV capabilities as products to meet Warfighter requirements through innovative management of key BSV initiatives. BSV requirements address medical and physical CBRN mission needs spanned in over 11 requirements documents and through Combatant Commander (COCOM) identified needs. BSV supports Joint US Forces Korea (USFK) Portal and Integrated Threat recognition (JUPITR) ATD/BSV ATD which find, demonstrate, transition, and transfer the best operational concepts and technology solutions in support of a holistic approach to countering biological threats from the laboratory to operational use and theater confirmation of a Biological Event. JUPITR ATD consists of four legs; Early Warning (EW), Biological Identification Capabilities Sets (BICS), Assessment of Environmental Detectors (AED), and Biosurveillance Portal (BSP). The JUPITR ATD provides the USFK with a holistic biosurveillance capability to provide early warning, detection, collection, identification, and theater confirmation of a Biological event. The JUPITR ATD consists of filling capability gaps through information sharing and communication systems and detection/diagnostic systems for the USFK. Outputs will focus on proving component, CONOPS, and subsystem transition into relevant technologies that are currently programs of record (PORs) to include G-BSP, NGDS, JBTDS and CALS. Systems used in Operational Demonstration will be left behind with a two year sustainment plan for continuing use. Whole system live agent test (WSLAT) of AED units will support the Joint Project Manager for Nuclear Biological Chemical Contamination Avoidance business case analysis for maritime and fixed site Point Biological Detection.

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 Detector Alarm, NGCD 2 Survey Detector and NGCD 3 Sample Analysis are in the Technical Maturation and Risk Reduction Phase. The fourth capability, NGCD 4 Individual Detector - personal chemical detection is still in material solution analysis. These sensors will improve detection, consequence management and reconnaissance, and weapons of mass destruction (WMD) interdiction capabilities. The scope of the project includes detection of chemical a few feet away from the detector as well as the sampling point of the detector.

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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 transition information, technologies, and capabilities into acquisition options/efforts (Programs of Record, Advanced Technology Demonstration (ATD), and Accelerated Acquisition) that account for the breadth and depth of emerging threats which span the full range of military missions. The NTA Defense program will provide essential enablers such as threat understanding; operational impacts of performance trades; and comprehensive, integrated, and layered defense concepts against emerging 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.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b>Title:</b> 1) BSV</p> <p><b>Description:</b> Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD).</p> <p>NOTE: Prior to FY16 the BSV effort was programmed in Project MB4 - Medical Biological Defense.</p> <p><b>FY 2016 Plans:</b> Continue to provide residual capability for the Biological Identification Capability Sets (BICS) under the BSV USFK JUPITR ATD.</p> <p><b>FY 2017 Plans:</b> Continue to provide residual capability for the BICS under the BSV USFK JUPITR ATD.</p>	-	1.710	0.480
<p><b>Title:</b> 2) BSV</p> <p><b>Description:</b> Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD).</p> <p>NOTE: Prior to FY16 the BSV effort was programmed in Project MB4 - Medical Biological Defense.</p> <p><b>FY 2016 Plans:</b> Continue to provide residual capability for JUPITR Technologies specifically the Assessment of Environmental Detectors (AED).</p> <p><b>FY 2017 Plans:</b> Continue to purchase and integrate sensors into residual capabilities for JUPITR Technologies specifically the AED.</p>	-	3.960	1.110
<p><b>Title:</b> 3) BSV</p> <p><b>Description:</b> Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD).</p>	-	9.337	1.703

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
NOTE: Prior to FY16 the BSV effort was programmed in Project MB4 - Medical Biological Defense.			
<b>FY 2016 Plans:</b> Continue to provide residual capability and conduct an integration assessment for the Early Warning (EW) component under the BSV USFK JUPITR ATD.			
<b>FY 2017 Plans:</b> Continue to provide residual capability for the EW components under the BSV USFK JUPITR ATD.			
<b>Title:</b> 4) BSV <b>Description:</b> Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD).  NOTE: Prior to FY16 the BSV effort was programmed in Project MB4 - Medical Biological Defense.	-	0.680	0.190
<b>FY 2016 Plans:</b> Continue to provide residual capability for the Biosurveillance Portal (BSP) under the BSV USFK JUPITR ATD.			
<b>FY 2017 Plans:</b> Continue to provide residual capability for the BSP under the BSV USFK JUPITR ATD.			
<b>Title:</b> 5) BSV <b>Description:</b> Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD).  NOTE: Prior to FY16 the BSV effort was programmed in Project MB4 - Medical Biological Defense.	-	0.500	0.140
<b>FY 2016 Plans:</b> Continue to provide residual capability and operational demonstration test support for AED, EW, BSP and BICS within the USFK JUPITR ATD.			
<b>FY 2017 Plans:</b> Continue to provide residual capability and operational demonstration test support for AED, EW, BSP and BICS within the USFK JUPITR ATD.			
<b>Title:</b> 6) BSV	-	1.190	0.330

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b>Description:</b> Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD).</p> <p>NOTE: Prior to FY16 the BSV effort was programmed in Project MB4 - Medical Biological Defense.</p> <p><b>FY 2016 Plans:</b> Continue to support the ATD efforts and overall transition of technologies to programs of record. Supports program management and systems engineering to ensure integration across residual capabilities for AED, EW, BSP and BICS within the USFK JUPITR ATD.</p> <p><b>FY 2017 Plans:</b> Continue to support the ATD efforts and overall transition of technologies to programs of record. Supports program management and systems engineering to ensure integration across residual capabilities for AED, EW, BSP and BICS within the USFK JUPITR ATD.</p>			
<p><b>Title:</b> 7) NGCD</p> <p><b>FY 2015 Accomplishments:</b> Completed Breadboard testing. Initiated Brassboard testing.</p> <p><b>FY 2016 Plans:</b> Complete Brassboard testing. Initiate Final prototype testing and Early Operational Assessment (EOA).</p> <p><b>FY 2017 Plans:</b> Complete Final Prototype testing. Initiate manufacturing and affordability assessment.</p>	3.125	3.560	8.541
<p><b>Title:</b> 8) NGCD</p> <p><b>Description:</b> NGCD 1 - Smith Detection Contract</p> <p><b>FY 2015 Accomplishments:</b> Awarded option to mature system, designed Brassboard prototypes, continued performing system engineering, technical management, technology experimentation, system design, manufactured Brassboard prototype and supported Government testing (two systems).</p> <p><b>FY 2016 Plans:</b></p>	0.972	0.964	0.619

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>Complete maturation of Brassboard system. Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing. Award option to develop Final prototype systems (five systems).</p> <p><b>FY 2017 Plans:</b> Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing.</p>				
<p><b>Title:</b> 9) NGCD</p> <p><b>Description:</b> NGCD 1 - Signature Science Contract</p> <p><b>FY 2015 Accomplishments:</b> Awarded option to mature system, designed Brassboard prototypes, continued performing system engineering, technical management, technology experimentation, system design, manufactured Brassboard prototypes and supported Government testing (two systems).</p> <p><b>FY 2016 Plans:</b> Complete maturation of Brassboard system. Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing. Award option to develop Final prototype systems (five systems).</p> <p><b>FY 2017 Plans:</b> Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing.</p>		5.261	2.753	1.854
<p><b>Title:</b> 10) NGCD</p> <p><b>Description:</b> NGCD 1 - Chemring Chemhound Contract</p> <p><b>FY 2015 Accomplishments:</b> Awarded option to mature system, designed Brassboard prototypes, continued performing system engineering, technical management, technology experimentation, system design, manufactured Brassboard prototypes and supported Government testing (two systems).</p> <p><b>FY 2016 Plans:</b></p>		2.066	2.040	1.169

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p>Complete maturation of Brassboard system. Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing. Award option to develop Final prototype systems (five systems).</p> <p><b>FY 2017 Plans:</b> Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing.</p>				
<p><b>Title:</b> 11) NGCD</p> <p><b>Description:</b> NGCD 2 - Chemring TCSD Contract</p> <p><b>FY 2015 Accomplishments:</b> Awarded option to mature system, designed Brassboard prototypes, continued performing system engineering, technical management, technology experimentation, system design, manufactured Brassboard prototypes and supported Government testing (2 systems).</p> <p><b>FY 2016 Plans:</b> Complete maturation of Brassboard system. Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing. Award option to develop Final prototype systems (5 systems).</p> <p><b>FY 2017 Plans:</b> Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing.</p>		2.617	2.345	1.525
<p><b>Title:</b> 12) NGCD</p> <p><b>Description:</b> NGCD 2 - FLIR/NOMADICS Contract</p> <p><b>FY 2015 Accomplishments:</b> Awarded option to mature system, designed Brassboard prototypes, continued performing system engineering, technical management, technology experimentation, system design, manufactured Brassboard prototypes and supported Government testing (2 systems).</p> <p><b>FY 2016 Plans:</b> Complete maturation of Brassboard system. Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing. Award option to develop Final prototype systems (5 systems).</p> <p><b>FY 2017 Plans:</b></p>		4.449	3.115	2.153

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing.				
<p><b>Title:</b> 13) NGCD</p> <p><b>Description:</b> NGCD 2 - ChemImage Contract</p> <p><b>FY 2015 Accomplishments:</b> Awarded option to mature system, designed Brassboard prototypes, continued performing system engineering, technical management, technology experimentation, system design, manufactured Brassboard prototypes and supported Government testing (2 systems).</p> <p><b>FY 2016 Plans:</b> Complete maturation of Brassboard system. Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing. Award option to develop Final prototype systems (5 systems).</p> <p><b>FY 2017 Plans:</b> Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing.</p>		3.273	2.730	1.926
<p><b>Title:</b> 14) NGCD</p> <p><b>Description:</b> NGCD 3 - Bruker Contract</p> <p><b>FY 2015 Accomplishments:</b> Awarded option to mature system, designed Brassboard prototypes, continued performing system engineering, technical management, technology experimentation, system design, manufactured Brassboard prototypes and supported Government testing (2 systems)</p> <p><b>FY 2016 Plans:</b> Complete maturation of Brassboard system. Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing. Award option to develop Final prototype systems (5 systems).</p> <p><b>FY 2017 Plans:</b> Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing.</p>		2.814	2.068	0.992
<p><b>Title:</b> 15) NGCD</p> <p><b>Description:</b> NGCD 3 - Chemring MARS Contract</p>		2.775	2.984	1.576

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b><i>FY 2015 Accomplishments:</i></b> Awarded option to mature system, designed Brassboard prototypes, continued performing system engineering, technical management, technology experimentation, system design, manufactured Brassboard prototypes and supported Government testing (2 systems).</p> <p><b><i>FY 2016 Plans:</i></b> Complete maturation of Brassboard system. Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing. Award option to develop Final prototype systems (5 systems).</p> <p><b><i>FY 2017 Plans:</i></b> Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing.</p>				
<p><b><i>Title:</i></b> 16) NGCD <b><i>Description:</i></b> NGCD 3 - Battelle Contract</p> <p><b><i>FY 2015 Accomplishments:</i></b> Awarded option to mature system, designed Brassboard prototypes, continued performing system engineering, technical management, technology experimentation, system design, manufactured Brassboard prototypes and supported Government testing (2 systems).</p> <p><b><i>FY 2016 Plans:</i></b> Complete maturation of Brassboard system. Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing. Award option to develop Final prototype systems (5 systems).</p> <p><b><i>FY 2017 Plans:</i></b> Continue performing system engineering, technical management, technology experimentation, system design, and support Government testing.</p>		4.109	3.819	2.085
<p><b><i>Title:</i></b> 17) NGCD <b><i>FY 2016 Plans:</i></b> Evaluate transitional technology from S&amp;T. <b><i>FY 2017 Plans:</i></b> Continue to evaluate transitional technology from S&amp;T.</p>		-	1.000	3.000
<p><b><i>Title:</i></b> 18) NGCD</p>		0.367	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>FY 2015 Accomplishments:</b> Initiated program management and IPT support for experimentation and demonstration activities.				
<b>Title:</b> 19) NGCD		8.102	13.597	10.234
<b>FY 2015 Accomplishments:</b> Continued Government Integrated Product Development Team, program management, systems engineering and IPT support.				
<b>FY 2016 Plans:</b> Continue Government Integrated Product Development Team, program management, systems engineering and IPT support.				
<b>FY 2017 Plans:</b> Continue Government Integrated Product Development Team, program management, systems engineering and IPT support.				
<b>Title:</b> 20) NTA Defense - Technology Assessments		-	0.688	0.884
<b>FY 2016 Plans:</b> Initiate testing / characterization of Commercial Off The Shelf (COTS) CB systems to determine potential technology candidates for inclusion into program acquisition strategies to support emerging threat priorities.				
<b>FY 2017 Plans:</b> Continue testing / characterization of emerging Commercial Off The Shelf (COTS) technologies to determine potential candidates for inclusion into advanced and emerging threat test and experimentation activities.				
<b>Title:</b> 21) NTA Defense - Threat Understanding/ATD Front End Analysis		-	-	0.920
<b>FY 2017 Plans:</b> Conduct analysis of threat understanding for additional threat classes to enable refinement of technology and capability gaps identified during mission analysis. Conduct planning for expanded threat characterization and initiate execution. Conduct front end analysis to support future Multi Threat Multi Commodity ATDs and experimentation.				
<b>Title:</b> 22) NTA Defense - Systems Engineering		-	-	0.537
<b>FY 2017 Plans:</b> Conduct mission modeling and incorporate emerging technology to refine advanced threat investment strategies.				
<b>Title:</b> 23) NTA Defense - Strategic Coordination		-	-	0.340
<b>FY 2017 Plans:</b>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> CA4 / CONTAMINATION AVOIDANCE (ACD&P)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
Conduct NTA Library transition readiness to the CB Effects Manual. Update and maintain NTA Library. Conduct development of the Integrated Acquisition Portal for analysis to support refinement of investment strategies.			
<b>Title:</b> 24) SBIR/STTR	-	1.152	-
<b>FY 2016 Plans:</b> SBIR/STTR - FY16 - Small Business Innovative Research.			
<b>Accomplishments/Planned Programs Subtotals</b>	39.930	60.192	42.308

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• CA5: CONTAMINATION AVOIDANCE (EMD)	48.333	56.104	50.203	-	50.203	127.558	62.229	50.951	11.200	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
• JX0300: BIOSURVEILLANCE (BSV)	1.311	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0	1.311
• 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 (JBTD)	0.000	0.000	0.000	-	0.000	5.000	61.559	108.751	98.248	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**  
BIOSURVEILLANCE (BSV)

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> CA4 / <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>
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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).

