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**Department of Defense
Fiscal Year (FY) 2016 President's Budget Submission**

February 2015



Chemical and Biological Defense Program

Defense Wide Justification Book Volume 4 of 4

Research, Development, Test & Evaluation, Defense-Wide

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Chemical and Biological Defense Program • President's Budget Submission FY 2016 • RDT&E Program

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Chemical Biological Defense Program Overview

Chemical, biological, radiological, and nuclear (CBRN) threats are dynamic and ever-changing. The rapid advancement and global proliferation of chemical and biological (CB) capabilities greatly extends the spectrum of plausible actors, agents, concepts of use, and targets. These advancements enable our nation's state and non-state adversaries to develop unique CBRN threats with the intent of circumventing our current defenses. To ensure an effective response to these threats, the Department of Defense (DoD) Chemical and Biological Defense Program (CBDP) continuously and actively develops CBRN defensive capabilities to stay ahead of evolving threats. This 2016 budget request includes \$1.3 billion to provide a framework for the allocation of fiscal resources against valid capability requirements to achieve a strategy-driven balance of risk in accordance with National Defense Strategies, Department-level objectives, and Service force development priorities.

The CBDP published a new strategy in 2012 to address current defense policy set by public law, National strategies, Departmental Directives and Instructions, and senior leadership guidance. This strategy outlined the CBDP vision and mission of a DoD that addresses CBRN threats and minimizes their effects, and its mission is to enable the Warfighter to deter, prevent, protect, mitigate, respond, and recover from CBRN threats and effects as part of a layered, integrated defense. To support the vision and mission, the CBDP has four enduring strategic goals that define the desired strategic end-states and associated lines of action for the program and its Enterprise Components. These are:

1. *Equip the force* to successfully conduct military operations to prevent, protect, and respond to CBRN threats and effects.
2. *Prevent surprise* by anticipating CBRN threats and developing new capabilities for the Warfighter to counter emerging threats.
3. *Maintain infrastructure* to meet and adapt current and future needs for personnel, equipment, and facilities within funding constraints.
4. *Lead the Enterprise* to integrate and align activities to fulfill the CBDP mission.

Throughout FY2013 and going forward, the following strategic program objectives guide efforts to accomplish the *CBDP Strategic Plan* goals:

- Establish a robust MCM pipeline from requirements definition, through Research, Development, Test, and Evaluation (RDT&E) and U.S. Food and Drug Administration (FDA) approval, to manufacturing and distribution. This pipeline shall focus on mitigating current CBRN threats using platform technologies capable of expediting responses to validated known and emerging threats.
- Develop synergistic, technologically advanced environmental surveillance and point-of-need diagnostic capabilities against CBRN threats to enable rapid force protection decisions.

- Provide CBRN defense capabilities to support biosurveillance efforts and enable the Warfighter to achieve information dominance in the CBRN domain.
- Integrate NTA defense capabilities into future CB defense systems, as appropriate.
- Develop and field suitable, effective, and affordable broad-spectrum CB detection capabilities to detect current and emerging CB hazards.
- Maintain critical capabilities and competencies, aligned with RDA priorities, to rapidly develop, test, and field CBRN defensive capabilities to the Warfighter.
- Implement risk-based planning and decision-making processes within the Enterprise.

Focused efforts within this budget are captured in a number of emphasis areas that are a collection of mutually-supporting S&T efforts, systems acquisition programs, and T&E capabilities aimed at delivering comprehensive CBR defense capabilities to the warfighter. Emphasis areas are derived from National Strategies, senior leader guidance, and CBDP community priorities. The four key emphasis areas are: medical countermeasures (MCMs), diagnostics, biosurveillance, and non-traditional agent (NTA) defenses.

Medical Countermeasures

The *National Strategy for Countering Biological Threats* emphasized the importance of developing MCMs to reduce impacts of outbreaks of infectious disease whether of natural, accidental, or deliberate origin. Homeland Security Presidential Directive (HSPD)-10, “Biodefense for the 21st Century,” and HSPD-18, “MCMs Against Weapons of Mass Destruction,” directed U.S. government agencies to “conduct joint development and procurement of medical countermeasures” throughout the Interagency and with international partner nations. HSPD-18 also stated that the Secretary of Defense shall retain exclusive responsibility for research, development, acquisition, and deployment of medical countermeasures to prevent or mitigate the health effects of WMD threats and naturally occurring threats to the Armed Forces and shall continue to direct strategic planning for and oversight of programs to support medical countermeasures development and acquisition for our Armed Forces personnel. MCMs include capabilities to protect the warfighter against CBR threats and mitigate illness, suffering, and death. MCMs will provide end-to-end countermeasures against emerging infectious diseases, genetically engineered threats, naturally occurring biological phenomena, novel chemical agents, and radiological threats. Program efforts include core medical efforts aimed at developing and delivering pretreatments/prophylaxes and therapeutics to the warfighter. MCMs in development by the CBDP traditionally fall into one of two categories: 1) pretreatments/prophylaxes such as a plague vaccine and 2) post-exposure, pre/post-symptomatic therapeutics such as the Hemorrhagic Fever Virus therapeutic (for example, Ebola).

Diagnostics

Diagnostic and analytic-related efforts are a centerpiece of the CBDP's comprehensive capability to counter CBR threats and characterize CBR attacks or events by diagnosing causative agents of disease and providing situational awareness of threat agents in the environment. The CBDP has resourced a robust portfolio that includes S&T of CBR diagnostics, systems development and procurement of point-of-need/point-of-care diagnostic equipment, and continuous assay development and procurement to support fielded and developmental diagnostic or analytic platforms.

Biosurveillance

The CBDP is a key contributor to the Department's efforts in support of the *National Biosurveillance Strategy* and its goal "to achieve a **well-integrated national biosurveillance enterprise that saves lives by providing essential information for better decision-making at all levels.**" The CBDP focus and support are aligned with the four enabling capabilities outlined in the National Biosurveillance Strategy. These are: integrate capabilities, build capacity, foster innovation, and strengthen partnerships. Key CBDP efforts include; focusing on the ability to strengthen and integrate capabilities that provide awareness of endemic pathogens in the environment along with warning and characterization of biological attacks or events (analysis and diagnostics) for decision-making; improving the ability to find, track, interdict, and eliminate biological weapons and threats directed against our warfighters and citizens; and enabling the Department's ability to conduct forensics and attribution and to prevent re-attack. The CBDP capabilities in development will provide pre-event (early warning and indications) and post-event (effective consequence management and persistent surveillance for re-emergence) capabilities necessary to improve early warning and characterization of man-made (i.e., genetically engineered/synthetic biological agents) and naturally occurring (i.e., emerging infectious diseases and the re-emergence of pathogens from zoonotic reservoirs) disease outbreaks in near real-time. The CBDP is integrating/leveraging various capabilities being developed in other areas across the DoD, Internationally, and within the Interagency in order to provide an enhanced biosurveillance capability.

Non Traditional Agent (NTA) Defense

The 2010 QDR directed the DoD to increase resources for R&D of countermeasures and defenses to NTAs in concert with interagency partners. DoD efforts supporting NTA defense are a key part of an integrated National effort supporting Research, Development, and Acquisition of defensive capabilities. The CBDP works to:

- Develop technologies that address existing and emerging NTAs in the near-, mid-, and far-term, including the ability to address multiple capability gaps and provide multi-layered and integrated defenses to NTAs
- Strengthen and integrate capabilities that provide warning of attack, barrier protection, and both pretreatments/prophylaxes and post-exposure treatments

- Field faster, more flexible consequence management capabilities on the battlefield and in the homeland
- Develop capabilities, policies, and plans that enable us to act swiftly to save lives and restore the effectiveness of contaminated areas.

Summary

The CBDP continues to effectively meet today's highest priority needs for DoD CBRN defense solutions while shifting to establish the agility and flexibility necessary to rapidly adapt to the evolving strategic landscape. This ongoing transformation ensures that currently available technologies are produced, procured, and provided swiftly and that cutting-edge technologies are harnessed to provide improved capabilities in the future. The DoD CBDP continued to enhance CBRN readiness to counter known and emerging threats and collaborated with other Government agencies to foster exchange of knowledge and coordination of CB defense-related activities. This budget request supports the CBDP as a Joint Force enabler fulfilling the needs of the Warfighters to ensure that they are trained, equipped, and resourced to complete missions in CBRN environments now and in the future, preserving the security and freedom of our nation.

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Department of Defense
 FY 2016 President's Budget
 Exhibit R-1 FY 2016 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

20 Jan 2015

Appropriation -----	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-----	-----	-----	-----	-----	-----	-----	-----
Research, Development, Test & Eval, DW	1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692
Total Research, Development, Test & Evaluation	1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692

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Department of Defense
FY 2016 President's Budget
Exhibit R-1 FY 2016 President's Budget
Total Obligational Authority
(Dollars in Thousands)

20 Jan 2015

Summary Recap of Budget Activities -----	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-----	-----	-----	-----	-----	-----	-----	-----
Basic Research	50,738	48,261		48,261	46,261		46,261
Applied Research	195,160	226,317		226,317	208,111		208,111
Advanced Technology Development	140,595	132,674	22,700	155,374	140,094		140,094
Advanced Component Development And Prototypes	189,193	163,236	17,300	180,536	172,754		172,754
System Development And Demonstration	415,467	335,883	10,000	345,883	303,647		303,647
Management Support	107,220	105,927		105,927	102,264		102,264
Operational System Development	12,873	28,496		28,496	33,561		33,561
Total Research, Development, Test & Evaluation	1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692
 Summary Recap of FYDP Programs -----							
Research and Development	1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692
Total Research, Development, Test & Evaluation	1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692

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Defense-Wide
 FY 2016 President's Budget
 Exhibit R-1 FY 2016 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

20 Jan 2015

Summary Recap of Budget Activities -----	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total
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Total Research, Development, Test & Evaluation	1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692

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Defense-Wide
 FY 2016 President's Budget
 Exhibit R-1 FY 2016 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

20 Jan 2015

Appropriation -----	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total -----
Chemical and Biological Defense Program	1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692
Total Research, Development, Test & Evaluation	1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692

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Defense-Wide
FY 2016 President's Budget
Exhibit R-1 FY 2016 President's Budget
Total Obligational Authority
(Dollars in Thousands)

20 Jan 2015

Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	S e c
7	0601384BP	Chemical and Biological Defense Program	01	50,738	48,261		48,261	46,261		46,261	U
		Basic Research		50,738	48,261		48,261	46,261		46,261	
15	0602384BP	Chemical and Biological Defense Program	02	195,160	226,317		226,317	208,111		208,111	U
		Applied Research		195,160	226,317		226,317	208,111		208,111	
43	0603384BP	Chemical and Biological Defense Program - Advanced Development	03	140,595	132,674	22,700	155,374	140,094		140,094	U
		Advanced Technology Development		140,595	132,674	22,700	155,374	140,094		140,094	
78	0603884BP	Chemical and Biological Defense Program - Dem/Val	04	189,193	163,236	17,300	180,536	172,754		172,754	U
		Advanced Component Development And Prototypes		189,193	163,236	17,300	180,536	172,754		172,754	
118	0604384BP	Chemical and Biological Defense Program - EMD	05	415,467	335,883	10,000	345,883	303,647		303,647	U
		System Development And Demonstration		415,467	335,883	10,000	345,883	303,647		303,647	
149	0605384BP	Chemical and Biological Defense Program	06	92,265	105,927		105,927	102,264		102,264	U
150	0605502BP	Small Business Innovative Research - Chemical Biological Def	06	14,955							U
		Management Support		107,220	105,927		105,927	102,264		102,264	
184	0607384BP	Chemical and Biological Defense (Operational Systems Development)	07	12,873	28,496		28,496	33,561		33,561	U
		Operational System Development		12,873	28,496		28,496	33,561		33,561	
Total Research, Development, Test & Eval, DW				1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692	

R-1C1: FY 2016 President's Budget (Published Version of PB Position), as of January 20, 2015 at 12:06:49

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Chemical and Biological Defense Program
FY 2016 President's Budget
Exhibit R-1 FY 2016 President's Budget
Total Obligational Authority
(Dollars in Thousands)

20 Jan 2015

Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	S e c
7	0601384BP	Chemical and Biological Defense Program	01	50,738	48,261		48,261	46,261		46,261	U
		Basic Research		50,738	48,261		48,261	46,261		46,261	
15	0602384BP	Chemical and Biological Defense Program	02	195,160	226,317		226,317	208,111		208,111	U
		Applied Research		195,160	226,317		226,317	208,111		208,111	
43	0603384BP	Chemical and Biological Defense Program - Advanced Development	03	140,595	132,674	22,700	155,374	140,094		140,094	U
		Advanced Technology Development		140,595	132,674	22,700	155,374	140,094		140,094	
78	0603884BP	Chemical and Biological Defense Program - Dem/Val	04	189,193	163,236	17,300	180,536	172,754		172,754	U
		Advanced Component Development And Prototypes		189,193	163,236	17,300	180,536	172,754		172,754	
118	0604384BP	Chemical and Biological Defense Program - EMD	05	415,467	335,883	10,000	345,883	303,647		303,647	U
		System Development And Demonstration		415,467	335,883	10,000	345,883	303,647		303,647	
149	0605384BP	Chemical and Biological Defense Program	06	92,265	105,927		105,927	102,264		102,264	U
150	0605502BP	Small Business Innovative Research - Chemical Biological Def	06	14,955							U
		Management Support		107,220	105,927		105,927	102,264		102,264	
184	0607384BP	Chemical and Biological Defense (Operational Systems Development)	07	12,873	28,496		28,496	33,561		33,561	U
		Operational System Development		12,873	28,496		28,496	33,561		33,561	
Total Chemical and Biological Defense Program				1,111,246	1,040,794	50,000	1,090,794	1,006,692		1,006,692	

R-1C1: FY 2016 President's Budget (Published Version of PB Position), as of January 20, 2015 at 12:06:49

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Budget Activity 01: Basic Research

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

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7	01	0601384BP	CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH).....	Volume 4 - 1

Budget Activity 02: Applied Research

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
15	02	0602384BP	CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH).....	Volume 4 - 9

Budget Activity 03: Advanced Technology Development (ATD)

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
43	03	0603384BP	CHEMICAL/BIOLOGICAL DEFENSE (ATD).....	Volume 4 - 39

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Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
78	04	0603884BP	CHEMICAL/BIOLOGICAL DEFENSE (ACD&P).....	Volume 4 - 67

Budget Activity 05: System Development & Demonstration (SDD)

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
118	05	0604384BP	CHEMICAL/BIOLOGICAL DEFENSE (EMD).....	Volume 4 - 177

Budget Activity 06: RDT&E Management Support

Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
149	06	0605384BP	CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT).....	Volume 4 - 317
150	06	0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH (SBIR).....	Volume 4 - 337

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Budget Activity 07: Operational Systems Development
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide
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Line Item	Budget Activity	Program Element Number	Program Element Title	Page
184	07	0607384BP	CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV).....	Volume 4 - 341

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CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	0602384BP	15	02.....	Volume 4 - 9
CHEMICAL/BIOLOGICAL DEFENSE (ATD)	0603384BP	43	03.....	Volume 4 - 39
CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	0601384BP	7	01.....	Volume 4 - 1
CHEMICAL/BIOLOGICAL DEFENSE (EMD)	0604384BP	118	05.....	Volume 4 - 177
CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	0607384BP	184	07.....	Volume 4 - 341
CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	0605384BP	149	06.....	Volume 4 - 317
SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	0605502BP	150	06.....	Volume 4 - 337

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity					R-1 Program Element (Number/Name)							
0400: <i>Research, Development, Test & Evaluation, Defense-Wide I</i> BA 1: <i>Basic Research</i>					PE 0601384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	50.738	48.261	46.261	-	46.261	45.364	44.854	44.302	47.239	Continuing	Continuing
LF1: <i>CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)</i>	-	34.623	31.727	28.588	-	28.588	29.744	28.606	28.215	31.043	Continuing	Continuing
PS1: <i>CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)</i>	-	16.115	16.534	17.673	-	17.673	15.620	16.248	16.087	16.196	Continuing	Continuing

A. Mission Description and Budget Item Justification

Advances fundamental knowledge and promotes theoretical and experimental research in life and physical sciences.

The Projects within this BA reflect the research areas of Life Sciences(LF1) (e.g. microbiology, biochemistry, pathogenic mechanisms, cell and molecular biology, immunology, and information science) which focus on fundamental efforts to understand living systems' response to biological or chemical agents, to support detection, diagnostics, protection, and medical treatment.

The projects within in this BA also include efforts in Physical Sciences (PS1) (e.g. chemistry, physics, materials science, and environmental science) which focus on fundamental scientific phenomena. These support investigation of physical and chemical properties and interactions for enhanced functionalities important to detection, protection, and decontamination. BA1 also supports Science, Technology, Engineering, and Math (STEM) efforts through the National Research Council with Post-Doctorate research associate program, a two week summer camp for high school students and teachers, and Military Internships at West Point.

The projects in this PE are placed in BA1 because they are basic research efforts directed towards non-specific or non-unique military applications. Basic research technological breakthroughs support applied research (PE 0602384BP) activities.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program	Date: February 2015
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 1: Basic Research</i>	R-1 Program Element (Number/Name) PE 0601384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)</i>
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B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	51.426	48.261	46.832	-	46.832
Current President's Budget	50.738	48.261	46.261	-	46.261
Total Adjustments	-0.688	-	-0.571	-	-0.571
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.688	-			
• Other Adjustments	-	-	-0.571	-	-0.571

Change Summary Explanation

Funding: N/A

Schedule: N/A

Technical: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 1					R-1 Program Element (Number/Name) PE 0601384BP / CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)				Project (Number/Name) LF1 / CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
LF1: CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)	-	34.623	31.727	28.588	-	28.588	29.744	28.606	28.215	31.043	Continuing	Continuing

A. Mission Description and Budget Item Justification

Focuses on fundamental efforts to understand living systems' response to biological or chemical agents, to support detection, protection, diagnostics, and medical treatment.

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

<div>Title: 1) Life Sciences</div> <div>Description: Focuses on fundamental efforts to understand living systems' response to biological or chemical agents, to support detection, protection, diagnostics, and medical treatment.</div> <div>FY 2014 Accomplishments: Developed understanding of pathogens, novel threats and host responses (including human and zoonotic) to prevent/minimize host injury. Investigated and evaluated systemic biological responses following exposure of living systems to CB agents. Improved understanding of how polymicrobial interactions interfere with bacterial activities (through investigation of genetic networks) to influence discovery of novel antagonists for medical countermeasures, thus influencing response to or course of disease. Explored materials in biotic/abiotic interface and biomimetics to enable design of robust synthetic enzymes. Explored nano- and nanostructured materials as approaches to the needs of chemical and biological countermeasures, including behavior in biological systems and how morphology relates to biological interaction and function.</div> <div>FY 2015 Plans: Continue efforts to understand pathogens, novel threats and host responses (including human and zoonotic) to prevent/minimize host injury. Continue to investigate and evaluate systemic biological responses following exposure of living systems to CB agents. Improve understanding of how polymicrobial interactions interfere with bacterial activities to influence discovery of novel antagonists for medical countermeasures, thus influencing response to or course of disease. Continue to explore computational infectious models that utilize experimental data to generate mathematical models of infection and immunity. Continue exploration of approaches to enable design of robust synthetic enzymes and proteins. Continue to explore micro-, nano- and nanostructured materials as approaches to the needs of chemical and biological countermeasures, including behavior in biological systems and how morphology relates to biological interaction and function. Continue exploring functional cellular and molecular systems and integration of functionality that may provide adaptive materials and/or autonomously functioning materials and capabilities for CB defense countermeasures that sense and transduce threats. Develop understanding and means to recognize the interaction of</div>	FY 2014	FY 2015	FY 2016
	34.623	31.279	28.588

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program									Date: February 2015		
Appropriation/Budget Activity 0400 / 1				R-1 Program Element (Number/Name) PE 0601384BP / CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)				Project (Number/Name) LF1 / CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016
pathogens, toxicants, and novel threats with the blood-brain barrier and central nervous system. Continue consortium approach to explore the importance of bacterial persistence and antibiotic tolerance in the establishment of recurring/chronic infections such as melioidosis. Initiate evaluation of role of Gene Amplification and Duplication in the development of multiple drug resistance in bacterial pathogens. Investigate the influence of glycosylation patterns on biologic stability and pharmacologic characteristics. FY 2016 Plans: Continue efforts to understand pathogens, novel threats and host responses (including human and zoonotic) to prevent/minimize host injury. Continue to investigate and evaluate systemic biological responses following exposure of living systems to CB agents. Improve understanding of how polymicrobial interactions interfere with bacterial activities to influence discovery of novel antagonists for medical countermeasures, thus influencing response to or course of disease. Continue to explore nano- and nano-structured materials as approaches to the needs of chemical and biological countermeasures, including behavior in biological systems and how morphology relates to biological interaction and function. Continue consortium approach to explore the importance of bacterial persistence and antibiotic tolerance in the establishment of recurring/chronic infections such as melioidosis. Investigate the influence of glycosylation patterns on biologic stability and pharmacologic characteristics.											
Title: 2) SBIR/STTR FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.									-	0.448	-
Accomplishments/Planned Programs Subtotals									34.623	31.727	28.588
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• CB2: CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	44.102	54.061	52.131	-	52.131	54.321	53.348	47.020	47.407	Continuing	Continuing
• TM2: TECHBASE MED DEFENSE (APPLIED RESEARCH)	85.828	100.722	88.933	-	88.933	80.082	82.046	85.283	85.795	Continuing	Continuing
• CB3: CHEMICAL BIOLOGICAL DEFENSE (ATD)	19.317	17.722	16.062	-	16.062	16.676	15.982	15.577	15.698	Continuing	Continuing
• TM3: TECHBASE MED DEFENSE (ATD)	93.949	110.310	93.725	-	93.725	96.359	97.445	96.329	98.080	Continuing	Continuing
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 1	R-1 Program Element (Number/Name) PE 0601384BP / CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	Project (Number/Name) LF1 / CHEMICAL/BIOLOGICAL DEFENSE - LIFE SCIENCES (BASIC RESEARCH)
D. Acquisition Strategy N/A		
E. Performance Metrics N/A		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 1					R-1 Program Element (Number/Name) PE 0601384BP / CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)				Project (Number/Name) PS1 / CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
PS1: CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)	-	16.115	16.534	17.673	-	17.673	15.620	16.248	16.087	16.196	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project (PS1) advances fundamental scientific knowledge in physical science areas that include chemistry, physics, materials science, environmental sciences, and nanotechnology that could potentially lead to transformational CB defensive capabilities enhancing Warfighter performance and safety. Research results in physics, chemistry and materials sciences have potential application in point and standoff detection, as well as protection and decontamination. Surface and environmental sciences focus on the study of physical and chemical properties and phenomena of interactions, especially with regard to Non Traditional Agents (NTAs), that seek to improve capabilities such as detection, protection, and decontamination. Research in nanotechnology and nanoscale sciences, such as nanoelectromechanical systems, molecular motors, nano-mechanical resonance sensing, and nano-meter imaging, has potential application across CB capability areas to provide significant enhancement by, for example, decreasing detection response times, increasing medical countermeasure effectiveness against a wider array of threat agents, and providing currently unavailable modalities like detection imbedded in fabrics.