**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.

**E. Performance Metrics**

N/A

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> CA4 / CONTAMINATION AVOIDANCE (ACD&P)
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGCD - HW S - Prototype System Design #1	C/CPIF	Smiths Detection : Edgewood, MD	0.506	0.972	Dec 2014	0.964	Dec 2015	0.619	Jun 2017	-		0.619	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #2	C/CPIF	Signature Science : Austin, TX	1.174	5.261	Jan 2015	2.753	Dec 2015	1.854	Jun 2017	-		1.854	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #3	C/CPIF	Chemring Chemhound : Charlotte, NC	1.158	2.066	Dec 2014	2.040	Dec 2015	1.169	Jun 2017	-		1.169	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #5	C/CPIF	Chemring TCSD : Charlotte, NC	1.340	2.617	Jan 2015	2.345	Jan 2016	1.525	Jun 2017	-		1.525	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #6	C/CPIF	FLIR/Nomadics : Stillwater, OK	1.532	4.449	Dec 2014	3.114	Jan 2016	2.153	Jun 2017	-		2.153	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #7	C/CPIF	ChemImage : Pittsburgh, PA	1.061	3.273	Dec 2014	2.730	Jan 2016	1.926	Jun 2017	-		1.926	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #8	C/CPIF	Bruker Detection Corp. : Billerica, MA	0.637	2.814	Jan 2015	2.068	Jan 2016	0.992	Jun 2017	-		0.992	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #9	C/CPIF	Chemring MARS : Charlotte, NC	1.425	2.775	Dec 2014	2.984	Jan 2016	1.576	Jun 2017	-		1.576	Continuing	Continuing	0.000
NGCD - HW S - Prototype System Design #10	C/CPIF	Battelle Memorial Institute : Columbus, OH	0.842	4.109	Jan 2015	3.819	Jan 2016	2.085	Jun 2017	-		2.085	Continuing	Continuing	0.000
NTA DEFENSE - HW S - COTS Characterization	C/CPFF	Various : TBD	0.000	0.000		0.438	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - COTS Characterization #2	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.250	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Technology Assessments	MIPR	Various : TBD	0.000	0.000		0.000		0.545	Mar 2017	-		0.545	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Strategic Coordination	MIPR	Various : TBD	0.000	0.000		0.000		0.210	Mar 2017	-		0.210	Continuing	Continuing	0.000
NTA DEFENSE - HW S - Systems Engineering	MIPR	Various : TBD	0.000	0.000		0.000		0.330	Mar 2017	-		0.330	Continuing	Continuing	0.000

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> CA4 / CONTAMINATION AVOIDANCE (ACD&P)
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NTA DEFENSE - NHW S - Threat Understanding	MIPR	Various : TBD	0.000	0.000		0.000		0.380	Mar 2017	-		0.380	Continuing	Continuing	0.000
<b>Subtotal</b>			9.675	28.336		23.505		15.364		-		15.364	-	-	0.000

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BSV - TD/D C - BSP residual purchase and sustainment	MIPR	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	0.000		1.050	Jan 2016	0.300	Jan 2017	-		0.300	Continuing	Continuing	0.000
BSV - ES S - Assessment of Environmental Detectors (6 systems at OSAN)	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		4.330	Jan 2016	1.200	Jan 2017	-		1.200	Continuing	Continuing	0.000
BSV - TD/D C - Biological Identification Capability Sets sustainment assays	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		2.080	Oct 2015	0.600	Nov 2016	-		0.600	Continuing	Continuing	0.000
BSV - ES S - Early Warning sustainment costs for software package	MIPR	Various : TBD	0.000	0.000		9.712	Oct 2015	1.678	Jan 2017	-		1.678	Continuing	Continuing	0.000
NGCD - ES S - Joint Service T&E/SE IPT	MIPR	Various : TBD	0.620	1.840	Nov 2014	1.708	Nov 2015	0.000		-		0.000	Continuing	Continuing	0.000
NTA DEFENSE - ES S - Integrated Product Team	MIPR	Various : TBD	0.000	0.000		0.000		0.170	Mar 2017	-		0.170	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		1.152	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.620	1.840		20.032		3.948		-		3.948	-	-	0.000

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> CA4 / CONTAMINATION AVOIDANCE (ACD&P)
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGCD - Brassboard Test	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	3.125	Dec 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGCD - Blind Test	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		1.400	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000
NGCD - Early Operational Assessment (EOA)	MIPR	Operational Test Command (OTC) : Ft. Hood, TX	0.000	0.000		0.000		1.200	Nov 2016	-		1.200	Continuing	Continuing	0.000
NGCD - OTHT C - DT/OT Chemical Chamber	MIPR	West Desert Test Center : Dugway, UT	0.000	0.000		0.000		3.898	Nov 2016	-		3.898	Continuing	Continuing	0.000
NGCD - OTHT SB - MIL-STD 810G	MIPR	West Desert Test Center : Dugway, UT	0.000	0.000		0.000		0.800	Nov 2016	-		0.800	Continuing	Continuing	0.000
NGCD - OTHT SB - False Alarm Testing	MIPR	Operational Test Command (OTC) : Ft. Hood, TX	0.000	0.000		0.000		0.600	Dec 2016	-		0.600	Continuing	Continuing	0.000
NGCD - OTHT SB - CARD/SPIRES Test	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.560	Jan 2016	1.143	Feb 2017	-		1.143	Continuing	Continuing	0.000
NGCD - OTHT SB - Chemical Purchase	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.706	Mar 2016	0.900	Mar 2017	-		0.900	Continuing	Continuing	0.000
NGCD - OTHT SB - Tech Test 2	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.294	Oct 2015	0.000		-		0.000	Continuing	Continuing	0.000
NGCD - OTHT SB - Simulant V&V Test	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.600	Oct 2016	0.000		-		0.000	Continuing	Continuing	0.000

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> CA4 / CONTAMINATION AVOIDANCE (ACD&P)
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<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
NTA DEFENSE - HW S - Threat Understanding	MIPR	Various : TBD	0.000	0.000		0.000		0.200	Mar 2017	-		0.200	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	3.125		3.560		8.741		-		8.741	-	-	0.000

<b>Management Services (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
BSV - PM/MS S - BMO Labor & Travel Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		0.050	Aug 2016	0.050	Nov 2016	-		0.050	Continuing	Continuing	0.000
BSV - PM/MS S - ECBC Matrix Govt labor	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.080	Oct 2015	0.080	Dec 2016	-		0.080	Continuing	Continuing	0.000
BSV - PM/MS S - ECBC ATD Team	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.000		0.075	Mar 2016	0.045	Jan 2017	-		0.045	Continuing	Continuing	0.000
NGCD - PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	5.603	6.262	Nov 2014	12.890	Nov 2015	13.234	Nov 2016	-		13.234	Continuing	Continuing	0.000
NGCD - Joint CBRNE Advanced Technology Demonstration	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.367	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000





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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> CA4 / <i>CONTAMINATION AVOIDANCE (ACD&amp;P)</i>
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NTA DEFENSE - System Engineering/Mission Modeling																												

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

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

Events	Start		End	
	Quarter	Year	Quarter	Year
BSV - JUPITR ATD	1	2015	3	2016
BSV - JUPITR ATD Op Demo	3	2015	4	2015
BSV - JUPITR ATD Residuals	1	2016	4	2018
BSV - Biological Identification Capability Sets (BICS) Exercises	1	2015	1	2016
BSV - Biosurveillance (BSP) Portal Software 3.0	4	2015	4	2015
BSV - Early Warning Fusion and Integration	1	2015	3	2015
BSV - Assessment of Environmental Detectors (AED) Down-Select	2	2015	2	2015
BSV - Residual Purchase - Additional Systems	2	2016	3	2018
BSV - Transition of purchase of residual end items	4	2015	3	2018
NGCD - TMRR	1	2015	3	2017
NGCD - Prototype Build	1	2015	2	2015
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
NGCD - NGCD- Individual Detector (TMRR)	1	2019	4	2021
NTA DEFENSE - Technology Assessments: COTS Characterization	1	2016	4	2021
NTA DEFENSE - Strategic Coordination	1	2017	4	2021
NTA DEFENSE - Threat Understanding/ATD Front End Analysis	1	2017	4	2021
NTA DEFENSE - System Engineering/Mission Modeling	1	2017	4	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				<b>Project (Number/Name)</b> DE4 / DECONTAMINATION SYSTEMS (ACD&P)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
DE4: DECONTAMINATION SYSTEMS (ACD&P)	-	2.051	1.594	0.500	-	0.500	2.500	5.500	12.000	12.500	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

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

The programs supported under this Project include (1) Contaminated Human Remains System (CHRS), (2) Contamination Indicator Decontamination Assurance System (CIDAS), and (3) Joint Biological Agent Decontamination System (JBADS).

CHRS is a new start in FY17. The CHRS will address two capabilities identified within the Contamination Mitigation (ConMit) Initial Capabilities Document: a Contaminated Human Remains Transfer Case (CHRT) packaging solution to safely repatriate chemical, biological, or radiological contaminated human remains to the Continental United States and a sustainable Contaminated Human Remains Decontamination System (CHRDS) to reduce the hazard to warfighters by decontaminating chemical, biological, or radiological contaminated human remains.

The CHRT is a containment system which will protect personnel from the hazards associated with transporting human remains that are potentially contaminated with chemical, biological or radiological agents and Toxic Industrial Materials (TIM) without posing additional risk to the handlers or the environment in accordance with federal and international transportation standards.

The CHRDS is a system of tents, plumbing, generators, and medical equipment necessary to establish a decontamination site to perform decontamination, identification, and packaging of contaminated human remains for further disposition. The CHRDS will reduce the hazards associated with contaminated human remains through decontamination of remains and enable positive identification of remains for the Armed Forces Medical Examiner before packaging in a CHRT.

The CIDAS will provide a nerve and blister contamination indicator/decontamination assurance technology, henceforth called an "indicator", which will be packaged for application via small, mid or large scale applicators. 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.

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> DE4 / DECONTAMINATION SYSTEMS (ACD&P)
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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 One will provide thorough biological decontamination of the interior and exterior of cargo aircraft. The JBADS Phase One 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 Two will expand upon the Phase One capability set. Phase Two will develop multiple decontaminants and modular designs to address various platforms and chemical agent decontamination.

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> 1) CHRS <b>FY 2017 Plans:</b> Prepare documentation for and conduct Milestone A review for the Contaminated Human Remains Transfer Case (CHRT) to verify Service Requirements, assess market research, provide an independent cost estimate and validate Acquisition Strategy. Conduct an industry day to communicate the acquisition strategy for the CHRT to commercial vendors and provide context to an upcoming Request for Proposal for remains packaging solutions.	-	-	0.500
<b>Title:</b> 2) DFoS - CIDAS <b>FY 2015 Accomplishments:</b> Completed Technology Demonstration and contract documentation. Achieved Milestone B.	0.498	-	-
<b>Title:</b> 3) JBADS - System Design Support <b>FY 2015 Accomplishments:</b> Developed Requirements Traceability Matrix and Performance Specification. Conducted Engineering Trade Analysis to identify design modifications to optimize the system design. Initiated Biothermal Decontamination characterization testing to support Phase One. <b>FY 2016 Plans:</b> Complete and release RFP and prepare documentation to support Milestone B Decision.	1.553	1.564	-
<b>Title:</b> 4) SBIR/STTR <b>FY 2016 Plans:</b> SBIR/STTR - FY16 - Small Business Innovative Research.	-	0.030	-
<b>Accomplishments/Planned Programs Subtotals</b>	2.051	1.594	0.500

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> DE4 / DECONTAMINATION SYSTEMS (ACD&P)
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**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2015	FY 2016	FY 2017	FY 2017	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Cost To	
			Base	OCO	Total					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
• 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
• JD0070: JOINT BIOLOGICAL AGENT DECONTAMINATION SYSTEM (JBADS)	0.000	0.000	3.000	-	3.000	5.000	3.000	16.234	16.611	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

CONTAMINATED HUMAN REMAINS SYSTEM (CHRS)

The CHRS will consist of two separate approaches for the Contaminated Human Remains Transfer Case (CHRT) and the Contaminated Human Remains Decontamination System (CHRDS). The CHRT will use Competitive Prototyping (CP) to evaluate multiple alternatives in the Technology Maturation and Risk Reduction phase (Minimum TRL level of 4) that can meet the Contamination Mitigation (ConMit) ICD requirements. A solution will be chosen at Milestone B and developed under a cost plus incentive fee contract in the Engineering Manufacturing Development phase with incentives for weight reduction and processing time. The CHRDS will consist of a request for proposal to assemble Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) components for a Contaminated Human Remains Decontamination System using a best value firm-fixed price contracting strategy.

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.

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

Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
0400 / 4	PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	DE4 / DECONTAMINATION SYSTEMS (ACD&P)

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 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

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> DE4 / DECONTAMINATION SYSTEMS (ACD&P)
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DFoS CIDAS - HW S - Prototype Development	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.635	0.077	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.635	0.077		0.000		0.000		-		0.000	-	-	0.000

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
CHRS - TD/D S - IPT and Technical Support	MIPR	Various : TBD	0.000	0.000		0.000		0.399	Nov 2016	-		0.399	Continuing	Continuing	0.000
DFoS CIDAS - TD/D SB - IPT and Technical Support	MIPR	Various : TBD	1.520	0.120	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	0.474	Jan 2015	1.271	Nov 2015	0.000		-		0.000	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.030	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			1.520	0.594		1.301		0.399		-		0.399	-	-	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DFoS CIDAS - DTE S - Technology Demonstration	MIPR	Various : TBD	0.825	0.126	Nov 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JBADS - DTE S - Biothermal/Hot Air Dry Testing	C/CPFF	Materials Engineering and Technical Support Services	0.000	0.344	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000



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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> DE4 / DECONTAMINATION SYSTEMS (ACD&P)
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FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

CHRS - Milestone A	■																											
CHRS - Release Request for Proposal (RFP)	■																											
CHRS - Systems Readiness Review (SRR)	■																											
CHRS - Competitive Prototyping	■																											
CHRS - Preliminary Design Review (PDR)	■																											
CHRS - Capability Development Document (CDD)	■																											
CHRS - Milestone B	■																											
CHRS - Critical Design Review (CDR)	■																											
CHRS - Developmental/Operational Testing (DT/OT)	■																											
CHRS - Capability Production Document (CPD)	■																											
CHRS - Milestone C (MS C)/Low Rate Initial Production (LRIP)	■																											
DFOS - CIDAS Technology Demonstrations	■																											
DFOS - CIDAS MS B	■																											
DFOS - CIDAS CDR (Large Scale Applicator)	■																											
DFOS - CIDAS DT (Nerve Indicator and Applicators)	■																											
DFOS - CIDAS CPD (Nerve Indicator and Applicators)	■																											
DFOS - CIDAS MS C/LRIP	■																											
DFOS - CIDAS LRIP Delivery (Nerve Indicator and Applicators)	■																											
DFOS - CIDAS OT (Nerve Indicator and Applicators)	■																											

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> DE4 / DECONTAMINATION SYSTEMS (ACD&P)
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
DFOS - CIDAS DT (Blister Indicator)																												
DFOS - CIDAS CPD (Blister Indicator)																												
DFOS - CIDAS MS C/LRIP (Blister Indicator)																												
DFOS - CIDAS LRIP Delivery (Blister Indicator)																												
DFOS - CIDAS OT (Blister Indicator)																												
DFOS - CIDAS FRP (Nerve Indicator and Applicators)																												
DFOS - CIDAS FPR (Blister Indicator)																												
JBADS - TRA																												
JBADS - Engineering Trade Analysis/Design Modifications																												
JBADS - Biothermal Decontamination Characterization Testing (Phase One)																												
JBADS - Fabricate Aircraft Enclosure (Phase One)																												
JBADS - Design Verification Testing (Phase One)																												
JBADS - Capability Production Document (CPD) (Phase One)																												
JBADS - MS C/LRIP (Phase One)																												
JBADS - LRIP Contract Award (Phase One)																												
JBADS - LRIP Production (Phase One)																												
JBADS - Production Qualification Testing (Phase One)																												
JBADS - Initial Operational Test and Evaluation (IOT&E) (Phase One)																												
JBADS - FRP (Phase One)																												

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> DE4 / <i>DECONTAMINATION SYSTEMS (ACD&amp;P)</i>
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
JBADS - Hot Air Dry Testing (Phase Two)					██████████																											
JBADS - MS B (Phase Two)																																
JBADS - EMD Contract Award (Phase Two)																																
JBADS - Design Verification Testing (Phase Two)																	████████████████████															
JBADS - MS C/LRIP (Phase Two)																																

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> DE4 / DECONTAMINATION SYSTEMS (ACD&P)
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
CHRS - Milestone A	2	2017	2	2017
CHRS - Release Request for Proposal (RFP)	4	2017	4	2017
CHRS - Systems Readiness Review (SRR)	3	2018	3	2018
CHRS - Competitive Prototyping	1	2019	2	2019
CHRS - Preliminary Design Review (PDR)	3	2019	3	2019
CHRS - Capability Development Document (CDD)	3	2019	3	2019
CHRS - Milestone B	4	2019	4	2019
CHRS - Critical Design Review (CDR)	2	2020	2	2020
CHRS - Developmental/Operational Testing (DT/OT)	3	2020	4	2020
CHRS - Capability Production Document (CPD)	1	2021	1	2021
CHRS - Milestone C (MS C)/Low Rate Initial Production (LRIP)	3	2021	3	2021
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

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> DE4 / DECONTAMINATION SYSTEMS (ACD&P)
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Events	Start		End	
	Quarter	Year	Quarter	Year
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
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 Production Document (CPD) (Phase One)	1	2017	1	2017
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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				<b>Project (Number/Name)</b> IP4 / INDIVIDUAL PROTECTION (ACD&P)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
IP4: INDIVIDUAL PROTECTION (ACD&P)	-	6.253	4.217	3.235	-	3.235	0.000	0.000	0.500	3.500	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

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

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 CBRN filtration efforts. Several technologies are being pursued by the Joint Science and Technology Office (JSTO), with two specific technologies being pursued in the FY16-17 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. 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. 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. 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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IP4 / INDIVIDUAL PROTECTION (ACD&P)		
explore trade-space in areas such as protection level, heat stress, durability, antimicrobial properties, flame resistance, launderability, self-detoxification, and protection time in order to provide capabilities that afford maximum utility to the Warfighter. Where appropriate, modeling and simulation tools will be used to lower UIPE Increment 2 program risks, reduce costs, and ensure a high confidence in selected technologies.				
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> 1) JSGPM		3.401	-	-
<b>Description:</b> Advanced Respiratory Protection Initiative (ARPI) - M61 Filter Media Maturation				
<b>FY 2015 Accomplishments:</b> Completed Bed Design Analysis for second technology to be transitioned from Tech Base. Effort transitions to BA7 in FY16.				
<b>Title:</b> 2) UIPE - Increment 2		2.852	4.137	3.235
<b>Description:</b> Concept Design Evaluation/Technology Maturation and Risk Reduction				
<b>FY 2015 Accomplishments:</b> Released a Request for Information (RFI) seeking information on mature technology that can be used in the design of the UIPE Increment 2 focusing on a system that provides percutaneous protection to the Warfighter from chemical and biological warfare agents and other hazardous materials. Began baseline ensemble testing and risk reduction activities (based off results from the RFI) as part of the Trade Space Analysis and will feed the requirements development process.				
<b>FY 2016 Plans:</b> Complete trade space analysis. Initiate Technology Maturation and Risk Reduction activities based off trade space analysis results to down select viable material and closure candidates. Initiate developmental testing on material and closures to include physical properties testing, thermal burden testing, flame resistance testing, and aerosol and chemical swatch testing. Initiate garment design concept activities to include system level prototype testing such as Fluorescent Aerosol Swatch Testing (FAST), Thermal Manikin and Modeling, and Man In Simulant Testing (MIST). Award contract to purchase 200 ensembles for system level testing at a unit cost of \$2,000.00 each. Conduct Manufacturing Readiness Assessment (MRA) and Joint Integrated Logistics Assessment (JILA).				
<b>FY 2017 Plans:</b> Begin concept development and design in coordination with a manufacturing partner and continue system-level prototype testing. Conduct Preliminary Design Review (PDR), Systems Requirements Review (SRR), and JILA Self Assessment.				
<b>Title:</b> 3) SBIR/STTR		-	0.080	-
<b>FY 2016 Plans:</b> SBIR/STTR - FY16 - Small Business Innovative Research.				
<b>Accomplishments/Planned Programs Subtotals</b>		6.253	4.217	3.235

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IP4 / INDIVIDUAL PROTECTION (ACD&P)

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>			<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• IP5: INDIVIDUAL PROTECTION (EMD)	16.961	19.439	11.427	-	11.427	11.206	11.610	3.799	6.419	Continuing	Continuing
• JI0002: JS AIRCREW MASK (JSAM)	11.526	24.630	52.284	-	52.284	54.558	55.136	50.374	50.062	Continuing	Continuing
• JI0003: JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)	63.346	60.777	55.118	-	55.118	48.982	0.000	0.000	0.000	0	228.223
• 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 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 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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> IP4 / <i>INDIVIDUAL PROTECTION (ACD&amp;P)</i>
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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

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IP4 / INDIVIDUAL PROTECTION (ACD&P)
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JSGPM - HW S - Filter Prototyping	MIPR	Various : TBD	0.000	1.515	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
UIPE - HW S - Design Concept Development	MIPR	TBD : TBD	0.000	0.000		1.000	Apr 2016	0.500	Nov 2016	-		0.500	Continuing	Continuing	0.000
<b>Subtotal</b>			0.000	1.515		1.000		0.500		-		0.500	-	-	0.000

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JSGPM - ES S - Engineering Design Services	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.206	0.600	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
JSGPM - ES S - Engineering Support	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.016	0.200	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
UIPE - TD/D S - Integrated Product Team (IPT), Program, Engineering, and Technical Support	MIPR	Various : TBD	0.000	0.626	Apr 2015	0.983	Nov 2015	0.813	Nov 2016	-		0.813	Continuing	Continuing	0.000
UIPE - ES S - Systems Engineering (SRR/PDR)	MIPR	Various : TBD	0.000	0.000		0.000		0.250	Jan 2017	-		0.250	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.080	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			0.222	1.426		1.063		1.063		-		1.063	-	-	0.000

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IP4 / INDIVIDUAL PROTECTION (ACD&P)
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JSGPM - DTE S - Prototype Testing	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.214	0.800	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
UIPE - DTE S - Design Concept/System Level Testing - FAST, MIST, Thermal Manikin and Modeling	MIPR	Various : TBD	0.000	1.638	May 2015	1.300	May 2016	1.017	Nov 2016	-		1.017	Continuing	Continuing	0.000
<b>Subtotal</b>			0.214	2.438		1.300		1.017		-		1.017	-	-	0.000

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JSGPM - PM/MS S - Program Management and Technical Support	Various	Various : TBD	0.702	0.286	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
UIPE - PM/MS S - Program Management Support	MIPR	Various : TBD	0.000	0.588	May 2015	0.854	Jan 2016	0.655	Nov 2016	-		0.655	Continuing	Continuing	0.000
<b>Subtotal</b>			0.702	0.874		0.854		0.655		-		0.655	-	-	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
<b>Project Cost Totals</b>	1.138	6.253	4.217	3.235	-	3.235	-	-	0.000

**Remarks**

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IP4 / INDIVIDUAL PROTECTION (ACD&P)
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JSGPM - Bed Design Analysis (CoZZAT)	■	■																										
JSGPM - TD Contract Award (CoZZAT)		■	■																									
JSGPM - Prototype Development (CoZZAT)		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
JSGPM - Product Qualification Testing (CoZZAT)															■	■	■	■	■	■	■	■	■	■	■	■	■	
JSGPM - ECP Production (CoZZAT)																■	■	■	■	■	■	■	■	■	■	■	■	
JSGPM - Bed Design Analysis (MOF)																												
JSGPM - Prototype Development (MOF)																												
JSGPM - Prototype Testing (MOF)																												
JSGPM - M53A1 NIOSH Certification																												
UIPE Increment 2 - Baseline Ensemble Testing																												
UIPE Increment 2 - Material Development/ Tradespace Analysis																												
UIPE Increment 2 - Milestone A																												
UIPE Increment 2 - Manufacturing Readiness Review (MRA) / Technology Readiness Assessment (TRA)																												
UIPE Increment 2 - Design Concept/System Level Risk Reduction Testing																												
UIPE Increment 2 - System Level Design Concept Testing																												
UIPE Increment 2 - Preliminary Design Review (PDR)																												
UIPE Increment 2 - Capability Development Document (CDD)																												
UIPE Increment 2 - Milestone B																												

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IP4 / INDIVIDUAL PROTECTION (ACD&P)
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JSGPM - Bed Design Analysis (CoZZAT)	1	2015	2	2015
JSGPM - TD Contract Award (CoZZAT)	2	2015	3	2015
JSGPM - Prototype Development (CoZZAT)	2	2015	2	2017
JSGPM - Product Qualification Testing (CoZZAT)	1	2018	2	2018
JSGPM - ECP Production (CoZZAT)	3	2018	4	2018
JSGPM - Bed Design Analysis (MOF)	2	2017	4	2017
JSGPM - Prototype Development (MOF)	3	2017	1	2018
JSGPM - Prototype Testing (MOF)	2	2018	1	2019
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
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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				<b>Project (Number/Name)</b> IS4 / INFORMATION SYSTEMS (ACD&P)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
IS4: INFORMATION SYSTEMS (ACD&P)	-	7.585	7.464	5.928	-	5.928	6.187	1.451	0.870	0.783	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

This Project provides for Advanced Component Development and Prototypes (ACD&P). 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) Joint Effects Model (JEM); (2) the Joint Warning and Reporting Network (JWARN); (3) the Biosurveillance Portal (BSP) and (4) Software Support Activity (SSA).

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.

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.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> IS4 / <i>INFORMATION SYSTEMS (ACD&amp;P)</i>

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 throughout 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 an FY 2016 new start program to address USSOCOM requirements contained in an approved Information Systems Capability Development Document (IS CDD). BSP is a web-based enterprise environment that will facilitate collaboration, communication, and information sharing in support of the detection, management, and mitigation of man-made and naturally occurring biological events. BSP bridges the communication gaps in the biosurveillance domain to provide a central access point for biosurveillance information and situational awareness for DoD, interagency and allied partners supporting the early identification and response to biological events.