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

	FY 2014	FY 2015	FY 2016
Title: 1) Physical Sciences	16.115	16.315	17.673
Description: Focuses on fundamental scientific phenomena including chemistry, physics, materials science, environmental science, and nanotechnology.			
FY 2014 Accomplishments: Continued exploring multifunctional material design and synthesis to identify dynamic materials that combine functionality and durability to improve CB protection by increasing protection factors and reducing physical burden. Designed and synthesized novel decontamination options that are broadly applicable to multiple chemicals or biologicals and are less harmful to equipment. Continued investigations into novel signatures and analytical methods, new separation approaches, and recognition elements to reduce logistical burden while increasing specificity to overcome limitations in current approaches to identifying and quantifying CB threats. Explored nano- and nanostructured materials as novel approaches to needs in chemical and biological countermeasures. Continued exploring integration of functionality that may provide adaptive materials and capabilities for CB defense countermeasures that sense, transduce, respond and mitigate threats.			
FY 2015 Plans: Continue exploring multifunctional material design and synthesis to identify dynamic materials that combine functionality and durability to improve CB protection by increasing protection factors and reducing physical burden. Design and synthesize novel decontamination options that are broadly applicable to multiple chemicals or biologicals and are less harmful to equipment.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 1				R-1 Program Element (Number/Name) PE 0601384BP / CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)				Project (Number/Name) PS1 / CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Continue investigations into novel signatures and analytical methods, new separation approaches, and recognition elements to reduce logistical burden while increasing specificity to overcome limitations in current approaches to identifying and quantifying CB threats. Continue exploration of nano- and nanostructured materials as novel approaches to needs in chemical and biological countermeasures. Continue exploring materials and integration of functionality that may provide adaptive materials and capabilities for CB defense countermeasures that bind, catalyze, sense, transduce, respond and/or mitigate threats. Investigate impact of ambient surface reactivity and structure on performance of state-of-the-art and novel CB mitigating materials. Develop understanding of chemical behavior in the environment, such as atmospheric reactivity and intra material interactions. FY 2016 Plans: Continue exploring multifunctional material design and synthesis to identify dynamic materials that combine functionality and durability to improve CB protection by increasing protection factors and reducing physical burden. Design and synthesize novel decontamination options that are broadly applicable to multiple chemicals or biologicals and are less harmful to equipment. Continue exploration of micro-, nano- and nanostructured materials as novel approaches to needs in chemical and biological countermeasures. Continue exploring materials and integration of functionality that may provide adaptive materials and capabilities for CB defense countermeasures that bind, catalyze, respond and/or mitigate threats. Continue to investigate impact of ambient surface reactivity and structure on performance of state-of-the-art and novel CB mitigating materials. Continue to develop understanding of chemical behavior in the environment, such as intra material interactions.												
Title: 2) SBIR/STTR FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.										-	0.219	-
Accomplishments/Planned Programs Subtotals										16.115	16.534	17.673
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• CB2: CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	44.102	54.061	52.131	-	52.131	54.321	53.348	47.020	47.407	Continuing	Continuing	
• CB3: CHEMICAL BIOLOGICAL DEFENSE (ATD)	19.317	17.722	16.062	-	16.062	16.676	15.982	15.577	15.698	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 1	R-1 Program Element (Number/Name) PE 0601384BP / CHEMICAL/BIOLOGICAL DEFENSE (BASIC RESEARCH)	Project (Number/Name) PS1 / CHEM/BIO DEFENSE - PHYSICAL SCIENCES (BASIC RESEARCH)
E. Performance Metrics N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	195.160	226.317	208.111	-	208.111	204.941	209.378	204.427	205.879	Continuing	Continuing
CB2: <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	-	44.102	54.061	52.131	-	52.131	54.321	53.348	47.020	47.407	Continuing	Continuing
NT2: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (APPLIED RESEARCH)</i>	-	65.230	71.534	67.047	-	67.047	70.538	73.984	72.124	72.677	Continuing	Continuing
TM2: <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>	-	85.828	100.722	88.933	-	88.933	80.082	82.046	85.283	85.795	Continuing	Continuing

A. Mission Description and Budget Item Justification

Applies research in the areas of physical technologies (CB protective materials, textiles, and filtration, sensors and sensing algorithms, effects modeling, chemical formulations, processes and methods for hazard mitigation), medical technologies (drug discovery and platform technology development, biomarkers and assay development useful in drug development and diagnostics, human mimicking devices and regulatory science), and non-traditional agent medical and physical defense technologies, including characterization of emerging threats. Major efforts support development of vaccines, therapeutics, next generation diagnostics systems, next generation chemical detectors, nerve agent pretreatments and individual protection advances.

In the physical sciences area, Project CB2, focuses on continuing improvements in CB defense materiel, including contamination avoidance, decontamination, and protection technologies, as well as biological weapon/agent surveillance.

The medical program, Project TM2, focuses on the development of antidotes, drug treatments, disease surveillance and point-of-need diagnostic devices, patient decontamination and medical technologies management. The Medical Countermeasures Initiative (MCMI) was established to provide the capability for the advancement of regulatory science and flexible manufacturing of biological MCM to address CBR threats, including novel and previously unrecognized, naturally-occurring emerging infectious diseases.

For Non-Traditional Agents (NTAs), Project NT2 consolidates all NTA efforts (both medical and non-medical) including pretreatments, therapeutics, detection, threat agent science, modeling, and protection and hazard mitigation.

Efforts under this PE will transition to or will provide risk reduction for Advanced Technology Development (PE: 0603384BP), Advanced Component Development and Prototypes (PE: 0603884BP) and System Development and Demonstration (PE: 0604384BP).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program	Date: February 2015
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 2: Applied Research</i>	R-1 Program Element (Number/Name) PE 0602384BP I <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>
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B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	197.065	226.317	215.133	-	215.133
Current President's Budget	195.160	226.317	208.111	-	208.111
Total Adjustments	-1.905	-	-7.022	-	-7.022
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.416	-			
• SBIR/STTR Transfer	-2.321	-			
• Other Adjustments	-	-	-7.022	-	-7.022

Change Summary Explanation

Funding: N/A

Schedule: N/A

Technical: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 2					R-1 Program Element (Number/Name) PE 0602384BP / CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)				Project (Number/Name) CB2 / CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
CB2: CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	-	44.102	54.061	52.131	-	52.131	54.321	53.348	47.020	47.407	Continuing	Continuing

A. Mission Description and Budget Item Justification

Project CB2 provides physical science applied research to develop future, multi-disciplinary, multi-functional capabilities in life sciences, physical sciences, environmental sciences, mathematics, cognitive sciences, and engineering. Efforts in this project support the seamless integration of state-of-the-art-technologies into a collection of systems across the spectrum of capabilities required to support chemical and biological defense missions. Capability areas in this project include: detection; Information systems technology; protection/hazard mitigation; and threat agent science. Detection focuses on developing technologies for standoff and point detection and identification of chemical and biological agents. Information systems technology focuses on advanced hazard prediction, operational effects and risk assessment, and systems performance modeling. Protection and hazard mitigation focuses on providing technologies that protect and reduce the chemical/biological threat or hazard to the Warfighter, weapons platforms, and structures. Threat agent science is devoted to characterizing threat agents and the hazards they present in terms of agent fate in the environment, toxicology, and pathogenicity. This project focuses on horizontal integration of CB defensive technologies in support of the Joint Services.

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

	FY 2014	FY 2015	FY 2016
Title: 1) Material Contamination Mitigation	7.124	6.407	3.293
Description: Development and analysis of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application.			
FY 2014 Accomplishments: Continued the development of new formulations adjusted for agent, material substrate, and environment; combined with optimized application systems and initiated additional efforts based on the results of the dial-a-decon analysis of alternatives. Continued coatings efforts to examine durable and temporary coatings that pursue reactive and barrier options and initiated efforts based on the results of the coatings analysis of alternatives. Continued development of delivery and application methods on decontamination efficacy on complex surfaces. Continued to develop decontamination assurance sprays for biological agents and other agents of interest. Continued development of enzymes for sensitive equipment/platform decontamination. Investigated technologies to decontaminate spores over a wide area, approaches included looking at germinants paired lytic enzymes, directed energy, and predatory nematodes. Demonstrated the ability of technologies to decontaminate spores in complex, dirty environments.			
FY 2015 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602384BP / CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	Project (Number/Name) CB2 / CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Focus efforts on the Dial-a-Decon and Enzyme Decon projects. Investigate non-aqueous formulations and responsive coatings. Initiate the radiological/nuclear decontamination/hazard mitigation effort.				
FY 2016 Plans: Continue Dial-a-Decon, Wide Area Decon of bacillus anthracis, and sensitive equipment decontamination (enzyme) projects. Continue non-aqueous formulation investigations and incorporate data gathered from surface science investigations to inform design to initiate development of the next generation of hazard mitigation technologies that include integration of multiple systems to achieve efficacy goals. Continue responsive coatings project to enhance decontaminability as part of the systems approach to achieving efficacy goals. Continue the decontamination/hazard mitigation effort.				
Title: 2) Respiratory and Ocular Protection Description: Development and analysis of design alternatives for chemical and biological air-purifying respirators to provide enhanced protection with lower physiological burden and improved interface with mission equipment.		1.533	1.150	3.411
FY 2014 Accomplishments: Continued development of next generation low burden respirator technology. Developed and integrated novel seal, anti-fogging, and dual cavity technologies. Developed a scalable respirator technology to quickly configure to different protective capabilities from air purifying respirator (APR) to self-contained breathing apparatus (SCBA).				
FY 2015 Plans: Focus on special purpose tactical applications for high hazard areas. Explore configurations that rapidly scale from air purification respirators to closed circuit self-contained briefing apparatus.				
FY 2016 Plans: Demonstration of novel filtration media into a lightweight, low-profile, and low-burden individual protective filter, which has enhanced performance against a broader range of challenges that includes toxic industrial chemicals. Develop components of a hybrid respirator that can scale between different challenge environments. Components include nanotechnologies, anti-fogging materials, dynamic response breathing, oxygen storage and CO2 scrubbing.				
Title: 3) Biosurveillance (BSV) Description: Integrate existing disparate military and civilian datasets, investigate methodologies to appropriately integrate open source data into advanced warning systems, and leverage and enhance advanced epidemiological models and algorithms for disease prediction, forecasting, impact and biological threat assessment. Contribute to the development of global, near real-time, disease monitoring and surveillance systems that address secondary infection, fuse medical syndromic, environmental, and clinical data, and feed into disease modeling, medical resource estimation and decision support tools.		7.102	2.694	2.983