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

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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IS4 / INFORMATION SYSTEMS (ACD&P)
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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>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b>Title:</b> 1) BSP Program Management</p> <p><b>FY 2016 Plans:</b> Management and oversight of technology development and transition efforts for new technologies and capabilities designed to satisfy BSP requirements.</p> <p><b>FY 2017 Plans:</b> Continue management and oversight of technology development and transition efforts for new technologies and capabilities designed to satisfy BSP requirements.</p>	-	0.373	0.379
<p><b>Title:</b> 2) BSP Product Development</p> <p><b>FY 2016 Plans:</b> Prototyping, developing, and evaluating new technologies, models, and tools from both internal and external developers for transition into BSP.</p> <p><b>FY 2017 Plans:</b> Continue prototyping, developing, and evaluating new technologies, models, and tools from both internal and external developers for transition into BSP.</p>	-	0.687	0.721
<p><b>Title:</b> 3) JEM Prototyping and Development</p> <p><b>FY 2015 Accomplishments:</b> Developed and integrated additional capabilities into JEM Increment 2 software as defined in Requirements Definition Package 1. Began integration into Command and Control (C2) systems as defined in Requirements Definition Package 2.</p> <p><b>FY 2016 Plans:</b> Continue JEM Increment 2 software development of capabilities defined in Requirements Definition Package 1 and perform integration into C2 systems as defined in Requirements Definition Package 3. Begin software development of capabilities defined in Requirements Definition Package 3 that support Science and Technology community use of JEM Increment 2 software.</p> <p><b>FY 2017 Plans:</b> Complete development and integration of capability JEM Increment 2 software development of capabilities defined in Requirements Definition Package 1. Continue integration into C2 systems as defined in Requirements Definition Package 2. Continue development of capabilities defined in Requirements Definition Package 3 that support Science and Technology</p>	1.195	1.184	0.592

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016		
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
community use of JEM Increment 2 software. Begin integration of emerging science and technology capabilities received from Advanced Technical Development (ATD) phase and defined in Requirements Definition Package 3.				
<p><b>Title:</b> 4) JEM Test &amp; Evaluation (T&amp;E)</p> <p><b>FY 2015 Accomplishments:</b> Designed and configured and equipped Government test lab environment to support Government developmental test and operational assessment of JEM Increment 2 software. Performed Government development test of the JEM Increment 2 software. Conducted warfighter events to evaluate JEM software by operational users.</p> <p><b>FY 2016 Plans:</b> Continue lab based OT and limited scope service specific IOT&amp;E to support fielding of software with additional capability in 1QTR FY17. Conduct Service C2 Follow-on Test and Evaluation (FOT&amp;E) which will allow for IOC of JEM Increment 2 on service C2 systems in 1QTR FY17.</p> <p><b>FY 2017 Plans:</b> Continue Government development test on newly integrated models received from JSTO. Continue lab based warfighter events to assess usability and suitability of implementation of new models.</p>		1.551	1.201	0.246
<p><b>Title:</b> 5) JEM Management Support</p> <p><b>FY 2015 Accomplishments:</b> 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 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.</p> <p><b>FY 2016 Plans:</b> Complete Fielding Decision and IOC of Stand Alone capabilities of JEM Increment 2 in 1QTR FY16. 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 JILA and LOG DEMO in order to deploy JEM Increment 2 to the services. Complete development of RDP-3. Complete fielding decision and IOC of C2 systems capabilities of JEM Increment 2 in 4QTR FY16.</p> <p><b>FY 2017 Plans:</b> Continue to perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Continue to manage transition of mature science and technology from JSTO into the JEM increment 2 program.</p>		0.257	0.323	0.242

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016		
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
Continue development and execution of Build Decision 3 (BD3) for JEM Increment 2 while working within the agile development process. Complete development of Requirements Definition Package 4 (RDP-4), which defines requirements for C2 systems integration of the JEM software.				
<p><b>Title:</b> 6) JEM Technical Support</p> <p><b>FY 2015 Accomplishments:</b> Developed Verification, Validation, and Accreditation (VV&amp;A) package for JEM Increment 2.</p> <p><b>FY 2016 Plans:</b> Continue VV&amp;A package development for JEM Increment 2.</p> <p><b>FY 2017 Plans:</b> As new models are transitioned from JSTO, update VV&amp;A plans and perform V&amp;V to ensure models are mature enough to be integrated into the JEM Increment 2 baseline.</p>		0.368	0.553	0.257
<p><b>Title:</b> 7) JWARN Prototyping</p> <p><b>FY 2015 Accomplishments:</b> Performed software prototyping efforts supporting JWARN baseline development.</p> <p><b>FY 2016 Plans:</b> Continue software prototyping efforts supporting JWARN baseline development.</p> <p><b>FY 2017 Plans:</b> Continue software prototyping efforts supporting JWARN development for all three Requirements Definition Packages (RDPs).</p>		1.403	0.855	0.918
<p><b>Title:</b> 8) JWARN Product Development</p> <p><b>FY 2015 Accomplishments:</b> Performed JWARN Technology Demonstrations and User Assessments to evaluate and prove component and subsystem maturity of critical science and technology, system performance, and validate requirements within the IT BOX construct and Agile Process developed software prototype(s).</p> <p><b>FY 2016 Plans:</b> Continue JWARN Technology Demonstrations and User Assessments to evaluate and prove component and subsystem maturity of critical science and technology, system performance, and validate requirements within the IT BOX construct and Agile Process developed software prototype(s).</p> <p><b>FY 2017 Plans:</b></p>		1.588	0.334	0.420

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IS4 / INFORMATION SYSTEMS (ACD&P)		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
Continue JWARN Technology Demonstrations and User Assessments to evaluate and prove component and subsystem maturity of critical science and technology, system performance, and validate requirements within the IT BOX construct and Agile Process developed software prototype(s).				
<b>Title:</b> 9) JWARN Test and Evaluation (T&E)		0.337	0.443	0.556
<b>FY 2015 Accomplishments:</b> Provided Government developmental testing and analysis of component and subsystem maturity, to include including Technology Readiness Assessment(s), of software submitted for evaluation during prototyping. Continued the DoD Information Assurance Certification and Accreditation and Joint Interoperability Certification process. Completed development of the Test and Evaluation Master Plan (TEMP).				
<b>FY 2016 Plans:</b> Continue Government developmental testing and analysis of component and subsystem maturity, to include Technology Readiness Assessment(s), of software submitted for evaluation during prototyping. Continue the DoD Information Assurance Certification and Accreditation and Joint Interoperability Certification process. Conduct Initial Operational Test and Evaluation (IOT&E) of Capability Drops 1.1 and 1.2 for the USA, USMC and USAF.				
<b>FY 2017 Plans:</b> Continue Government developmental testing and analysis of component and subsystem maturity, to include Technology Readiness Assessment(s), of software submitted for evaluation during prototyping. Continue the DoD Information Assurance Certification and Accreditation and Joint Interoperability Certification process. Conduct Initial Operational Test and Evaluation (IOT&E) of Capability Drops 1.3 for USA, USMC, USAF and 2.1 for USA, USMC, USAF, and USN.				
<b>Title:</b> 10) JWARN Program Management Support		0.443	0.494	0.620
<b>FY 2015 Accomplishments:</b> Provided strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program within IT BOX construct and Agile Software development process.				
<b>FY 2016 Plans:</b> Will provide strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program within IT BOX construct and Agile Software development process.				
<b>FY 2017 Plans:</b>				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IS4 / INFORMATION SYSTEMS (ACD&P)		
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
Will provide strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program within IT BOX construct and Agile Software development process. Re-compete contract for prime developer.				
<b>Title:</b> 11) JWARN Technical Support		0.344	0.778	0.877
<b>FY 2015 Accomplishments:</b> Provided engineering and technical support for JWARN development under the IT BOX construct and Agile Software development processes. Continued independent system (Allied Tactical Publication-45D & E) verification, validation, and class type accreditation.				
<b>FY 2016 Plans:</b> Continue providing engineering and technical support for JWARN development under the IT BOX construct and Agile Software development processes. Continue independent system verification, validation, and class type accreditation as required.				
<b>FY 2017 Plans:</b> Continue to provide engineering and technical support for JWARN development under the IT BOX construct and Agile Software development processes. Continue independent system verification, validation, and class type accreditation as required.				
<b>Title:</b> 12) SSA Integrated Architecture		0.099	0.099	0.100
<b>FY 2015 Accomplishments:</b> Continued required modifications to the integrated Architecture on host platforms and document the infrastructure and technical standards, developing an acquisition Cybersecurity/IA strategy.				
<b>FY 2016 Plans:</b> Continue required modifications to the integrated Architecture on host platforms and document the infrastructure and technical standards, developing an acquisition IA strategy.				
<b>FY 2017 Plans:</b> Continue required modifications to the integrated Architecture on host platforms and document the infrastructure and technical standards, developing an acquisition Cybersecurity/IA strategy.				
<b>Title:</b> 13) SBIR/STTR		-	0.140	-
<b>FY 2016 Plans:</b> SBIR/STTR - FY16 - Small Business Innovative Research.				
<b>Accomplishments/Planned Programs Subtotals</b>		7.585	7.464	5.928

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IS4 / INFORMATION SYSTEMS (ACD&P)
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u> <u>Base</u>	<u>FY 2017</u> <u>OCO</u>	<u>FY 2017</u> <u>Total</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• IS5: INFORMATION SYSTEMS (EMD)	12.277	19.960	27.323	-	27.323	24.676	25.853	26.236	28.806	Continuing	Continuing
• 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
• JX0301: BIOSURVEILLANCE PORTAL (BSP)	0.000	1.620	1.220	-	1.220	1.220	1.220	1.220	1.098	Continuing	Continuing

**Remarks**

**D. Acquisition Strategy**

BIOSURVEILLANCE PORTAL (BSP)

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.

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.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program	<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> IS4 / <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
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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 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

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>	<b>Project (Number/Name)</b>
0400 / 4	PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	IS4 / <i>INFORMATION SYSTEMS (ACD&amp;P)</i>

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

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IS4 / INFORMATION SYSTEMS (ACD&P)
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<b>Product Development (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
BSP - SW S - Software Development	FFRDC	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	0.000		0.687	Dec 2015	0.721	Mar 2017	-		0.721	Continuing	Continuing	0.000
JEM - Increment 2 - SW SB - Prototype development	C/CPFF	General Dynamics Information Technologies : Fairfax, VA	3.708	1.249	Apr 2015	1.184	Apr 2016	0.592	Apr 2017	-		0.592	Continuing	Continuing	0.000
JWARN - SW S - Increment 2 - Prototype Development	C/CPFF	Northrop Grumman Corp. : Winter Park, FL	4.659	2.991	Dec 2014	1.189	Dec 2015	1.338	Dec 2016	-		1.338	Continuing	Continuing	0.000
<b>Subtotal</b>			8.367	4.240		3.060		2.651		-		2.651	-	-	0.000

<b>Support (\$ in Millions)</b>				<b>FY 2015</b>		<b>FY 2016</b>		<b>FY 2017 Base</b>		<b>FY 2017 OCO</b>		<b>FY 2017 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
JEM - Increment 2 - TD/D SB - Engineering support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.144	0.368	Nov 2014	0.553	Nov 2015	0.257	Nov 2016	-		0.257	Continuing	Continuing	0.000
JWARN - ES S - Increment 2 - Engineering Support	MIPR	Various : TBD	6.291	0.344	Dec 2014	0.778	Dec 2015	0.877	Dec 2016	-		0.877	Continuing	Continuing	0.000
SSA - TD/D C - Engineering Support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	0.092	0.099	Dec 2014	0.099	Nov 2015	0.100	Dec 2016	-		0.100	Continuing	Continuing	0.000
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		0.140	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			8.527	0.811		1.570		1.234		-		1.234	-	-	0.000

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IS4 / INFORMATION SYSTEMS (ACD&P)
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
JEM - Increment 2 - OTE S - OT&E	MIPR	Various : TBD	0.000	1.497	Dec 2014	1.201	Nov 2015	0.246	Dec 2016	-		0.246	Continuing	Continuing	0.000
JWARN - Increment 2 - OTHT SB - Gov't developmental testing	MIPR	Various : TBD	2.005	0.337	Mar 2015	0.443	Nov 2015	0.556	Nov 2016	-		0.556	Continuing	Continuing	0.000
<b>Subtotal</b>			2.005	1.834		1.644		0.802		-		0.802	-	-	0.000

<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BSP - PM/MS S - Program Management Support	Various	Various : TBD	0.000	0.000		0.373	Dec 2015	0.379	Dec 2016	-		0.379	Continuing	Continuing	0.000
JEM - Increment 2 - PM/MS C - Program Management	C/CPFF	Battelle Memorial Institute : Columbus, OH	1.648	0.257	Apr 2015	0.323	Apr 2016	0.242	Jun 2017	-		0.242	Continuing	Continuing	0.000
JWARN - Increment 2 - PM/MS SB - Program management	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	3.566	0.443	Dec 2014	0.494	Nov 2015	0.620	Dec 2016	-		0.620	Continuing	Continuing	0.000
<b>Subtotal</b>			5.214	0.700		1.190		1.241		-		1.241	-	-	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
	<b>Project Cost Totals</b>		24.113	7.585	7.464	5.928	5.928	-	-

**Remarks**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2017 Chemical and Biological Defense Program			<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> IS4 / INFORMATION SYSTEMS (ACD&P)	