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 2		R-1 Program Element (Number/Name) PE 0602384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>		Project (Number/Name) CB2 / <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<p><i>FY 2014 Accomplishments:</i> Completed effort on biosurveillance data stream evaluation and analysis to identify most useful biosurveillance data streams for prediction and early warning and leverage this research for Biosurveillance (BSV) Ecosystem effort. Completed effort to devise a structured, outside continental U.S. (OCONUS) expansion roadmap for agent-based epidemiological models and continued to increase OCONUS analytic capability through targeted areas. Leveraged this research for BSV Ecosystem effort. Advanced research into data integration platforms through the BSV Ecosystem effort. Developed approaches for unique and emerging data collection, aggregation and provision of human, vector and animal/zoonotic health surveillance data. Developed algorithms, verification, and validation for these data feeds to synthesize and interrogate multiple sources of data to provide high confidence in the prediction, early warning and forecasting (inclusive of mitigation strategies) of infectious disease outbreaks. Leveraged biosurveillance and point of need diagnostic efforts to support in-context, rapid detection, identification and response capabilities on the global scale through integrated access via the BSV Ecosystem.</p> <p><i>FY 2015 Plans:</i> Complete efforts using social media to infer individual and collective health behavior for digital threat surveillance, epidemic planning and response. Complete effort to develop a flexible set of data driven models that dynamically assesses the socio-economic response to the spread of disease and, in turn, the effect of that response on disease spread. Complete efforts to refine technology and implement standards to enable diagnostic device to cloud communications in order to fully leverage biosurveillance and point of need diagnostic efforts. Continue the development of the BSV Ecosystem to include analyst collaboration tools, advanced analytics, and analyst workbench. Continue effort to develop a trust filter for next generation data sources to be included in biosurveillance analytic capabilities.</p> <p><i>FY 2016 Plans:</i> Complete effort to develop a trust filter for next generation data sources to be included in biosurveillance analytic capabilities of the BSV Ecosystem. Initiate effort to explore next generation device-to-cloud capabilities and possible applications for biosurveillance.</p>					
<p><i>Title:</i> 4) Detection</p> <p><i>Description:</i> Emphasis on the detection and identification of chemical and biological threats. Objectives include the development of miniaturized detector for sensing of chemical and biological agents, design for prototype whole pathogen genome sequencing system.</p> <p><i>FY 2014 Accomplishments:</i></p>			7.295	15.809	17.200

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602384BP / CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	Project (Number/Name) CB2 / CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continued integration studies for Next Generation Chemical Detector (NGCD) based on Micro Electro-Mechanical Systems (MEMS) components for Gas Chromatography (GC) and Mass Spectrometry (MS). Continued algorithm development to increase range capabilities, reduce false positives, and provide decision capabilities for large data sets. FY 2015 Plans: Continue integration studies for Next Generation Chemical Detector (NGCD) based on Micro Electro-Mechanical Systems components for Gas Chromatography and Mass Spectrometry. Continue algorithm development to increase range capabilities, reduce false positives, and provide decision capabilities for large data sets. Initiate concept and technology development for biological threat early warning. FY 2016 Plans: Continue algorithm development to increase range capabilities, reduce false positives, and provide decision capabilities for large data sets. Continue concept and technology development for biological threat early warning detection.				
Title: 5) Hazard Prediction Description: Improve battlespace awareness by accurately predicting hazardous material releases, atmospheric transport and dispersion, and resulting human effects. Develop capability for predicting the source term of releases of chemical, biological, and industrial materials. FY 2014 Accomplishments: Continued development of waterborne inverse transport modeling capability in conjunction with the verification and validation effort for waterborne transport models. Continued interior building transport and dispersion modeling effort to improve modeling of outdoor dispersion from indoor release and modeling of indoor dispersion in multiple buildings from an outdoor release, simulating wide-area effects of a release in an urban environment. Initiated verification and validation of interior building transport and dispersion models. Continued development of a generalized capability for virtual test and evaluation for evaluating/stressing source characterization and hazard refinement techniques. Developed and conducted verification and validation on modules emulating a variety of sensors and solid sorbent tubes. Initiated efforts to work on advancing the urban modeling capability and optimizing the urban sub-system for interfacing transport models of varying fidelity and speed. FY 2015 Plans: Continue development of next-generation waterborne transport models in conjunction with related validation and verification efforts. Continue interior building transport and dispersion modeling effort to improve modeling of outdoor dispersion from indoor release and modeling of indoor dispersion in multiple buildings from an outdoor release, simulating wide-area effects of a release in an urban environment. Complete initial verification and validation of interior building transport and dispersion models. Continue development of a generalized capability for virtual test and evaluation for evaluating/stressing source characterization and hazard		7.073	2.931	4.907

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 2		R-1 Program Element (Number/Name) PE 0602384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>		Project (Number/Name) CB2 / <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
refinement techniques. Focus on bridging the gap between meso- and micro-scale turbulence simulations. Continue advancing the urban modeling capability and optimizing the urban sub-system for interfacing transport models of varying fidelity and speed. FY 2016 Plans: Complete development of waterborne transport and dispersion models, including advancements to the Incident Command Tool for Drinking Water Protection (ICWater), System for Hazard Assessment of Released Chemicals (SHARC), and associated documentation. Continue related field studies to validate waterborne transport and dispersion model outputs. Continue interior building transport and dispersion modeling effort to improve modeling of outdoor dispersion from indoor release and modeling of indoor dispersion in multiple buildings from an outdoor release, simulating wide-area effects of a release in an urban environment. Continue high-resolution and probabilistic meteorology research, incremental numerical weather prediction system upgrades, and provide operational support for the Environmental Data Enterprise (EDE). Initiate work to optimize the urban subsystem modeling capability and develop capability to perform linked Bayesian and increase the fidelity of source term estimation in urban environments. Continue development of MicroSWIFT/SPRAY (MSS) to improve hazard prediction in urban environments in Hazard Prediction and Assessment Capability (HPAC). Continue advancing the urban modeling capability and optimizing the urban sub-system for interfacing transport models of varying fidelity and speed. Continue research and development to enhance the fidelity of the missile intercept modeling capability within the HPAC.					
Title: 6) Data Analysis Description: Develop CBRN data sharing capabilities and simulation tools. Develop chapters of the Chemical and Biological Agent Effects Manual Number 1 (CB-1), an authoritative source capturing analytical methods for evaluating the effects of CB agents on equipment, personnel, and operations. FY 2015 Plans: Begin initial chapter development of the Chemical and Biological Agent Effects Manual Number 1. Initiate field trial data source transport and dispersion community. FY 2016 Plans: Continue providing access of field trial data sources to transport and dispersion community. Continue to develop additional chapters of the Chemical and Biological Agent Effects Manual Number 1 (CB-1). Draft chapters to be completed include Chapter 12 - Human Factors, Chapter 8 - Structures/Site Characteristics. Continue work drafting Chapter 13 - Consequence Assessment and Chapter 15 - Battlespace Management. Begin work on Chapter 14 - Consequence Management, Chapter 18 - Material Effects, Chapter 19 - Mission Effects, and Chapter 20 - Risk Assessment. Much of the efforts to become more mature and transition to CB3.			-	3.883	1.353
Title: 7) Data Analysis			3.736	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 2		R-1 Program Element (Number/Name) PE 0602384BP / CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)		Project (Number/Name) CB2 / CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Description: Develop CBRN data sharing capabilities and simulation tools.					
FY 2014 Accomplishments: Continued to develop additional chapters of the Chemical and Biological Agent Effects Manual Number 1 (CB-1), an authoritative source capturing analytical methods for evaluating the effects of CB agents on equipment, personnel, and operations. Initiated new chapters related to consequence assessment and site characteristics. Completed study on animal and human effects from time-varying toxic industrial chemical concentration exposures.					
Title: 8) Operational Effects & Planning Description: Develop decision support tools and information management capabilities for planning and real-time analysis to determine and assess operational effects, risks, and impacts of CBRN incidents on decision making. Focus areas include consequence management, population modeling, and human knowledge management. FY 2014 Accomplishments: Continued operational effects research and analysis efforts to provide the CBDP with objective, quantitative analysis in support of science and technology initiatives, material developments, operational guidance, and requirements setting. Continued system performance model integration and advanced development for program-wide exploitation. Initiated operational effects risk management framework development to inform service-specific analyses and decision-makers. FY 2015 Plans: Continue system performance model integration and advanced development for program-wide exploitation for collective and individual protection and contamination avoidance. Continue operational effects risk management framework development to inform service-specific analyses and decision-makers. Initiate Decision Support Tool to address Joint Operations Effects requirements and CBDP directed risk-based planning and decision making. The Decision Support Tools will also address the needs of the Operational Test Agencies (OTAs) infrastructure requirements. FY 2016 Plans: Continue system performance model integration and advanced development for program-wide exploitation for collective and individual protection and contamination avoidance. Initiate health and human effects modeling capability for expanded threat list. Continued operational effects research and analysis efforts, previously referred to as Decision Support Tool, to provide the CBDP with objective, quantitative analysis in support of science and technology initiatives, material developments, operational guidance, and requirements setting.			1.412	7.373	9.026
Title: 9) Filtration			2.596	3.943	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<p>Description: Development and integration of novel filtration media into a lightweight, low-profile, and low-burden individual protective filter, which has enhanced performance against a broader range of challenges that includes toxic industrial chemicals (TICs).</p> <p>FY 2014 Accomplishments: Continued development of next generation filtration technology. Continued focus on low resistance/low profile novel filter media with augmented performance against TICs and chemical agents. Continued to replace legacy filter media with novel media that offers broad spectrum protection. Continued with technology areas to include: metal organic frameworks, novel adsorbents and reactive hybrids and transitioned these technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs.</p> <p>FY 2015 Plans: Transition a synthetic nano-structured material focused on toxic industrial chemical removal, including ammonia.</p>					
<p>Title: 10) Lightweight Integrated Fabric</p> <p>Description: Development of lightweight chemical and biological protective textiles that can be used as an integrated combat duty uniform.</p> <p>FY 2014 Accomplishments: Continued to develop new low burden fabrics and ensemble designs to support the Uniform Integrated Protective Ensemble (UIPE) programs with a focus on whole system assessments. Continued with development areas that include: evaluation of superoleophobic materials, refinement of "man in simulant test" sensors, continuation of aerosol system testing, advanced adsorbent nanofiber/textile production technology, and smart materials. Continued exploring multifunctional material design and synthesis to identify dynamic materials that integrate functionality and durability to improve CB protection by increasing protection factors and reducing physical burden. Continued exploring integration of functionality that may provide adaptive materials and capabilities for CB defense countermeasures that sense, transduce, respond and mitigate threats.</p> <p>FY 2015 Plans: Transition new low burden fabrics and ensemble designs to the UIPE programs. Complete development areas that include: evaluation of materials with high resistance to organic compounds, refinement of "man in simulant test" sensors, aerosol system testing, advanced adsorbent nanofiber/textile production technology, and smart materials. Transition materials that integrate functionality and durability to improve CB protection by increasing protection factors and reducing physical burden. Conduct a demonstration of new fabric technologies.</p>			3.538	3.315	-
<p>Title: 11) Personnel Decontamination</p>			-	1.478	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Description: Develop new technologies to alleviate the risk associated with contaminated human remains and personal effects (materials) exposed to and contaminated by chemical, biological, and radiological agents by neutralizing and/or physically removing the residual chemical, biological, and radiological agents. FY 2015 Plans: Initiate Personnel Decontamination hazard mitigation projects to decontaminate individual human remains and manage personal effects following exposure to CWAs/NTAs/TICS/TIMs (Chemical Warfare Agents/Non-Traditional Agents/Toxic Industrial Chemicals/Toxic Industrial Materials). Determine the fate and residual hazard of chemical, biological, and radiological warfare agents (CBRs) on contaminated human remains and personal effects; develop technological options to remove/neutralize CBR hazards from individual human remains and personal effects.					
Title: 12) Percutaneous Protection Description: Study and assessment of percutaneous protective technologies. FY 2016 Plans: Develop both force protection and situational awareness through the improvement of multi-functional materials that exhibit broad-reaching, cross-cutting capabilities in chemical/biological sensing and detoxification. Validate response mechanisms of dynamic materials that conform to the challenge amount.			-	-	5.172
Title: 13) Expeditionary Collective Protection Description: Develop new technologies for soldiers to determine the remaining chemical vapor service life of their chemical warfare agent (CWA) filters. FY 2016 Plans: Finalize component design and begin verification testing of a satellite filter cartridge system that will be investigated into a field application for long term exposure in an operationally relevant environment.			-	-	0.941
Title: 14) Threat Agent Sciences Description: Supports defensive countermeasure development against current and emerging chemical and biological threats by delivering the scientific understanding and relevant estimates of the hazards posed to humans by exposure to chemical or biological agents. Toxicological and/or infectious-dose information and environmental response supports development and/or enhancing both operational risk and exposure guidelines; limits for detection and protection; goals for decontamination; and medical countermeasures. FY 2014 Accomplishments:			2.693	4.440	3.845