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BSP - MS B	■																											
BSP - TEMP			■	■	■	■																						
BSP - RDP-1			■	■	■	■																						
BSP - Operational Test and Evaluation - RDP 1						■	■																					
BSP - IOC							■																					
BSP - RDP-2						■	■	■	■																			
BSP - RDP-3										■	■	■	■															
BSP - RDP-4													■	■	■	■												
BSP - RDP-5																■	■	■	■									
JEM Increment 2 - Prototype and Baseline Capability Developmental Testing																												
JEM Increment 2 - BD 1	■																											
JEM Increment 2 - RDP 2 / Build Decision 2				■																								
JEM Increment 2 - BD 2				■																								
JEM Increment 2 - FD 1					■																							
JEM Increment 2 - RDP 3					■																							
JEM Increment 2 - IOC Standalone					■																							
JEM Increment 2 - BD 3						■																						
JEM Increment 2 - FD 2								■																				
JEM Increment 2 - RDP 4										■																		
JEM Increment 2 - FD 3												■																
JEM Increment 2 - FD 4																									■			
JEM Increment 2 - C2 Integration Development Test																												
JEM Increment 2 - Govt DT / OT / V&V																												



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Chemical and Biological Defense Program			<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> IS4 / <i>INFORMATION SYSTEMS (ACD&amp;P)</i>	

Schedule Details

Events	Start		End	
	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 - Prototype and Baseline Capability Developmental Testing	1	2015	3	2017
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

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> IS4 / <i>INFORMATION SYSTEMS (ACD&amp;P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
JEM Increment 2 - Govt DT / OT / V&V	1	2015	4	2020
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 - Demonstrate Technology Transition Capabilities	1	2015	4	2021
SSA - Provide CM Services for Common User Products and Services	1	2015	4	2021
SSA - Provide Data Model Implementation Guidance	1	2015	4	2021

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>				<b>Project (Number/Name)</b> MB4 / <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>	-	114.230	79.516	65.648	-	65.648	61.660	41.306	29.440	50.001	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

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

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

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

Biosurveillance (BSV) actively gathers, analyzes, and interprets collected information that includes biosphere data that relate to disease activity and threats to human or animal health in order to achieve early warning of health threats, early detection of health events, and overall situational awareness of disease activity. BSV will align the biosurveillance efforts across DoD and national strategies. BSV will scope and influence BSV capabilities as products to meet Warfighter requirements through innovative management of key BSV initiatives. BSV requirements address medical and physical CBRN mission needs spanned in over 11 requirements documents and through Combatant Commander (COCOM) identified needs. BSV funds will support Joint US Forces Korea (USFK) Portal and Integrated Threat recognition (JUPITR) ATD/BSV 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 the laboratory to operational use and theater confirmation of a Biological Event. JUPITR ATD will consist of four legs; Early Warning (EW), Biological Identification Capabilities Sets (BICS), Assessment of Environmental Detectors (AED), and Biosurveillance Portal (BSP). The JUPITR ATD will provide the USFK with a holistic biosurveillance capability to provide early warning, detection, collection, identification, and theater confirmation of a Biological event. The JUPITR ATD consists of filling capability gaps through information sharing and communication systems and detection/diagnostic systems for the USFK. Outputs will focus on proving component, CONOPS, and subsystem transition into programs of record (PORs) and/or integration into existing PORs. Excursion for whole system live

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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> MB4 / <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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agent test (WSLAT) of AED units will support the CA Mission for Point Biological Detection. The Biosurveillance (BSV) program will transfer from the Medical Biological Defense (MB) Project to the Contamination Avoidance (CA) Project effective FY 2016.

The Countermeasures for Multi-Drug Resistance-Bacterial (CMDR-B) program develops medical countermeasures (MCMs) for Service members for protection against multi-drug resistant (MDR) bacteria, including Biological Warfare Agents (BWAs) and organisms that are genetically modified to be MDR. The resulting product(s) will be US Food and Drug Administration (FDA)-approved to prevent or minimize effects of MDR bacterial exposures. Leveraging collaborative Department of Defense (DoD), United States Government, and industry efforts will reduce program risk, lower program cost, and accelerate the delivery of therapeutics to the Warfighter. The program has established a translational team with the Joint Science and Technology Office for animal model work and pipeline candidates that could transition to CMDR-B for Advanced Development.

The 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 NGDS is an evolutionary acquisition for a 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 U.S. Food and Drug Administration (FDA)-cleared diagnostics to inform individual patient treatment as defined in the approved NGDS Capabilities Development Document (CDD) and CBR situational awareness and disease surveillance as defined in the Common Analytical Laboratory (CALs) CDD. NGDS Increment 1 will significantly improve diagnostic capability for deployable combat health support units (Role 2/3) while also improving operational suitability and affordability by developing FDA cleared biological warfare agent (BWA) and infectious disease in vitro diagnostic (IVD) assays on existing commercial diagnostic device with a well established FDA regulatory history and pipeline of commercial non-BWA infectious disease diagnostic tests. The NGDS Increment 1 program has a streamlined MS A to MS C acquisition strategy. BA4 supports the NGDS Increment 1 program through the Technology Maturation and Risk Reduction phase to complete competitive prototyping activities, initiate development of six BWA IVDs (Anthrax, Ebola, Marburg, Plague, Tularemia and Q-Fever), initiate the development of BWA environmental surveillance assays, multiservice operational test assessment, and Urgent Material Release of systems and Ebola emergency use diagnostic test in support of the DoD's Ebola Response and Preparedness initiative under Title X. 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. NGDS Increment 2 will also conduct collaborative work with the Defense Advanced Research Project Agency to accelerate development of a ruggedized Ebola detection and diagnostic system for use in austere environments in support of the DoD's Ebola Response and Preparedness initiative under Title X.

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

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The Department of Defense (DoD) supports the Technology Maturation and Risk Reduction (TMRR) phase for vaccines that are directed against validated biological warfare (BW) weapons to include bacteria, viruses, and toxins of biological origin. Effective medical countermeasures are urgently needed to negate the threat of these biological warfare (BW) agents. Vaccines have been identified as the most efficient countermeasure against the validated threat of BW weapons.

The Trivalent Filovirus Vaccine (VAC FILO) Program will offer protection against the threat of Ebola and Marburg viruses. The current budget supports development of trivalent prototypes to meet the BW threat through TMRR phase and acceleration of multiple prototypes in response to the Ebola outbreak to provide an interim fielding capability. The DoD anticipates that the Food Drug Administration (FDA) will approve this vaccine using the 'Animal Rule', which allows for the demonstration of efficacy on relevant animal model(s). During this phase a scalable manufacturing process is developed. This process will be used to develop current Good Manufacturing Practices (cGMP) lots suitable for a Phase 1 clinical trial. In addition, animal safety and efficacy studies will be conducted to support an Investigational New Drug (IND) submission to the FDA and conduct Phase 1 clinical trials. These efforts will support a Milestone B (MS B) decision and entry into the Engineering, Manufacturing, and Development (EMD) phase.

The Ricin toxin is a validated bioweapon threat that is lethal, available and easily produced. The program support one DoD vaccine candidate including manufacturing cGMP lots; and the continuation of animal model and assay development studies. These efforts also include clinical trials, regulatory integration, and a manufacturing technology transfer to the ADM capability. The DoD is the Public Health Emergency Medical Countermeasures lead for the advanced development of the Ricin Vaccine.

The Western, Eastern, and Venezuelan Equine Encephalitis (VAC WEVEE) Vaccine program initiated competitive prototypes in FY13 to reduce program risk, and is developing multiple prototypes through the Technology Development Phase. The efforts to be conducted during this period include: develop pilot scale manufacturing processes and manufacture of cGMP lots to support nonclinical and clinical studies; develop vaccine formulation that meets the logistical requirements of the DoD; conduct non-clinical GLP safety studies; submit Investigational New Drug (IND) applications; and conduct Phase 1 clinical human safety studies. 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). These efforts will support a Milestone B decision and entry into the EMD phase. The Western, Eastern, and Venezuelan Equine Encephalitis (VAC WEVEE) Vaccine will protect the Warfighter against aerosolized exposure to three strains of alphaviruses; western, eastern and Venezuelan equine encephalitis viruses. VAC WEVEE Program is developing competitive prototypes. The early advanced development efforts include: develop pilot scale manufacturing processes and manufacture of cGMP lots to support nonclinical and clinical studies; develop vaccine formulation that meets the logistical requirements of the DoD; conduct non-clinical GLP safety studies; submit Investigational New Drug (IND) applications; and conduct Phase 1 clinical human safety studies. 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).

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> 1) AV TX - Candidate 2 (Filovirus TRL 4)	-	-	33.751
<b>FY 2017 Plans:</b> Conduct source selection activities and award contract for antiviral therapeutic countermeasure. Conduct pilot aerosol efficacy studies in a BSL 4. Conduct Phase 1 clinical safety trials and relevant toxicity studies. Initiate manufacturing process optimization			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016		
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
activities for scale-up to meet DoD production requirements. Initiate Non-Human Primate (NHP) model enhancement to support approval under the FDA Animal Rule.				
<p><b>Title:</b> 2) BSL-4 GLP T&amp;E</p> <p><b>FY 2015 Accomplishments:</b> Achieved IOC; continued to provide strategic planning, program management, and scheduling; broadened and expanded contract support plans to meet increased customer demand; conducted GLP BSL-4 T&amp;E medical countermeasure studies in a safe and secure environment.</p> <p><b>FY 2016 Plans:</b> Continue to provide strategic planning, program management, and scheduling for GLP BSL-4 T&amp;E capability, conduct secondary capability assessments, develop and implement CONOPS and plans for transition to new facility, conduct GLP BSL-4 T&amp;E medical countermeasure studies in a safe and secure environment.</p> <p><b>FY 2017 Plans:</b> Continue to provide strategic planning, program management, and scheduling for GLP BSL-4 T&amp;E capability, conduct secondary capability assessments, develop and implement CONOPS and plans for transition to new facility, conduct GLP BSL-4 T&amp;E medical countermeasure studies in a safe and secure environment.</p>		5.806	6.118	6.454
<p><b>Title:</b> 3) BSV</p> <p><b>FY 2015 Accomplishments:</b> Finalized fusion and integration development for the Early Warning leg.</p>		9.681	-	-
<p><b>Title:</b> 4) BSV</p> <p><b>FY 2015 Accomplishments:</b> Released Biosurveillance Portal Software version 3.0 and initiated CENTCOM and National Capital Region Biosurveillance Portal efforts.</p>		25.686	-	-
<p><b>Title:</b> 5) BSV</p> <p><b>FY 2015 Accomplishments:</b> Transitioned BICS items to programs of record.</p>		5.616	-	-
<p><b>Title:</b> 6) BSV</p> <p><b>FY 2015 Accomplishments:</b></p>		3.141	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
Executed special studies and initiatives to address biosurveillance capability needs across the CBRNE program in alignment with DoD and National Strategies. Effort will support technology transitions to G-BSP, CALS, JBTDS and NGDS.				
<b>Title:</b> 7) BSV		2.127	-	-
<b>FY 2015 Accomplishments:</b> Funding supports labor and travel for key functional areas of program management, systems engineering, test and evaluation planning and acquisition strategy development.				
<b>Title:</b> 8) CMDR-B		3.250	7.846	3.135
<b>FY 2015 Accomplishments:</b> Initiated anti-bacterial MCM development efforts for a US FDA-approved therapeutic that prevents or minimizes the effects of MDR (Multi-Drug Resistant) bacterial exposures (e.g., Bacillus anthracis, Yersinia pestis, Brucella spp., Burkholderia mallei, Francisella tularensis, and Burkholderia pseudomallei). Development efforts included supporting Pharmacokinetic studies of two compounds against a pathogen of interest and pivotal animal efficacy studies in non-human primates. Initiated Technology Maturation and Risk Reduction (TMRR) Phase activities.				
<b>FY 2016 Plans:</b> Continue development of anti-bacterial MCM development efforts leveraging whole of Government anti-microbial resistant investments. Funded efforts will include pivotal animal studies to determine drug efficacy.				
<b>FY 2017 Plans:</b> Continue the development of one or more MCM against MDR bacteria against one or more of the bacterial BWA (e.g., Bacillus anthracis, Yersinia pestis, Brucella spp., Burkholderia mallei, Francisella tularensis, and Burkholderia pseudomallei). Efforts will include IND Filing and Pilot Animal Studies.				
<b>Title:</b> 9) EID Tx		1.300	-	-
<b>FY 2015 Accomplishments:</b> Conducted enhancement of the alphavirus NHP animal model in conjunction with Medical Countermeasures - Joint Vaccine Acquisition Program (MCS-JVAP).				
<b>Title:</b> 10) NGDS - Increment 1		6.191	-	-
<b>FY 2015 Accomplishments:</b> Conducted development of Anthrax, Ebola, Marburg, IVD assays and initiated development of Plague, Q-Fever, Tularemia IVD assays. Conducted pre-submission meeting with the FDA. Future development will be funded with BA7.				
<b>Title:</b> 11) NGDS - Increment 1		5.002	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Description:</b> Title X - Ebola Response				
<b>FY 2015 Accomplishments:</b> Completed emergency fielding of NGDS Increment 1 systems and Ebola emergency use assays.				
<b>Title:</b> 12) NGDS - Increment 2		3.598	-	-
<b>FY 2015 Accomplishments:</b> Initiated new CBR diagnostic assay development and optimization efforts on DoD-fielded medical devices. Evaluated interagency-developed handheld systems/assays for competitive prototyping and early operational testing.				
<b>Title:</b> 13) NGDS - Increment 2		2.452	-	-
<b>Description:</b> Title X - Ebola Response				
<b>FY 2015 Accomplishments:</b> Continued collaborative development with DARPA to accelerate development through contract award for evaluations of three ruggedized Ebola detection and commercial diagnostic system capable for use in austere environments.				
<b>Title:</b> 14) VAC FILO		4.000	7.237	2.700
<b>FY 2015 Accomplishments:</b> Continued non-clinical efficacy studies and initiated non-clinical safety studies for competitive prototypes and acceleration of efforts in response to Ebola outbreak.				
<b>FY 2016 Plans:</b> Continue and complete non-clinical efficacy and safety studies for competitive multiple candidates.				
<b>FY 2017 Plans:</b> Complete toxicology safety studies for multiple prototypes. Analyze clinical and nonclinical immunological data to establish a correlate of protection for each vaccine prototype.				
<b>Title:</b> 15) VAC FILO		3.117	11.050	3.518
<b>FY 2015 Accomplishments:</b> Completed the small scale manufacturing process development of individual filovirus vaccine components (Ebola, Sudan, Marburg). Initiated the cGMP production of bulk drug substance for one of the vaccine components, Ebola. Continued formulation development of the multi component vaccine for multiple vaccine prototypes. Continued qualification efforts for				