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
<p>Continued investigations that describe fundamental mechanisms that contribute to biological agent persistence and transport in the environment. Continue effort to define particle properties and predict aerosolization behavior to inform hazard assessment. Studied biological modulation in natural or laboratory environments through genetic drift to inform forensic examination of threats.</p> <p>FY 2015 Plans:</p> <p>Continue to define particle properties and predict aerosolization behavior to inform hazard assessment. Move towards methods for rapid prediction of agent-substrate interactions/including correlation of agent physical properties. Develop models for absorption, distribution, metabolism, and excretion and toxicology (ADMET) for understanding operationally relevant exposure effects and use in building predictive toxicology capabilities. Continue assessing the impact of environmental factors on threat agent activity (persistence, transport, degradation, resuspension, etc).</p> <p>FY 2016 Plans:</p> <p>Continue to define particle and agent properties and predict aerosolization behavior to inform hazard assessment. Continue developing methods to facilitate rapid prediction of agent-substrate interactions/ including correlation of physical agent properties. Continue assessing the impact of environmental factors on threat agent activity (pyrotechnic dissemination, persistence, transport, degradation, resuspension, etc). Continue developing ADMET models of physiological response to agent and predictive toxicology capabilities. Characterize priority emerging chemical and biological threats to provide critical agent parameters to decision makers and technology developers.</p>												
Title: 15) SBIR/STTR										-	0.638	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.												
Accomplishments/Planned Programs Subtotals										44.102	54.061	52.131
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• CB3: CHEMICAL BIOLOGICAL DEFENSE (ATD)	19.317	17.722	16.062	-	16.062	16.676	15.982	15.577	15.698	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
N/A												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>	Project (Number/Name) CB2 / <i>CHEMICAL BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 2					R-1 Program Element (Number/Name) PE 0602384BP / CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)				Project (Number/Name) NT2 / TECHBASE NON-TRADITIONAL AGENTS DEFENSE (APPLIED RESEARCH)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
NT2: TECHBASE NON- TRADITIONAL AGENTS DEFENSE (APPLIED RESEARCH)	-	65.230	71.534	67.047	-	67.047	70.538	73.984	72.124	72.677	Continuing	Continuing

A. Mission Description and Budget Item Justification

Project NT2 provides early applied research to enhance and develop defensive capabilities against Non-Traditional Agents (NTAs). This project focuses on expanding scientific knowledge required to develop defensive capabilities and to demonstrate fast and agile scientific responses to enhance or develop capabilities that address emerging threats. Efforts in this project support an integrated approach to counter emerging threats through innovative science and technology (S&T) solutions for detection, protection, decontamination, information systems and modeling and simulation, and medical countermeasures. This project is a comprehensive and focused effort for developing NTA defense capabilities, coordinated with specific interagency partners for doctrine, equipment, and training for the Warfighter and civilian population for defense against NTAs.

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

	FY 2014	FY 2015	FY 2016
Title: 1) Material Contamination Mitigation	0.517	1.348	1.608
Description: Study and assessment of decontamination technologies.			
FY 2014 Accomplishments: Initiate development of decontamination technologies against NTAs. Continued to develop decontamination technologies and formulations that are optimized against NTAs. Continued to develop, demonstrate, and transition enzyme technology for low-impact decon of NTAs. Continued to integrate with the Decontamination Family-of-Systems effort.			
FY 2015 Plans: Continue to assess performance and unique aspects of full spectrum of NTAs and develop technologies to optimize performance against NTAs. This includes the investigation and analysis of additional categories of emerging threats.			
FY 2016 Plans: Integrate NTAs, including newly identified emerging threats into the continuing Dial-a-Decon, sensitive equipment decontamination (enzyme) projects, responsive coatings, multiple system integration, and the full hazard mitigation technology development portfolio.			
Title: 2) Personnel Contamination Mitigation	-	-	0.529

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<p>Description: Develop new technologies to alleviate the risk associated with contaminated human remains and personal effects (materials) exposed to and contaminated by chemical agents by neutralizing and/or physically removing the residual chemical agents.</p> <p>FY 2016 Plans: Transition Human Remains storage data to the Family-of-Systems. Initiate Personnel Decontamination hazard mitigation projects to develop an alternative to RSDL (Reactive Skin Decontamination Lotion). Initiate mass casualty Personnel Decontamination projects to develop technology to manage the specific issues (through put and efficacy) associated with mass casualty decontamination.</p>			
<p>Title: 3) Chemical Diagnostics - Medical</p> <p>Description: Focuses on developing state-of-the-art laboratory/fieldable methods to detect exposure to non-traditional agents in clinical samples. Identifies biomolecular targets that can be leveraged as analytical methodologies, as well as, laboratory and animal studies characterizing time-course and longevity of a particular analyte/biomarker. Supports the analytics for traditional agent diagnostics and hand-held diagnostic technologies that might be applied to NTA diagnostics.</p> <p>FY 2014 Accomplishments: Identified potential biomarkers that may pre-symptomatically diagnose NTA exposure. Developed initial methods for identification and validation of NTAs in clinical samples for additional compounds of interest.</p> <p>FY 2015 Plans: Expand NTA biomarker discovery for additional compounds. Continue method development for identification and validation of NTAs in clinical samples for additional compounds of interest.</p> <p>FY 2016 Plans: Continue to expand NTA biomarkers for additional compounds. Optimize method development for identification and validation of NTAs in clinical samples for additional compounds of interest.</p>	1.916	2.384	2.291
<p>Title: 4) Chemical Pretreatments - Medical</p> <p>Description: Develops pretreatments that provide protection against non-traditional agents. Enzymes should have the ability to rapidly bind and detoxify nerve agents, and have broad binding specificity and high catalytic efficiency for the destruction of agents.</p> <p>FY 2014 Accomplishments:</p>	10.893	15.093	13.491

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Continued studies to develop new catalytic bioscavengers for Non-Traditional Agent (NTA) exposure. Pursued development of small molecule pretreatments against NTA exposure. FY 2015 Plans: Continue studies to develop catalytic bioscavenger for NTA exposure. Continue development of small molecule pretreatments with high catalytic efficiency against NTA exposure FY 2016 Plans: Continue focused studies to identify lead catalytic bioscavenger candidates against NTA exposure in validated animal models. Support development of a catalytic bioscavenger cocktail effective against multiple NTAs.			
Title: 5) Chemical Therapeutics - Medical Description: Investigates common mechanisms of agent injury. Determines the toxic effects of agents by probable routes of field exposure, as well as standard experimental routes. Physiological parameters and pathological assessment will be used to establish the general mode and mechanism(s) of toxicity. Develops, assesses, evaluates, and validates therapeutics for treatment resulting from exposure to Non-Traditional Agents (NTA). FY 2014 Accomplishments: Continued investigation of advanced and emerging threats including mechanism of action and toxicity, and continued search for effective countermeasures. Developed centrally active novel therapeutic compounds that cross the blood brain barrier. Limited screening of currently licensed Food and Drug Administration (FDA) approved countermeasures to determine potential efficacy against other classes of NTAs. Pursued absorption, distribution, metabolism and excretion studies to further elucidate agent effects. FY 2015 Plans: Continue to develop centrally acting novel therapeutic compounds that cross the blood brain barrier. Continue to screen currently licensed FDA approved countermeasures to determine potential efficacy against other classes of NTAs. Initiating research projects at the Absorption, Distribution, Metabolism and Excretion (ADME) Research Center of Excellence, with Tier 0, 1 and 2 assay potential at DoD Laboratories as a core program capability and to use to improve agent cellular and mechanistic effects understanding and facilitate countermeasure development. FY 2016 Plans: Continue optimizing centrally acting novel therapeutic compounds that cross the blood brain barrier. Investigate identified licensed FDA approved countermeasures for potential efficacy against other classes of NTAs for potential Emergency		10.893	14.679
			13.492

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Use Authorization (EUA). Continue research projects at the ADME Research Center of Excellence that improves Medical Countermeasure (MCM) profile understanding that will facilitate development.				
Title: 6) Detection Description: Primary focus is to assess the potential of multiple technologies to meet the needs to detect the presence of NTAs. FY 2014 Accomplishments: Completed and demonstrated feasibility development of plant sentinel concept. Continued development from technology concepts and models to meet the needs to detect contamination on surfaces in pre and post decontamination application. Continued integration studies for chemical aerosol detection into the Next Generation Chemical Detector (NGCD). FY 2015 Plans: Continue development from technology concepts and models to meet the needs to detect contamination on surfaces in pre and post decontamination application. Complete integration studies for chemical aerosol detection into the Next Generation Chemical Detector (NGCD) MS B. Initiate concept and technology development for chemical threat early warning detection. FY 2016 Plans: Continue development from technology concepts and models to meet the needs to detect contamination on surfaces in pre and post decontamination application. Continue concept and technology development for chemical threat early warning detection.		14.058	12.267	12.623
Title: 7) Modeling & Simulation Description: Provide modeling of NTA materials for hazard prediction. Develop NTA source term algorithms for predicting chemical hazards from intentionally functioning weapons, counter-proliferation scenarios (bomb on target), and missile intercept. Investigate NTA agent fate for secondary effects, environmental/atmospheric chemistry, atmospheric and waterborne transport and dispersion, human effects, model Validation and Verification (V&V), scaled testing, casualty estimation, and supporting data management. FY 2015 Plans: Continue analysis of data resulting from experimentation phase of small-scale testing for NTA simulants for use in creating and verifying NTA source terms, for defense against CBRN hazards. Continue to develop new NTA source term models and flexible NTA scenario models. FY 2016 Plans:		-	2.138	1.849

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Continue analysis of data resulting from small-scale testing of NTA simulants and continue test execution. Continue sensitivity and validation studies on NTA source term models and update and expand NTA databases.			
Title: 8) Modeling & Simulation Description: Provide modeling of NTA materials for hazard prediction. Develop NTA source term algorithms for predicting CBRN hazards from intentionally functioning weapons, counter-proliferation scenarios (bomb on target), and missile intercept. Investigate NTA agent fate for secondary effects, environmental/atmospheric chemistry, atmospheric and waterborne transport and dispersion, human effects, model Validation and Verification (V&V), scaled testing, casualty estimation, and supporting data management. FY 2014 Accomplishments: Completed experimentation phase of small scale testing for NTA simulants for use in creating and verifying NTA modeling source terms, for defense against CBRN hazards. Continued to develop new NTA source term scenario models and flexible scenario NTA scenario models.		1.375	-
Title: 9) Air Purification Description: Study and assessment of filter technologies. FY 2014 Accomplishments: Continued development and testing of novel materials to improve performance against NTAs. Replaced legacy filter media with novel media that offers broad spectrum NTA protection. Continued with technology areas that include: crystalline nano-porous framework materials, novel adsorbents, catalytic, nano-fibrous, composite materials and reactive hybrids. Transitioned these technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs. FY 2015 Plans: Assess performance of novel adsorbents and develop specific functionalities of absorbents on NTAs.		0.878	0.406
Title: 10) Respirator Description: Development and analysis of design alternatives for chemical and biological air purifying respirators to provide enhanced protection against NTAs with lower physical burden and improved interface with mission equipment. FY 2015 Plans: Continue the development and integration of novel seal, anti-fogging, and dual cavity technologies to protect against NTAs.		-	0.123
Title: 11) Percutaneous Protection		3.028	0.521

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<p>Description: Study and assessment of percutaneous protective technologies.</p> <p>FY 2014 Accomplishments: Continued development of low burden technologies to improve overall protective clothing performance against NTAs leading toward verification, demonstration and transition. Developed treatments that allow fabrics to protect and reduce the penetration of NTAs and increase the useful life of protective garments.</p> <p>FY 2015 Plans: Assess and optimize technologies to improve whole system performance against NTAs. The whole system performance includes the integration of the percutaneous protection with the respiratory protection, as well as effectiveness of the closures between the components of protective equipment.</p>			
<p>Title: 12) Threat Agent Sciences</p> <p>Description: Provide enabling science and technology on current and emerging threat agents to prepare for surprise which informs development and testing of NTA defense technology such as detection, decontamination, protection, hazard assessment, and more. This preliminary assessment of new threats informs decision makers and provides the basis for all countermeasure development and assessment.</p> <p>FY 2014 Accomplishments: Continued assessment of priority classes of novel threat agents providing operationally relevant exposure limits using an integrated systems toxicology approach. Defined critical physical-chemical properties and characterized/predicted agent reactivity and interactions with environmental substrates. Provided supportable knowledge, enabling countermeasure development and testing and informed concept of operations policies, doctrines and procedures. Moved towards in-silico efforts to characterize threat agents.</p> <p>FY 2015 Plans: Continue to characterize the synthesis and physico-chemical properties of priority NTAs (informed by intelligence assessments and program requirements). Continue preparing toxicity estimates for next priority NTAs. Refine and deliver human toxicity estimates for next priority NTAs. Provide supportable data to enable countermeasure development and testing as well as inform concept of operations (CONOPs), policies, doctrines and procedures. Continue to develop in-silico platforms for predicting human ADMET of threat agents.</p> <p>FY 2016 Plans:</p>	21.672	21.601	21.164

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Provide supportable data to enable countermeasure development and testing as well as inform concept of operations (CONOPs), policies, doctrines and procedures. Continue to characterize the synthesis and physico-chemical properties of priority NTAs (informed by intelligence assessments and program requirements). Continue preparing laboratory and operational toxicity estimates for next priority NTAs. Refine and deliver human toxicity estimates for next priority NTAs. Continue to develop in-silico platforms for predicting human ADMET of threat agents. Characterize priority emerging threats, including those areas where the threats converge, to provide critical agent parameters to decision makers and technology developers.			
Title: 13) SBIR/STTR	-	0.974	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	65.230	71.534	67.047

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>	21.423	21.574	22.948	-	22.948	21.392	20.129	19.603	19.759	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
TM2: TECHBASE MED DEFENSE (APPLIED RESEARCH)	-	85.828	100.722	88.933	-	88.933	80.082	82.046	85.283	85.795	Continuing	Continuing

A. Mission Description and Budget Item Justification

Project TM2 provides for applied research for innovative technology approaches to advance medical systems designed to rapidly identify, diagnose, prevent, and treat disease due to exposure to all three of radiological, chemical and biological threat agents. Categories for this project include core science efforts in Medical Chemical, Medical Biological, Diagnostics, and the Medical Countermeasures Initiative (MCMI). Against radiological threats, this project provides investment for the development of pretreatments (prophylaxis) and post-irradiation therapeutics against radiological/nuclear exposure. Against chemical and biological agents, this project funds applied research for the investigation of new medical countermeasures to include prophylaxes, pretreatments, antidotes, skin decontaminants, and therapeutic drugs against identified and emerging biological and chemical warfare agents. Medical Science and Technology (S&T) efforts in this Budget Activity refine promising medical initiatives identified in Budget Activity 1, resulting in the development of countermeasures to protect against and treat the effects of exposure to chemical and biological (CB) agents. Diagnostic research focuses on providing high quality data closer to the point-of-need comprising device innovation, panels of biomarkers driven by bioinformatics, and epidemiological modeling tools.

The Medical Countermeasures Initiative (MCMI) was established to coordinate inter-related advanced development and flexible manufacturing capabilities, providing a dedicated, cost-effective, reliable, and sustainable MCM process that meets the Warfighter and national security needs. MCMI efforts within science and technology (S&T) are concentrated in advancing two areas: 1) regulatory science and 2) flexible manufacturing technologies and processes for MCMs. Efforts conducted in these areas are enablers supporting the DoD Medical Countermeasures Advanced Development and Manufacturing (MCM-ADM) capability.

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

	FY 2014	FY 2015	FY 2016
Title: 1) Biosurveillance	-	3.603	4.000
Description: Biosurveillance/Disease Surveillance: Integrate existing disparate military and civilian datasets, investigate methodologies to appropriately integrate open source data into advanced warning systems, and leverage and enhance advanced epidemiological models and algorithms for disease prediction, forecasting, impact and biological threat assessment. Contribute to the development of global, near real-time, disease monitoring and surveillance systems that address secondary infection, fuse medical syndromic, environmental, and clinical data, and feed into disease modeling, medical resource estimation and decision support tools. The Chem Bio Defense Program partners with civil agencies and DoD agencies to provide near real-time information and provide USG-wide situational awareness, yielding analytical and predictive capabilities for DoD decision makers including Combatant Commanders.			
FY 2015 Plans:			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>Complete effort to develop a flexible set of data driven models that dynamically assesses the socio-economic response to the spread of disease and, in turn, the effect of that response on disease spread. Complete efforts to refine technology to enable device to cloud communications in order to fully leverage biosurveillance and point of need diagnostic efforts. Continue the development of the BSV Ecosystem to include analyst collaboration tools and advanced analytics. Initiate various biosurveillance analytic capabilities, including real-time influence forecasting, agricultural animal population database for zoonotic disease analysis, an online crowdsourcing game for bacterial genome assembly to enhance rapid pathogen discovery and identification, biosurveillance analysis using clinical diagnoses and social media indicators in military populations, capability to assess the risk of disease spread to the United States, a data-driven framework for zoonotic disease prediction, biosurveillance visualization capabilities, a Global Rapid Identification Tool for diagnosing infectious disease bioevents, and a biosurveillance analytics verification and validation capability.</p> <p>FY 2016 Plans: Continue the development of the BSV Ecosystem to include analyst collaboration tools, advanced analytics, and analyst workbench. Continue various biosurveillance analytic capabilities, including real-time influence forecasting, agricultural animal population database for zoonotic disease analysis, an online crowdsourcing game for bacterial genome assembly to enhance rapid pathogen discovery and identification, biosurveillance analysis using clinical diagnoses and social media indicators in military populations, capability to assess the risk of disease spread to the United States, a data-driven framework for zoonotic disease prediction, biosurveillance visualization capabilities, and a Global Rapid Identification Tool for diagnosing infectious disease bioevents.</p>			
<p>Title: 2) Chemical Diagnostics</p> <p>Description: Focuses on developing state-of-the-art laboratory/fieldable methods that detect exposure to chemical warfare agents (CWA) (e.g., nerve agents and vesicants) or radiological agents in clinical samples. Identifies biomolecular targets that can be leveraged as analytical methodologies, as well as, laboratory and animal studies characterizing time-course and longevity of a particular analyte/biomarker.</p> <p>FY 2014 Accomplishments: Developed first series of assays for enhancing the ability to identify sublethal exposure to emerging chemical agent threats using newly-identified biomolecular targets. Transitioned initial Non Traditional Agents (NTA) detection methods and protocols for selected compounds. Identified generic long-term ion-based markers of nerve agent exposure.</p> <p>FY 2015 Plans: Continue development of assays for enhancing the ability to identify sublethal exposure to emerging chemical agent threats using newly-identified biomolecular targets for second series of compounds. Complete final stability tests and transition Forensic Liquid</p>		0.577	0.845
		0.900	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Analysis Kit (FLAK) to partners. Expand the discovery for generic long-term ion-based markers of nerve agent exposure and develop confirmatory assays using previously discovered markers. FY 2016 Plans: Continue development of assays for enhancing the ability to identify sublethal exposure to emerging chemical agent threats using newly-identified biomolecular targets for third series of compounds. Continue developing confirmatory assays for discovered markers and initiate assay verification studies.				
Title: 3) Diagnostic Assays Description: Focuses on in-vitro assay development for viral vaccines. FY 2016 Plans: Develop in-vitro assays for Western, Eastern, and Venezuelan Equine Encephalitis (VEE) virus vaccines. Develop in-vitro assays for VEE virus protease activity and structure based discovery of viral protease inhibitors.		-	-	1.200
Title: 4) Diagnostic Assays Description: Development and verification of rapid, sensitive, and specific tests for the identification of Biological Warfare Agents (BWAs) and their expressed pathogens and toxins in clinical specimens from Warfighters for the diagnosis of exposure/infection. Discovery of host biomarkers generated in response to exposure to biological threat agents, whether known or emerging. FY 2014 Accomplishments: Optimized processes and platform technologies employed in laboratory characterization of host and pathogen biomarker signatures of exposure and disease processes. Matured pipeline of genomics, proteomics, systems biology, and bioinformatics tools and methods to simultaneously support diagnostic tests, the development of MCMs and the analytic processes required to identify known, emerging, and re-emerging pathogens. Developed nanomaterial structure designs to enable companion diagnostics. FY 2015 Plans: Continue to optimize processes and platform technologies employed in laboratory characterization of host and pathogen biomarker signatures of exposure and disease processes. Continue to develop nanomaterial structure designs to enable companion diagnostics. Continue testing a method and develop a prototype for transport of biothreat agents in clinical and environmental samples from field to laboratory. FY 2016 Plans:		14.153	11.987	10.364

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continue to optimize processes and platform technologies employed in laboratory characterization of host and pathogen biomarker signatures of exposure and disease processes. Continue to develop nanomaterial structure designs to enable companion diagnostics.					
<p>Title: 5) Next Generation Diagnostics</p> <p>Description: Diagnostic device development to include systems able to harness next generation technologies to revolutionize clinical diagnostics in care facilities and in hospital laboratories. This investment will incorporate capabilities such as next generation sequencing and advanced biomolecular methods to harness both host and pathogen biomarkers in a threat agnostic approach that will serve all echelons of military medical care.</p> <p>FY 2014 Accomplishments: Continued to develop and mature point of need diagnostic platform technologies with orthogonal capabilities. Initiated development of a multiplexed point of care diagnostic platform for detection of biothreat agent exposure.</p> <p>FY 2015 Plans: Expand multiplexed point of need diagnostic platform technologies into syndromic-based panels. Begin transition of candidate diagnostic technologies to Next Generation Diagnostic Systems, Increment 2. Develop and evaluate candidate host biomarker diagnostic targets in analytical test environments.</p> <p>FY 2016 Plans: Continue development of multiplexed point of need diagnostic platform technologies into syndromic-based panels. Continue transition of candidate diagnostic technologies to Next Generation Diagnostic Systems, Increment 2.</p>			12.116	11.956	10.050
<p>Title: 6) Medical Countermeasures Initiative</p> <p>Description: Integrate the regulatory science and manufacturing technologies and processes developed into the DoD Medical Countermeasures Advanced Development and Manufacturing (MCM-ADM) as enablers of the advanced development and flexible manufacturing.</p> <p>FY 2014 Accomplishments: Continued to investigate organotypic platforms for MCM evaluation: (ex-vivo heart, liver, kidney, alveolar lung sacs, and blood-brain barrier) with the goal of accelerating and enhancing the FDA-regulated medicinal product development process. Constructed next generation high yield protein expression platforms for biotechnology-based MCMs. Completed development of high capacity downstream technologies and process analytic technologies to enhance rapid manufacturing process development and control with the goal of accelerating the manufacturing of biotechnology-based MCMs.</p> <p>FY 2015 Plans:</p>			10.757	8.847	7.679