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
immunological assays and initiated the validation of one of the critical immunological assay (Ebola ELISA). Accelerated development efforts for the Ebola manufacturing and assays in response to Ebola outbreak. <b>FY 2016 Plans:</b> Complete formulation development, assay qualification and cGMP pilot scale production of competitive candidates. Initiate stability testing. <b>FY 2017 Plans:</b> Complete assay qualification efforts in support of clinical trials. Continue stability testing.				
<b>Title:</b> 16) VAC FILO <b>FY 2015 Accomplishments:</b> Conducted pre-IND meeting with the FDA on first Ebola prototype. Submitted IND for the Ebola vaccine. Conducted pre-IND meeting with the FDA for the multi component filovirus vaccine (Ebola, Sudan, and Marburg). Submitted Ebola ELISA validation protocol to the FDA. <b>FY 2016 Plans:</b> Continue to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. <b>FY 2017 Plans:</b> Finalize phase 1 clinical study reports for each clinical trial conducted by 1QFY17 in support of Milestone B in 2QFY17. Conduct End of Phase 1 meetings with the FDA.		3.200	4.859	2.500
<b>Title:</b> 17) VAC FILO <b>FY 2015 Accomplishments:</b> Continued to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support. <b>FY 2016 Plans:</b> Conduct pre-IND meeting with FDA on second prototype. Finalize and submit IND to the FDA for competitive prototypes. Initiate Phase 1 clinical trials for competitive prototypes. Initiate and complete trivalent Phase 1 clinical trial. <b>FY 2017 Plans:</b> Continue to provide strategic/tactical planning, Government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.		1.000	13.126	1.000
<b>Title:</b> 18) VAC FILO		9.513	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<p><b>Description:</b> Title X - Ebola Response</p> <p><b>FY 2015 Accomplishments:</b> rVSVDG ZEBOV is one of the three Ebola vaccine candidates identified for expedited development. Supported GLP toxicology studies (Battelle); Nonhuman primate efficacy studies (USAMRIID); Immunological testing of Phase 1 samples (Battelle/USAMRIID); qualification and validation of Human ELISA (Battelle/Focus Diagnostics). These efforts were needed to support the Phase II/III clinical trials and interim fielding capability of this candidate in FY15. This vaccine candidate will only address EBOLA not the core trivalent effort, however, data from these studies will support development and acceleration of the trivalent vaccine. The ELISA efforts were critical for detecting dose selection for the vaccine used throughout Western Africa and other outbreak countries to establish a standardized assay for measuring the immune response across multiple vaccine platforms.</p>			
<p><b>Title:</b> 19) VAC RIC</p> <p><b>FY 2016 Plans:</b> Initiate manufacturing technology transfer to the ADM capability.</p> <p><b>FY 2017 Plans:</b> Continue manufacturing technology transfer to the ADM capability. Continue Phase 1b clinical study. Continue animal model and assay development.</p>	-	2.590	1.173
<p><b>Title:</b> 20) VAC WEVEE</p> <p><b>FY 2015 Accomplishments:</b> Continued non-clinical safety and efficacy studies for competitive prototypes. Pre-IND filed with the FDA for the VLP vaccine prototype developed through the Interagency Agreement (IAA) with the National Institute of Allergy and Infectious Diseases (NIAID) VRC. Received FDA feedback and concurrence on Animal Model Strain Selection document and purchased Intellectual Property for the VRP WEVEE vaccine.</p> <p><b>FY 2016 Plans:</b> Continue non-clinical safety, efficacy and IND-enabling studies for competitive candidates.</p> <p><b>FY 2017 Plans:</b> Complete non-clinical safety, efficacy and IND-enabling studies for competitive prototypes. Continue Phase 1 Clinical Trial for the VLP vaccine prototype.</p>	7.855	8.716	3.117
<p><b>Title:</b> 21) VAC WEVEE</p> <p><b>FY 2015 Accomplishments:</b></p>	8.463	11.525	3.800

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
Completed manufacturing process development, and cGMP production of VLP prototype. Continued manufacturing process development of other competitive prototypes, including VRP prototype. Initiated assay development to characterize the immune response on both animals and humans and to characterize the drug substance.  <b>FY 2016 Plans:</b> Continue small-scale manufacturing process development, and initiate GMP manufacturing for VRP prototype.  <b>FY 2017 Plans:</b> Complete cGMP production of bulk drug substance and formulation efforts. Initiate cGMP production of final drug product for competitive prototypes to support Phase 1 clinical trials. Complete assay development and initiate assay qualification efforts.				
<b>Title:</b> 22) VAC WEVEE  <b>FY 2015 Accomplishments:</b> Prepared for submission of IND for one prototype.  <b>FY 2016 Plans:</b> Submit IND for prototype one and initiate clinical trial.  <b>FY 2017 Plans:</b> Submit IND for additional prototypes and continue Phase 1 Clinical Trial.		2.100	3.748	2.000
<b>Title:</b> 23) VAC WEVEE  <b>FY 2015 Accomplishments:</b> Continued strategic/tactical planning, Government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, regulatory and technical support.  <b>FY 2016 Plans:</b> Continued strategic/tactical planning, Government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, regulatory and technical support.  <b>FY 2017 Plans:</b> Continue strategic/tactical planning, Government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, regulatory and technical support.		1.132	1.123	2.500
<b>Title:</b> 24) SBIR/STTR  <b>FY 2016 Plans:</b>		-	1.578	-

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

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b> SBIR/STTR - FY16 - Small Business Innovative Research.	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Accomplishments/Planned Programs Subtotals</b>	114.230	79.516	65.648

**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
• MB5: MEDICAL BIOLOGICAL DEFENSE (EMD)	169.400	107.883	106.223	-	106.223	170.667	190.756	188.537	181.318	Continuing	Continuing
• 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
• JM2222: BIOSCAVENGER (BSCAV)	0.000	0.000	0.000	-	0.000	0.000	0.000	0.000	4.000	Continuing	Continuing
• JM6677: ADVANCED ANTICONVULSANT SYSTEM (AAS)	0.000	11.133	0.000	-	0.000	7.215	0.000	0.000	0.000	0	18.348
• 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
• JX0300: BIOSURVEILLANCE (BSV)	1.311	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0	1.311

**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

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deferred for award until FY17 when BA4 funding is available to the program. The overall regulatory approach of the program remains to pursue development of products to FDA approval under the Animal Rule. The program will conduct human clinical safety studies, pilot and pivotal animal efficacy, and toxicology studies, required for FDA approval. The performers will submit New Drug Applications/Biologic License Agreements for the therapeutics during the EMD Phase. During the Production and Deployment phase, full rate manufacturing and stockpile production will be pursued. If the FDA mandates post-marketing surveillance studies, they will be conducted during Production and Deployment.

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

The MCM T&E Capability is being implemented in three phases. Phase 1 (completed in FY13) established support contracts, agreements, and developed a capability implementation plan to utilize and maintain the existing and planned new US Army Medical Research Institute of Infectious Diseases (USAMRIID) facility and staff. Phase 2 executes the implementation plan, bringing the facility, equipment, personnel, and technical and business processes into a state of readiness to conduct BSL-4 studies under full GLP compliance. In FY14, the capability established a new Program Management Office and organizational structure, implemented information technology tools for secure management of data, trained and integrated GLP-qualified staff, and validated supporting technology for conduct of T&E studies. In FY15 conducted secondary capability assessments and refinements, broadening and adapting contract support plans to meet increased customer demand, updating the Life-Cycle Sustainment Plan, and conducting multiple T&E studies. MCM T&E support costs during Phase 2 and beyond will be offset by costs from specific MCM development programs where possible. The period of FY16 to FY19 will continue secondary capability assessments and refinements and will focus on transition of the capability to the new USAMRIID facility, after which Full Operational Capability (FOC) will be reached.

**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 CDBP (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).

**COUNTERMEASURES FOR DRUG RESISTANT BACTERIA (CMDR-B)**

The CMDR-B program develops MCMs for MDR (multi-drug resistant) bacteria, including BWAs and organisms that are genetically modified to be MDR. The resulting product(s) will be US FDA-approved to prevent or minimize effects of MDR bacterial exposures. CMDR-B will follow an integrated acquisition and regulatory pathway to achieve FDA approval for drug candidates. The CMDR-B Program intends to fund one or more candidates to address competitive prototyping and mitigate drug development risk. In FY13, a Market Survey and RFI were completed assessing current anti-bacterial countermeasure technologies. Results confirmed technologies exist that are of sufficient maturity to enter advanced development. CMDR-B is establishing collaborative relationships with DoD, other USG entities and international partners to reduce program risk, lower program cost, and accelerate delivery of MCMs to the Warfighter. Milestone A obtained in 3QFY15.

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**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.

**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.

**FILOVIRUS (VAC FILO)**

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

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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.

**RICIN VACCINE (VAC RIC)**

A ricin vaccine will protect against exposure to the ricin toxin, an identified BW threat. The Government will serve as the integrator during this phase by managing and coordinating the various vaccine development efforts. Additionally, the Program Office will partner with DoD agencies and laboratories to include U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID). Due to an issue discovered in vaccine manufacturing in FY15, the planned Phase 1b clinical study is delayed 9-12 months. FY16 and FY17 funding will fund manufacturing technology transfer and pilot lot production at the ADM capability.

**WESTERN EASTERN VENEZUELAN EQUINE ENCEPH VACCINE (VAC WEVEE)**

The WEVEE acquisition strategy uses a parallel evaluation of Virus Replicon Particle (VRP) and Virus Like Particle (VLP) vaccine prototypes through a Phase 1 clinical trials to achieve competitive prototyping in the Technology Development phase. The lead prototype is more mature than the second prototype. Several potential decision points will be used to assess the prototypes for possible down select. The schedule is based on a down select to one prototype. The Government will serve as the integrator during this phase by managing and coordinating the various vaccine development efforts. At MS B, the best prototype will be selected through a full and open competition to transition to the Engineering and Manufacturing Development (EMD) phase, with delivery of a FDA-licensed WEVEE vaccine. The development efforts will be a Cost Plus and Firm Fixed Price CLINs. Additionally, the Program Office will partner Health and Human Services/National Institute of Allergies and Infectious Diseases (HHS/NIAID), DoD agencies, and laboratories to include U.S. Army Medical Research Institute of Infectious Diseases (USMRIID). This DoD program is the Public Health Emergency Medical Countermeasures lead for the advanced development of this vaccine and is leveraging expertise across the Federal and International sectors to ensure programmatic success.

**E. Performance Metrics**

N/A

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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AV TX - Candidate 2 - Pilot Aerosol Animal Efficacy Studies	C/CPIF	TBD : TBD	0.000	0.000		0.000		8.229	Mar 2017	-		8.229	Continuing	Continuing	0.000
AV TX - Candidate 2 - Manufacturing process optimization and scale up	C/CPIF	TBD : TBD	0.000	0.000		0.000		10.084	Dec 2016	-		10.084	Continuing	Continuing	0.000
AV TX - Candidate 2 - Phase 1 Safety Trials	C/CPIF	TBD : TBD	0.000	0.000		0.000		8.055	Mar 2017	-		8.055	Continuing	Continuing	0.000
AV TX - Candidate 2 - Non Human Primate Animal Model Enhancement	C/CPIF	TBD : TBD	0.000	0.000		0.000		3.118	Mar 2017	-		3.118	Continuing	Continuing	0.000
BSV - SW GFPR - Portal SW Design & Integration	MIPR	Various : TBD	25.257	25.686	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - SW SB - BICS Portal Hardware Component and consumables	MIPR	Various : TBD	10.375	5.616	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - HW SB - Early Warning Hardware & Integration	MIPR	Various : TBD	12.521	9.681	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CMDR-B - SW GFPR - CMDR-B MCM Advanced Development - Contract 1	C/CPIF	Various : TBD	0.000	0.000		6.037	May 2016	2.221	May 2017	-		2.221	Continuing	Continuing	0.000
NGDS - HW C - Network Integration	MIPR	JPM Information Systems (JPM IS) : San Diego, CA	0.631	0.110	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGDS - HW C - Begin and continue diagnostic assay optimization for Plague, Q-Fever and Tularemia IVD.	C/CPFF	BioFire Dx : Salt Lake City, UT	2.000	6.191	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGDS - Increment 2 - HW C - Hardware/Assay Development	C/CPFF	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	3.443	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
NGDS - HW C - Imitate and complete emergency fielding of systems and Ebola EUA assays	Various	BioFire Dx : Salt Lake City, UT	0.000	3.610	Nov 2014	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGDS - SW GFPR - Complete development of a ruggedized Ebola detection and diagnostic system capability	Various	Various : TBD	0.000	2.334	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - HW S - Non Clinical Studies	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	13.686	1.457	Dec 2014	2.500	Dec 2015	2.700	Dec 2016	-		2.700	Continuing	Continuing	0.000
VAC FILO - SW GFPR - Manufacturing Pilot Scale Prototype 1	C/CPIF	Various : TBD	3.790	2.376	Jan 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - SW GFPR - Manufacturing Pilot Scale Multiple Prototypes	MIPR	Defense Technical Information Center (DTIC) : Fort Belvoir, VA	1.545	2.624	Mar 2015	9.485	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
VAC RIC - SW GFPR - Manufacturing Tech Transfer, animal model & assay development	Various	Various : TBD	1.700	0.000		0.000		0.280	Mar 2017	-		0.280	Continuing	Continuing	0.000
VAC WEVEE - HW S - Manufacturing and Process Development	MIPR	National Institute of Allergy & Infectious Diseases : Bethesda, MD	12.773	3.786	Dec 2014	3.398	Dec 2015	3.300	Dec 2016	-		3.300	Continuing	Continuing	0.000
VAC WEVEE - HW S - Manufacturing and Process Development #2	MIPR	Battelle Memorial Institute : Columbus, OH	0.000	0.560	Dec 2014	6.130	Dec 2015	1.000	Dec 2016	-		1.000	Continuing	Continuing	0.000
VAC WEVEE - SW GFPR - Intellectual Property	C/FFP	Various : TBD	3.000	3.100	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000

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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			87.278	70.574		27.550		38.987		-		38.987	-	-	0.000

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BSV - ES S - JUPITR System Engineer & System Support	Various	Various : TBD	5.325	1.900	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - ES S - Special studies and support	PO	Various : TBD	0.000	1.088	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
NGDS - TD/D C - NGDS IN 1 and 2 Studies and WIPT Support	MIPR	Various : TBD	3.395	0.855	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - ES S - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	2.478	0.250	Dec 2014	0.300	Dec 2015	0.350	Dec 2016	-		0.350	Continuing	Continuing	0.000
VAC RIC - ES S - Regulatory Integration	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	0.282	0.000		0.160	Dec 2015	0.090	Dec 2016	-		0.090	Continuing	Continuing	0.000
VAC WEVEE - ES S - Regulatory Integration	MIPR	National Institute of Allergy & Infectious Diseases : Bethesda, MD	2.778	0.100	Dec 2014	0.100	Dec 2015	0.150	Dec 2016	-		0.150	Continuing	Continuing	0.000
VAC WEVEE - ES S - Regulatory Integration #2	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	0.047	0.123	Dec 2014	0.123	Dec 2015	0.150	Dec 2016	-		0.150	Continuing	Continuing	0.000

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<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD : TBD	0.000	0.000		1.578	Dec 2016	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			14.305	4.316		2.261		0.740		-		0.740	-	-	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BSL4 GLP T&E - DTE SB - T&E Facility	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	5.825	5.806	Dec 2014	6.118	Dec 2015	6.454	Dec 2016	-		6.454	Continuing	Continuing	0.000
BSV - OTHT C - JUPITR Operational Demos OTC	MIPR	Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD	0.000	0.420	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CMDR-B - DTE S - Pharmacokinetic studies of pathogens of interest and animal efficacy studies.	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.000	2.776	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
EID TX - OTHT C - Developmental Testing	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.000	1.300	Jul 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - OTHT SB - Testing, Evaluation, and Clinical Trials	MIPR	Battelle Memorial Institute : Columbus, OH	22.586	7.001	Dec 2014	7.730	Dec 2015	3.300	Dec 2016	-		3.300	Continuing	Continuing	0.000

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<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
VAC FILO - OTE C - Assay Development Prototype 1	C/CPIF	Various : TBD	5.792	0.000		4.857	Dec 2015	2.000	Dec 2016	-		2.000	Continuing	Continuing	0.000
VAC FILO - OTE C - Assay Development Prototype 2	C/CPIF	TBD : TBD	5.500	0.356	Dec 2014	4.500	Dec 2015	0.368	Mar 2017	-		0.368	Continuing	Continuing	0.000
VAC FILO - OTHT SB - Testing, Evaluation, and Clinical Trials #2	C/CPIF	Texas BioMedical Research Institute : San Antonio, TX	0.000	0.000		1.650	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
VAC RIC - OTHT C - Phase 1b Clinical Study	MIPR	TBD : TBD	1.450	0.000		0.000		0.803	Dec 2016	-		0.803	Continuing	Continuing	0.000
VAC RIC - DTE C - Manufacturing Tech Transfer	Various	Various : TBD	0.000	0.000		2.430	Jan 2016	0.000		-		0.000	Continuing	Continuing	0.000
VAC WEVEE - OTE C - Test and Evaluation Assay Development	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	6.491	2.218	Dec 2014	5.453	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
VAC WEVEE - OTE C - Test and Evaluation Assay Development #2	MIPR	Battelle Memorial Institute : Columbus, OH	1.311	5.216	Dec 2014	5.260	Dec 2015	4.500	Dec 2016	-		4.500	Continuing	Continuing	0.000
VAC WEVEE - OTE C - Clinical Trial (Prototype)	MIPR	Various : TBD	0.000	2.170	Sep 2015	0.900	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
<b>Subtotal</b>			48.955	27.263		38.898		17.425		-		17.425	-	-	0.000

**Remarks**  
CMDR-B -

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<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AV TX - Candidate 2 - PM/MS - SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.000		0.000		1.330	Jan 2017	-		1.330	Continuing	Continuing	0.000
AV TX - Candidate 2 - PM/MS - SB - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.000		0.000		1.013	Jan 2017	-		1.013	Continuing	Continuing	0.000
AV TX - Candidate 2 - PM/MS - SB - Management Support #3	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.000	0.000		0.000		0.585	Jan 2017	-		0.585	Continuing	Continuing	0.000
AV TX - Candidate 2 - PM/MS - SB Management Support	C/FP	Various : TBD	0.000	0.000		0.000		1.337	Jan 2017	-		1.337	Continuing	Continuing	0.000
BSV - PM/MS S - Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.261	0.401	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
BSV - PM/MS S - Management Support #2	MIPR	Various : TBD	2.252	1.459	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
CMDR-B - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.215	Sep 2015	0.422	Sep 2016	0.223	Jan 2017	-		0.223	Continuing	Continuing	0.000
CMDR-B - PM/MS SB - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.000	0.177	Jan 2015	0.610	Jan 2016	0.140	Jan 2017	-		0.140	Continuing	Continuing	0.000
CMDR-B - PM/MS SB - Management Support #3	Allot	JPM Medical Countermeasure	0.000	0.082	Sep 2015	0.161	Sep 2016	0.170	Jan 2017	-		0.170	Continuing	Continuing	0.000

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<b>Management Services (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		Systems (JPM MCS) : Fort Detrick, MD													
CMDR-B - PM/MS C - Contractor Systems Engineering/ Program Management Support	C/FP	Various : TBD	0.000	0.000		0.616	Aug 2016	0.381	Aug 2017	-		0.381	Continuing	Continuing	0.000
NGDS - PM/MS SB - Product Management Systems Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.950	0.700	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - PM/MS S - Contractor Support	C/FFP	Various : TBD	1.200	2.066	Mar 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
VAC FILO - PM/MS - Joint Vaccine Acquisition Program Management	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	2.440	0.700	Dec 2014	0.250	Dec 2015	1.000	Dec 2016	-		1.000	Continuing	Continuing	0.000
VAC FILO - PM/MS S - Program Management/ Program Manager Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	1.993	4.000	Dec 2014	5.000	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000
VAC WEVEE - PM/MS S - Program Manager Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.040	1.277	Dec 2014	1.344	Dec 2015	1.000	Dec 2016	-		1.000	Continuing	Continuing	0.000
VAC WEVEE - PM/MS C - Contractor Systems Engineering Program Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.432	1.000	Dec 2014	1.405	Mar 2016	1.317	Dec 2016	-		1.317	Continuing	Continuing	0.000
VAC WEVEE - PM/MS S - Joint Vaccine Acquisition Program Management	Allot	JPM Medical Countermeasure Systems (JPM	0.455	0.000		0.999	Dec 2015	0.000		-		0.000	Continuing	Continuing	0.000





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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)
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	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
CMDR-B - Milestone A Decision			■																									
CMDR-B - TMRR Activities			■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
CMDR-B - TMRR Contract Awards							■																					
CMDR-B - Milestone B Decision																■												
EID TX - Expand the EID Tx effort to include an additional high priority DOD biothreat viral agent	■	■	■	■																								
EID TX - LE Initiate and Complete Proof of Concept Studies		■	■																									
EID TX - LE Milestone B				■																								
EID TX - NI Animal Model Enhancement				■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
NGDS - Anthrax/Viral Hemorrhagic Fever IVD Development and clearance	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
NGDS - MS C							■	■																				
NGDS - IOC								■																				
NGDS - FOC																■												
NGDS - Environmental Assay Development							■	■																				
NGDS - Multi Service Operational Test							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
NGDS - Air Force, Army, and Navy IOC												■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
NGDS - MS A/IPR		■																										
NGDS - IPR							■																					
NGDS - Contract Award & Early Operational Assessment								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
VAC FILO - Manufacturing Pilot Scale	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
VAC FILO - Assay Development and Qualification Competitive Prototypes	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AV TX - Candidate 2 - Contract Award	1	2017	1	2017
AV TX - Candidate 2 - Pilot Aerosol Animal Efficacy Studies	2	2017	1	2018
AV TX - Candidate 2 - Phase 1 Clinical Safety Trials	3	2017	4	2018
AV TX - Candidate 2 - Manufacturing Process Optimization and Scale Up	1	2017	4	2018
AV TX - Candidate 2 - Non Human Primate Animal Model Development	2	2017	2	2019
BSL4 GLP T&E - BSL-4 GLP T&E - Maintain Bio-Safety Level BSL-4 Test and Evaluation Capability	1	2015	4	2021
BSV - JUPITR ATD	1	2015	3	2016
BSV - JUPITR ATD Op Demo	3	2015	4	2015
BSV - JUPITR ATD Residuals	1	2016	4	2018
BSV - Biological Identification Capability Sets (BICS) Exercises	1	2015	1	2016
BSV - Biosurveillance (BSP) Portal Software 3.0	4	2015	4	2015
BSV - Early Warning Fusion and Integration	1	2015	3	2015
BSV - Assessment of Environmental Detectors (AED) Down-Select	2	2015	2	2015
BSV - Residual Purchase - Additional Systems	2	2016	3	2018
BSV - Transition of purchase of residual end items	4	2015	3	2018
CMDR-B - Initiate anti-bacterial MCM development efforts	1	2015	4	2015
CMDR-B - Milestone A Decision	3	2015	3	2015
CMDR-B - TMRR Activities	3	2015	1	2019
CMDR-B - TMRR Contract Awards	3	2016	3	2016
CMDR-B - Milestone B Decision	1	2019	1	2019
EID TX - Expand the EID Tx effort to include an additional high priority DOD biothreat viral agent	1	2015	4	2015

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)
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Events	Start		End	
	Quarter	Year	Quarter	Year
EID TX - LE Initiate and Complete Proof of Concept Studies	2	2015	3	2015
EID TX - LE Milestone B	4	2015	4	2015
EID TX - NI Animal Model Enhancement	4	2015	4	2016
NGDS - Anthrax/Viral Hemorrhagic Fever IVD Development and clearance	1	2015	3	2016
NGDS - MS C	2	2016	4	2016
NGDS - IOC	4	2016	2	2017
NGDS - FOC	2	2019	2	2019
NGDS - Environmental Assay Development	1	2016	3	2016
NGDS - Multi Service Operational Test	1	2016	4	2017
NGDS - Air Force, Army, and Navy IOC	2	2017	2	2018
NGDS - MS A/IPR	2	2015	2	2015
NGDS - IPR	1	2016	1	2016
NGDS - Contract Award & Early Operational Assessment	3	2016	4	2017
VAC FILO - Manufacturing Pilot Scale	1	2015	4	2016
VAC FILO - Assay Development and Qualification Competitive Prototypes	1	2015	4	2016
VAC FILO - Non-clinical efficacy and safety studies	1	2015	4	2016
VAC FILO - Conduct Final Drug Product Formulation	1	2015	1	2017
VAC FILO - Manufacturing process development/assay and formulation development; cGMP Manufacturing	1	2015	4	2016
VAC FILO - Phase 1 Clinical Trials Competitive Prototypes	3	2015	3	2017
VAC FILO - Pre-IND meeting with FDA (first prototype)	3	2015	3	2015
VAC FILO - Pre-IND meeting with FDA (second prototype)	1	2016	1	2016
VAC FILO - IND Submission (first prototype)	2	2016	2	2016
VAC FILO - Second IND Submission	2	2016	2	2016
VAC FILO - Milestone B	2	2017	2	2017
VAC RIC - Assay Development	1	2015	4	2021

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> MB4 / <i>MEDICAL BIOLOGICAL DEFENSE (ACD&amp;P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
VAC RIC - Animal Model Efficacy Studies	1	2015	4	2021
VAC RIC - Manufacturing Technology Transfer to the ADM Capability	1	2016	4	2021
VAC RIC - Phase 1b Human Clinical Trial	2	2016	2	2018
VAC WEVEE - VLP - Non-Clinical Studies	1	2015	4	2016
VAC WEVEE - VLP - Manufacturing Assay Development	1	2015	4	2016
VAC WEVEE - VLP - Manufacturing Process Development and Pilot Lots	1	2015	2	2016
VAC WEVEE - VLP - Pre-IND	2	2015	2	2015
VAC WEVEE - VLP - IND Submission	4	2016	4	2016
VAC WEVEE - VLP - Phase 1 Clinical Trial	4	2016	4	2018
VAC WEVEE - VRP - Non-Clinical Studies	1	2015	1	2017
VAC WEVEE - VRP - Manufacturing Assay Development	1	2015	3	2016
VAC WEVEE - VRP - Manufacturing Process Development and Pilot Lots	1	2015	4	2017
VAC WEVEE - VRP - Pre-IND	1	2018	1	2018
VAC WEVEE - VRP - IND Submission	4	2018	4	2018
VAC WEVEE - VRP - Phase 1 Clinical Trial	1	2019	4	2019
VAC WEVEE - Milestone B	2	2019	2	2019

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				<b>Project (Number/Name)</b> MC4 / MEDICAL CHEMICAL DEFENSE (ACD&P)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MC4: MEDICAL CHEMICAL DEFENSE (ACD&P)	-	0.000	0.000	5.681	-	5.681	0.000	0.000	0.000	0.000	0	5.681
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

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

The Improved Nerve Agent Treatment System (INATS) advanced development provides an enhanced capability treatment regimen offering greater protection over a broader spectrum of toxic nerve agent threats. Components of the development include (1) a new and improved oxime (replacing 2-pralidoxime chloride (2-PAM)) to provide protection across current and emerging threats, (2) expanded nerve agent indications for a fielded, single indication, pyridostigmine bromide (PB) product, and (3) insertion of a centrally-acting (CA) anticholinergic agent to the treatment regimen to increase survivability and decrease morbidity. The INATS treatment regimen both improves the performance of, and eventually replaces the Antidote Treatment Nerve Agent Auto-injector (ATNAA), while expanding warfighter pretreatment options.