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Continue one project to investigate organotypic platforms for MCM evaluation: (ex-vivo heart, liver, kidney, lung, or blood-brain barrier) with the goal of accelerating and enhancing the FDA-regulated medicinal product development process. Construct one next generation high-yield protein-expression platforms for biotechnology-based MCMs. FY 2016 Plans: Ending one project to investigate organotypic platforms for MCM evaluation, demonstrating the integration of 3-4 different organoids on a chip. Evaluate novel conjugation approaches for polysaccharide based vaccines. Technology transfer process development and manufacturing activities to long-term partner for Advanced Development Manufacturing capability.			
Title: 7) Viral/Bacterial/Toxins Vaccines Description: Generate novel or improved vaccines against viral, bacterial and toxin biothreat agents, and demonstrate preliminary efficacy in small animal models. Identify correlates of protective immunity in animal models. FY 2014 Accomplishments: Continued refining appropriate animal models for aerosolized Burkholderia mallei and pseudomallei as well as Type A Francisella tularensis with regulatory guidance. Continued preparing and evaluating multiple novel subunit and nanoparticle Burkholderia vaccine candidates in small or large animal models with and without adjuvants. Continued defining predictive value of correlates of immunity, elicited by Burkholderia species vaccine candidates. Continued evaluating the tolerability of novel adjuvants using the Anthrax vaccine for proof of concept. Additionally, continued research to produce vaccine candidates designed to protect against emerging or genetically engineered Anthrax strains. Prepared multiple novel subunit and nanoparticle vaccine candidates for protection against aerosolized Type A Francisella tularensis infection in appropriate small and large animal models. Accelerated filovirus vaccine candidate in response to the West Africa Ebola outbreak. FY 2015 Plans: Continue the most promising in-progress animal model development projects to be refined with regulatory guidance, including animal models for aerosolized Burkholderia mallei, pseudomallei and Type A Francisella tularensis. Novel subunit Burkholderia vaccine candidates in small or large animal models will be evaluated with and without adjuvants. A selection of correlates of immunity elicited by Burkholderia species infection may be evaluated for predictive value. The most promising vaccine candidates designed to protect against genetically engineered Anthrax strains will be tested for safety and efficacy in non-human primates. Tested novel subunit vaccine candidates for protection against aerosolized Type A Francisella tularensis infection in appropriate small animal models. FY 2016 Plans: Animal model development projects will be refined with regulatory guidance, including animal models for aerosolized Burkholderia mallei and B. pseudomallei. Evaluate candidate Burkholderia vaccines in small and large animal models. Assess correlates of immunity elicited by Burkholderia and Coxiella species. Test promising vaccine candidates designed to protect against genetically		5.897	17.278
			10.682

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
engineered Anthrax strains for safety and efficacy in non-human primates. Continue testing of vaccine candidates for protection against aerosolized Type A Francisella tularensis infection and initiate alternative candidate vaccine. Expand to two approaches for Q Fever vaccines. Develop and evaluate bridging strategies for interim fielding capability readiness.				
Title: 8) Vaccine Platforms and Research Tools Description: Use novel technology and methods to support development of vaccine candidates. Conduct studies to determine potential immune interference between lead vaccine candidates, the effect of alternative vaccine delivery methods, and thermo-stabilization technologies on the efficacy of lead vaccine candidates. Identify correlates of protection in humans, and predict the success of lead vaccine candidates in humans. FY 2014 Accomplishments: Utilized relevant animal models for the evaluation of the immune response to novel multi-antigen platforms. Further refined the capabilities of the surrogate human immune system, MIMIC, which provides an in vitro assessment of the human immune response. Continued studies designed to lend regulatory credence to functional assays on the MIMIC to evaluate cross-reactivity of different Filovirus and Alphavirus strains. Increased efforts to develop methodologies which remove the need for cold storage and transport for vaccines and render them stable in variable and extreme temperatures. FY 2015 Plans: Use relevant small animal models for the evaluation of the immune response to novel multi-antigen platforms. Explore continued improvements to viral vectors and DNA vaccine platform technologies. Further refine, using 1-2 small studies, the capabilities of the surrogate human immune system, MIMIC, which provides an in vitro assessment of the human immune response. Development novel synthetic molecules as pretreatments in pertinent animal models against relevant targets. FY 2016 Plans: Maintain studies that utilize clinical samples from Filovirus outbreaks in multiple international locations to refine definition of clinically relevant correlates of immunity. Initiate novel adjuvants as platforms for utilization in biodefense vaccines. Develop and evaluate bridging strategies for interim fielding capability readiness.		2.618	6.000	8.741
Title: 9) Viral Therapeutics Description: Identify, optimize and evaluate lead candidate therapeutics for efficacy against viral pathogens. FY 2014 Accomplishments:		13.938	13.000	7.000

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 2	R-1 Program Element (Number/Name) PE 0602384BP / CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)	Project (Number/Name) TM2 / TECHBASE MED DEFENSE (APPLIED RESEARCH)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Conducted structure-based drug discovery for Alphaviruses. Developed antibody-based therapeutics for Filovirus infections. Identified and evaluated novel broad-spectrum host and pathogen directed small molecule therapeutics for emerging infectious diseases (i.e. Alphavirus, Filovirus, Flavivirus, Arenavirus, Bunyavirus). FY 2015 Plans: Evaluate FDA-approved drugs for potential repurposing as effective antivirals. Evaluate novel antibody-based therapeutics for Filovirus infections. Identify and evaluate novel pathogen-directed therapeutics for Alphaviruses. FY 2016 Plans: Evaluate FDA-approved drugs for potential repurposing as effective antivirals. Continue to evaluate novel antibody-based therapeutics for Filovirus infections. Continue identification and evaluation of novel pathogen-directed therapeutics for Filoviruses and Alphaviruses.				
Title: 10) Bacterial Therapeutics Description: Identify, optimize and evaluate lead therapeutic candidates effective against designated bacterial threat agents. FY 2014 Accomplishments: Maintained FDA approved drug screening program for Burkholderia, Francisella tularensis and determined in vitro susceptibilities. Continued evaluation of novel compounds against bacterial biological warfare agents. Evaluated bioactive peptides for the ability to stimulate host protective pathways. Identified and designed new small molecule inhibitors bacterial folate biosynthesis. Evaluated multidrug efflux systems as a target for broad-spectrum antibacterial development. FY 2015 Plans: Maintain FDA approved drug screening programs for Burkholderia, Francisella tularensis and determine in vitro susceptibilities. Refocus program on later stage optimization and testing of novel inhibitors of bacterial biological warfare agents, reducing efforts in discovery and addressing a limited number of priority pathogens. FY 2016 Plans: Augment FDA approved and late stage development drug screening programs for BWA and determine in vitro susceptibilities. Evaluate reformulation and/or targeted delivery approaches to enhance efficacy of poorly performing or failed drug candidates. Evaluate efficacy of bioactive peptides for the ability to stimulate host protective pathways in mouse models. Identify and validate novel targets and initiate small molecule screening for inhibitors. Develop alternative animal models to evaluate efficacy of candidates against otherwise nonpathogenic Multi-Drug Resistant (MDR) BW surrogate strains.		13.512	8.112	9.422
Title: 11) Toxin Therapeutics Description: Identify, optimize and evaluate therapeutic candidates that are effective against biological toxin agents.		2.493	3.000	3.000

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> Continued to characterize host proteins that interact with Botulinum Neurotoxin Progenitor (BoNT) and identify small molecule inhibitors preventing host-toxin interactions. Continued to validate differential expression of host genes involved in neuron response to BoNT intoxication. Continued to identify and develop therapies that target host proteins involved in BoNT persistence in the neuron. Continued co-crystallization studies of BoNT-inhibitor complexes.					
<i>FY 2015 Plans:</i> Continue to characterize BoNT small molecule inhibitors in vitro. Continue co-crystallization studies of BoNT-inhibitor complexes.					
<i>FY 2016 Plans:</i> Continue to characterize BoNT small molecule inhibitors in vitro. Continue co-crystallization studies of BoNT-inhibitor complexes. Initiate evaluation of late development and FDA approved drugs for treatment of staphylococcal enterotoxin B intoxication.					
<i>Title:</i> 12) Pretreatments, Nerve Agents <i>Description:</i> Develops pretreatments that provide protection against all organophosphorous nerve agents. Enzymes should have the ability to rapidly bind and detoxify nerve agents, and have broad binding specificity and high enzymatic efficiency for the destruction of agents.			5.446	9.105	10.014
<i>FY 2014 Accomplishments:</i> Continued search for catalytic bioscavenger of V-type nerve agents. Continued studies to develop a broad spectrum regimen of V- and G-type nerve agent catalytic bioscavengers.					
<i>FY 2015 Plans:</i> Continuing efforts to develop effective bioscavengers (stoichiometric and catalytic). Continue development of broad spectrum regimen of catalytic bioscavengers effective against multiple nerve agents.					
<i>FY 2016 Plans:</i> Realign efforts to emphasize catalytic bioscavengers. Select promising G-type nerve agent catalytic bioscavengers candidates to humanize. Continue developing V-type nerve agent catalytic bioscavenger, and a regimen of catalytic bioscavengers effective against multiple nerve agents.					
<i>Title:</i> 13) Chemical Therapeutics <i>Description:</i> Focuses on therapeutic strategies to effectively minimize neurologic injuries resulting from exposure to CWAs. This effort involves the development of neuroprotectants, anticonvulsants, and improved neurotransmitter restorers. This work is designed to develop potential candidates that will ultimately be submitted for Food and Drug Administration (FDA) licensure or new indications for previously licensed products for use in the treatment of chemical warfare casualties.			4.321	5.473	5.881