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> 1) INATS	-	-	2.100
<b>FY 2017 Plans:</b> Initiate and complete oxime non-clinical studies.			
<b>Title:</b> 2) INATS	-	-	1.781
<b>FY 2017 Plans:</b> Complete oxime phase 1 clinical trial.			
<b>Title:</b> 3) INATS	-	-	1.800
<b>FY 2017 Plans:</b>			

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> MC4 / <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
Develop bulk drug substance (BDS) and final drug product (FDP) for non-clinical testing of the oxime.			
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	5.681

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
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
• MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	25.966	42.911	39.504	-	39.504	44.656	25.358	11.155	4.855	Continuing	Continuing
• JM6677: <i>ADVANCED ANTICONVULSANT SYSTEM (AAS)</i>	0.000	11.133	0.000	-	0.000	7.215	0.000	0.000	0.000	0	18.348

**Remarks**

**D. Acquisition Strategy**

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.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> MC4 / <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>

<b>E. Performance Metrics</b> N/A
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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Chemical and Biological Defense Program** **Date:** February 2016

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> MC4 / MEDICAL CHEMICAL DEFENSE (ACD&P)
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
INATS - Develop bulk drug substance	PO	TBD : TBD	0.000	0.000		0.000		1.600	Jan 2017	-		1.600	0.000	1.600	0.000
<b>Subtotal</b>			0.000	0.000		0.000		1.600		-		1.600	0.000	1.600	0.000

<b>Support (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
INATS - ES S -Regulatory Integration, IND, and NDA Support Efforts	PO	Battelle Memorial Institute : Columbus, OH	1.501	0.000		0.000		0.150	Apr 2017	-		0.150	0.000	1.651	0.000
<b>Subtotal</b>			1.501	0.000		0.000		0.150		-		0.150	0.000	1.651	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
INATS - DTE S - Oxime Non-clinical Studies	PO	Battelle Memorial Institute : Columbus, OH	1.924	0.000		0.000		1.850	Jan 2017	-		1.850	0.000	3.774	0.000
INATS - DTE C - Oxime Phase 1 Clinical Trial	PO	Battelle Memorial Institute : Columbus, OH	2.585	0.000		0.000		1.661	Jan 2017	-		1.661	0.000	4.246	0.000
<b>Subtotal</b>			4.509	0.000		0.000		3.511		-		3.511	0.000	8.020	0.000



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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> MC4 / <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>

	FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020				FY 2021			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
INATS - Nonclinical Studies - Oxime																												
INATS - Phase 1 Clinical Safety Studies																												
INATS - Milestone B - Oxime																												
INATS - Development of BDS/FDP - Oxime																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> MC4 / <i>MEDICAL CHEMICAL DEFENSE (ACD&amp;P)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
INATS - Nonclinical Studies - Oxime	1	2017	4	2017
INATS - Phase 1 Clinical Safety Studies	1	2015	3	2017
INATS - Milestone B - Oxime	3	2017	3	2017
INATS - Development of BDS/FDP - Oxime	2	2017	4	2017

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program										<b>Date:</b> February 2016		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				<b>Project (Number/Name)</b> TE4 / TEST & EVALUATION (ACD&P)			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017 Base</b>	<b>FY 2017 OCO</b>	<b>FY 2017 Total</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
TE4: TEST & EVALUATION (ACD&P)	-	10.913	17.371	14.887	-	14.887	14.823	23.458	14.017	14.991	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 three groups to include: (1) Analysis and Requirements; (2) Laboratory; (3) Field.

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

(2) Laboratory: The products for this area are the Non-Traditional Agent Defense Test System (NTADTS) and improvements to the Dynamic Test Chamber (DTC). The NTADTS provides a new capability to conduct chemical defense testing against current and emerging threat agents. The NTADTS supports testing of decontamination, collective protection, individual protection, and contamination avoidance products. The DTC provides a new capability for testing chemical point detection systems against chemical warfare agents in various environmental conditions. The CBD acquisition programs supported are 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.

(3) 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 (JECPP), Next Generation Chemical Detector (NGCD), Joint Biological Tactical Detection System (JBTDTS), and the Joint USFK Point and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD).

**B. Accomplishments/Planned Programs (\$ in Millions)**

	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
<b>Title:</b> 1) PD TESS - Non-Traditional Agent Defense Test System (NTADTS)	2.272	5.562	6.267

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016	
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> TE4 / TEST & EVALUATION (ACD&P)	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2015</b>	<b>FY 2016</b>
<p><b>FY 2015 Accomplishments:</b> Initiated methodology development for additional classes of agent.</p> <p><b>FY 2016 Plans:</b> Continue methodology development for additional classes of agent.</p> <p><b>FY 2017 Plans:</b> Continue methodology development and continue test fixture design for additional classes of agent.</p>			
<p><b>Title:</b> 2) PD TESS - Joint Ambient Breeze Tunnel (JABT)</p> <p><b>FY 2016 Plans:</b> Continue component upgrades to JABT for integration into the DMS.</p> <p><b>FY 2017 Plans:</b> Complete implementation of design. Conduct risk reduction testing.</p>		-	1.702
<p><b>Title:</b> 3) PD TESS - Active Standoff Chamber (ASC)</p> <p><b>FY 2016 Plans:</b> Continue component upgrades to ASC for integration into the DMS.</p>		-	1.988
<p><b>Title:</b> 4) PD TESS - Materials Test Capability (MTC)</p> <p><b>FY 2016 Plans:</b> Finalize test fixture design modifications and integrate into laboratory. Verify and validate test fixture.</p>		-	2.063
<p><b>Title:</b> 5) PD TESS - Test Grid</p> <p><b>FY 2015 Accomplishments:</b> Completed transition plan and training manuals. Completed methodology development for system use. Conducted risk reduction testing. Conducted Pre-validation testing activities.</p> <p><b>FY 2016 Plans:</b> Characterize and integrate biological and chemical and dissemination systems.</p>		6.937	3.544
<p><b>Title:</b> 6) PD TESS - Dynamic Test Chamber (DTC)</p> <p><b>FY 2016 Plans:</b> Initiate methodology development for upgrades to support Next Generation Chemical Detector test and evaluation.</p> <p><b>FY 2017 Plans:</b></p>		-	2.174
			1.388

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> TE4 / TEST & EVALUATION (ACD&P)

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>
Complete methodology development for upgrades and implement into chamber.			
<b>Title:</b> 7) PD TESS - Test Infrastructure Analysis & Requirements (TIA&R)	1.704	-	2.082
<b>FY 2015 Accomplishments:</b> Continued to characterize current capabilities for the Chemical and Biological Defense Program (CBDP) to support decisions for new test infrastructure. Continued to document CBDP test infrastructure gaps. Initiated requirements development for the Mobile Test Infrastructure (MTI) and developed a preliminary design.			
<b>FY 2017 Plans:</b> Continue to characterize current capabilities for the CBDP to support decisions for new test infrastructure. Continue to analyze upcoming test infrastructure needs and requirements and initiate planning for studies. Analyses supporting Dynamic Test Chamber upgrades, Joint Ambient Breeze Tunnel and Active Standoff Chamber upgrades, and manage the CBDP database for all test capabilities. Initiate requirements development for new test infrastructure such as decontamination test fixtures, mobile test infrastructure, NTA Facility for PORs and acquisition support.			
<b>Title:</b> 8) PD TESS - Mobile Test Infrastructure (MTI)	-	-	3.762
<b>FY 2017 Plans:</b> Conduct full end-to-end network requirements analysis. Begin regression testing.			
<b>Title:</b> 9) SBIR/STTR	-	0.338	-
<b>FY 2016 Plans:</b> SBIR/STTR - FY16 - Small Business Innovative Research.			
<b>Accomplishments/Planned Programs Subtotals</b>	10.913	17.371	14.887

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>			<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>Cost To</b>	
			<b>Base</b>	<b>OCO</b>	<b>Total</b>					<b>Complete</b>	<b>Total Cost</b>
• TE5: TEST & EVALUATION (EMD)	9.901	6.053	6.119	-	6.119	6.385	6.341	6.310	6.436	Continuing	Continuing
• 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)

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2017 Chemical and Biological Defense Program		<b>Date:</b> February 2016
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&amp;P)</i>	<b>Project (Number/Name)</b> TE4 / <i>TEST &amp; EVALUATION (ACD&amp;P)</i>

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

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> TE4 / TEST & EVALUATION (ACD&P)
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
PD TESS - Test Infrastructure - HW S - NTA Defense Test System Design/Fabrication/Installation	C/CPFF	TBD : TBD	34.918	0.000		0.250	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - NTA Defense Test System Design/Fabrication/Installation #2	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	14.226	3.441	Dec 2014	3.662	Mar 2016	4.517	Dec 2016	-		4.517	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Test Grid	C/CPFF	ITT Corporation : Alexandria, VA	1.200	2.555	Jun 2015	1.297	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Joint Ambient Breeze Tunnel Component Upgrade	MIPR	Various : TBD	0.000	0.000		1.010	Mar 2016	0.300	Dec 2016	-		0.300	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Joint Ambient Breeze Tunnel Component Upgrades	C/CPFF	Various : TBD	0.000	0.000		0.360	Mar 2016	0.700	Dec 2016	-		0.700	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Active Stand-off Chamber Component Upgrades	MIPR	Various : TBD	0.000	0.000		1.675	Mar 2016	0.935	Dec 2016	-		0.935	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Active Stand-off Chamber Component Upgrades #2	C/CPFF	Various : TBD	0.000	0.000		0.425	Mar 2016	0.700	Dec 2016	-		0.700	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Materials Test Capability Design and Modifications	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.525	0.000		0.661	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000

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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> TE4 / TEST & EVALUATION (ACD&P)
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<b>Product Development (\$ in Millions)</b>				FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PD TESS - Test Infrastructure - HW S - Materials Test Capability Design and Modifications #2	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.475	0.000		1.000	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Test Grid Design and Upgrade	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	1.401	Mar 2015	0.895	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Test Grid Design and Upgrade #2	C/CPFF	Various : TBD	0.000	0.365	Mar 2015	0.661	Mar 2016	0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Dynamic Test Chamber Design and Upgrade	MIPR	Various : TBD	0.000	0.000		1.750	Mar 2016	1.000	Dec 2016	-		1.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Test Grid #2	MIPR	Various : TBD	0.000	0.564	Jun 2015	0.000		0.000		-		0.000	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Mobile Test Infrastructure	MIPR	Various : TBD	0.000	0.000		0.000		1.361	Mar 2017	-		1.361	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - Mobile Test Infrastructure #2	C/CPFF	Various : TBD	0.000	0.000		0.000		1.350	Mar 2017	-		1.350	Continuing	Continuing	0.000
PD TESS - Test Infrastructure - HW S - TI Analysis & Requirements	MIPR	Various : TBD	0.000	1.200	Jun 2015	2.337	Mar 2016	2.082	Mar 2017	-		2.082	Continuing	Continuing	0.000
<b>Subtotal</b>			51.344	9.526		15.983		12.945		-		12.945	-	-	0.000





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

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	<b>Project (Number/Name)</b> TE4 / TEST & EVALUATION (ACD&P)
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
PD TESS - NTA Defense Test System (NTADTS) laboratory revitalization and test chamber design	1	2015	2	2015
PD TESS - NTA Defense Test System (NTADTS) Facility Upgrades for Next Class of Agents	3	2015	4	2020
PD TESS - Joint Ambient Breeze Tunnel (JABT) - Initiate/Design Component Upgrades	1	2016	4	2017
PD TESS - Active Standoff Chamber (ASC) - Initiate/Design Component Upgrades	1	2016	4	2017
PD TESS - Materials Test Capability - Fixture Initiation/Design	1	2015	2	2015
PD TESS - Materials Test Capability - Initiate and Complete Design Mods	2	2015	1	2018
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 - DTC Methodology Development for Upgrades	1	2016	4	2017
PD TESS - Mobile Test Infrastructure (MTI) Design and Development	1	2016	4	2017
PD TESS - Test Grid IOC	4	2016	4	2016
PD TESS - Test Infrastructure Analysis & Requirements	1	2015	4	2021

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