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
FY 2014 Accomplishments: Continued investigations of potential for broad spectrum/centrally active cholinesterase reactivators. Continued studies to facilitate therapeutics crossing the blood brain barrier. Explored molecular, nanomaterial-based drug delivery platforms.												
FY 2015 Plans: Formal data package will transfer to advanced development for scopolamine as an adjunct therapeutic. Continue to reduce the scope of development of technology to facilitate delivery of therapeutic regimen to the central nervous system (crossing the blood brain barrier). Explore molecular, nanomaterial-based drug delivery platforms. Continue to investigate the potential for broad spectrum/centrally acting cholinesterase reactivators.												
FY 2016 Plans: Continue focus on refined technology that facilitates delivery of therapeutic regimen to the central nervous system (crossing the blood brain barrier). Select promising molecular, nanomaterial-based drug delivery platforms for further development. Continue supporting the development and screening for new potential leads as broad spectrum/centrally acting cholinesterase reactivators.												
Title: 14) SBIR/STTR										-	1.516	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.												
Accomplishments/Planned Programs Subtotals										85.828	100.722	88.933
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• TM3: TECHBASE MED DEFENSE (ATD)	93.949	110.310	93.725	-	93.725	96.359	97.445	96.329	98.080	Continuing	Continuing	
• MB4: MEDICAL BIOLOGICAL DEFENSE (ACD&P)	132.696	106.380	81.916	-	81.916	49.207	28.642	16.949	7.710	Continuing	Continuing	
• MC4: MEDICAL CHEMICAL DEFENSE (ACD&P)	1.970	-	-	-	-	-	-	-	-	-	1.970	
• MB5: MEDICAL BIOLOGICAL DEFENSE (EMD)	253.748	179.497	117.881	-	117.881	170.122	209.182	215.905	208.482	Continuing	Continuing	
• MC5: MEDICAL CHEMICAL DEFENSE (EMD)	40.973	48.529	42.913	-	42.913	49.322	38.153	25.158	6.371	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015	
Appropriation/Budget Activity 0400 / 2				R-1 Program Element (Number/Name) PE 0602384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (APPLIED RESEARCH)</i>				Project (Number/Name) TM2 / <i>TECHBASE MED DEFENSE (APPLIED RESEARCH)</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	0.493	13.414	11.801	-	11.801	10.420	3.137	13.943	12.496	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
N/A											
E. Performance Metrics											
N/A											

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>					R-1 Program Element (Number/Name) PE 0603384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	140.595	155.374	140.094	-	140.094	145.877	144.556	142.008	144.811	Continuing	Continuing
CB3: <i>CHEMICAL BIOLOGICAL DEFENSE (ATD)</i>	-	19.317	17.722	16.062	-	16.062	16.676	15.982	15.577	15.698	Continuing	Continuing
NT3: <i>TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)</i>	-	21.423	21.574	22.948	-	22.948	21.392	20.129	19.603	19.759	Continuing	Continuing
TM3: <i>TECHBASE MED DEFENSE (ATD)</i>	-	93.949	110.310	93.725	-	93.725	96.359	97.445	96.329	98.080	Continuing	Continuing
TT3: <i>TECHBASE TECHNOLOGY TRANSITION</i>	-	5.906	5.768	7.359	-	7.359	11.450	11.000	10.499	11.274	Continuing	Continuing

A. Mission Description and Budget Item Justification

Demonstrates technologies supporting transition to advanced component development in the areas of physical capabilities (biological and chemical detection, situational awareness and effects modeling, and protection and hazard mitigation) and medical capabilities (pretreatments, therapeutics, diagnostics capabilities, and drug manufacturing and regulatory science technologies), including capabilities against non-traditional agents. Major efforts support enhanced chemical detection capabilities for aerosols and non-traditional agents, expanded capabilities for biosurveillance in pathogen detection and diagnosis, and pretreatments and therapeutics against a broader set of chemical and biological agents.

In the physical sciences area, Project CB3 focuses on demonstrations of CB defense technologies, including biological detection, chemical detection, information system technology for hazard prediction and systems performance, and protection, and decontamination. The Project continues to pursue solutions against traditional agents.

All non-traditional agent (NTA)-dedicated research (both medical and non-medical) is consolidated in Project NT3. This Project includes NTA chemical diagnostics, medical pretreatments, therapeutics, detection, and protection and hazard mitigation.

The medical program in Project TM3, aims to produce biological diagnostic assays and reagents, diagnostic device platforms, pretreatments and therapeutics for bacterial, viral, and toxin threats as well as for chemical threats, and medical devices, as countermeasures for CBR threat agents. Specific areas of medical investigation include: prophylaxis, pretreatment, antidotes and therapeutics, personnel and patient decontamination, and medical management of casualties.

Project TT3, Techbase Technology Transition, pursues efforts to enhance military operational capability, concepts of operation, WMD elimination, and hazard mitigation following a biological warfare or chemical warfare attack.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program	Date: February 2015
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>
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The PE is dedicated to conducting proof-of-principle field demonstrations, and testing system-specific technologies to meet specific military needs. Work conducted under this PE will transition to and will provide risk reduction for PE 0603884BP/PE 0604384BP activities.

FY 2015 funding includes \$132.7 million of base funding and \$22.7 million of Ebola emergency funding.

B. Program Change Summary (\$ in Millions)	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016 Base</u>	<u>FY 2016 OCO</u>	<u>FY 2016 Total</u>
Previous President's Budget	144.847	132.674	136.597	-	136.597
Current President's Budget	140.595	155.374	140.094	-	140.094
Total Adjustments	-4.252	22.700	3.497	-	3.497
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	22.700			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.543	-			
• SBIR/STTR Transfer	-1.709	-			
• Other Adjustments	-	-	3.497	-	3.497

Change Summary Explanation

Funding: N/A

Schedule: N/A

Technical: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603384BP / CHEMICAL/BIOLOGICAL DEFENSE (ATD)				Project (Number/Name) CB3 / CHEMICAL BIOLOGICAL DEFENSE (ATD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
CB3: CHEMICAL BIOLOGICAL DEFENSE (ATD)	-	19.317	17.722	16.062	-	16.062	16.676	15.982	15.577	15.698	Continuing	Continuing
A. Mission Description and Budget Item Justification												
Project CB3 develops technology advancements for joint service application in the area of information systems and modeling and simulation technologies. These activities will speed maturing of advanced technologies to reduce risk in system-oriented integration/demonstration efforts. Information systems advanced technology focuses on areas of advanced warning and reporting, hazard prediction and assessment, simulation analysis and planning, and systems performance modeling.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: 1) Material Contamination Mitigation									1.161	1.171	2.096	
Description: Demonstration of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application.												
FY 2014 Accomplishments: Continued the development, demonstration, and transition of non-traditional decontamination technologies and approaches which gain significantly improved effectiveness by complementary application. Continued to integrate and demonstrate robust surface chemistry and decontamination process analysis using ultra high vacuum system into technology maturation process for hazard mitigation. Continued to develop coatings, innovative chemistries/processes, enzyme approaches to hazard mitigation, human remains decontamination processes, and radiological/nuclear decontamination/hazard mitigation capabilities. Transitioned quantitatively evaluated interim capability for radiological/nuclear decontamination/hazard mitigation.												
FY 2015 Plans: Continue S&T efforts related to Dial-a-Decon and Enzyme Decon projects. Investigate non-aqueous formulations and responsive coatings.												
FY 2016 Plans: Complete maturation of formulation component of Dial-a-Decon project. Conduct a technology readiness assessment and transition data package. Continue development of the Dial-a-Decon brassboard to enhance efficacy by modifying dissemination of formulations. Initiate development of the next generation of hazard mitigation technologies that include integration of multiple systems to achieve efficacy goals. Conduct a field trial of Wide Area Decon technologies. Continue responsive coatings projects to enhance decontaminability as part of the systems approach to achieving efficacy goals.												
Title: 2) Percutaneous Protection									-	-	1.265	
Description: Study and assessment of percutaneous protective technologies.												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
FY 2016 Plans: Investigate engineering and manufacturing limitations for the production and system integration of multifunctional materials. Develop system integration approaches for incorporation of those materials in protective garments.					
Title: 3) Respiratory and Ocular Protection Description: Demonstration of design alternatives for chemical and biological air-purifying respirators to provide enhanced protection with lower physiological burden and improved interface with mission equipment. FY 2014 Accomplishments: Developed prototype respirator and conduct testing in a relevant environment. FY 2015 Plans: Continue the development of a prototype respirator and conduct testing in a relevant environment.			1.593	0.360	-
Title: 4) Respiratory and Ocular Protection Description: Demonstrate novel filtration media into a lightweight, low-profile, and low-burden individual protective filter, which has enhanced performance against a broader range of challenges that includes toxic industrial chemicals. FY 2016 Plans: Develop, fabricate, and evaluate hybrid system technology prototypes. Transition a synthetic nano-structured material focused on toxic industrial chemical removal, including ammonia.			-	-	0.823
Title: 5) Biosurveillance (BSV) Description: Integrate existing disparate military and civilian datasets, investigate methodologies to appropriately integrate open source data into advanced warning systems, and leverage and enhance advanced epidemiological models and algorithms for disease prediction, forecasting, impact and biological threat assessment. Contribute to the development of global, near real-time, disease monitoring and surveillance systems that address secondary infection, fuse medical syndromic, environmental, and clinical data, and feed into disease modeling, medical resource estimation and decision support tools. FY 2014 Accomplishments: Completed Verification and Validation (V&V) of existing agent-based epidemiological models, to include underlying population data and disease spread algorithms, along with biosurveillance data fusion, for use in robust adaptive decision making. Demonstrated data stream (inclusive of point of need diagnostic data) integration for early warning and analytical capabilities of the BSV Ecosystem. Developed analytic capabilities to synthesize and interrogate multiple sources of data to provide high confidence in the prediction, early warning and forecasting (inclusive of mitigation strategies) of infectious disease outbreaks.			1.217	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continued the development of a scalable, replicable framework to serve as the basis for a biosurveillance cloud for government data. Continued development of an infrastructure and integrated set of tools and methods for the collection, storage, recall, and cross comparison of a wide array of biologic-related data emerging from research, clinical testing, and diagnostics, and other diverse sources.					
Title: 6) Detection Description: Focuses on the detection and identification of chemical and biological threats in near real-time at a distance from the detector. Future programs focus on the improvement of algorithms, excitation sources, and detector elements to increase range, reduce false positives, increase sensitivity, and reduce cost. FY 2014 Accomplishments: Continued processes of validating ground truth systems for detection technologies (genomic and proteomic technology) field assessments. FY 2015 Plans: Continue processes of validating ground truth systems for detection technologies (genomic and proteomic technology) field assessments to lead into the initiation of sequence based comprehensive identification and characterization platform development for field forward capability. FY 2016 Plans: Continue sequence based comprehensive identification and characterization platform development for field forward capability.			5.081	4.100	4.244
Title: 7) Hazard Prediction Description: Improve battlespace awareness by accurately predicting hazardous material releases, atmospheric transport and dispersion, and resulting human effects. Develop predictive capability for the source term of releases of chemical, biological, and industrial materials. FY 2015 Plans: Continue implementation of new numerical schemes and performance optimization for transport and dispersion models. Continue enhancement of high-fidelity urban transport and dispersion. Continue configuration management of science and technology prototype to establish upgraded capabilities listed as valid requirements for Hazard Prediction and Assessment Capability/Joint Effects Model (HPAC/JEM). Initiate next-generation development of missile intercept/functioning missile effects model. Complete implementation and testing of new numerical schemes for future establishment of 64-bit/multi-core-capable models. FY 2016 Plans:			-	5.242	1.406

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continue implementation of new numerical schemes and performance optimization for transport and dispersion models. Continue enhancement of high-fidelity urban transport and dispersion. Continue configuration management of science and technology prototype to establish upgraded capabilities listed as valid requirements for Hazard Prediction and Assessment Capability/Joint Effects Model (HPAC/JEM). Continue next-generation development of missile intercept/functioning missile effects model.					
Title: 8) Hazard Prediction Description: Improve battlespace awareness by accurately predicting hazardous material releases, atmospheric transport and dispersion, and resulting human effects. Develop predictive capability for the source term of releases of chemical, biological, and toxic industrial materials. FY 2014 Accomplishments: Continued implementation of new numerical schemes and performance optimization for transport and dispersion models. Continued enhancement of high fidelity urban transport and dispersion. Continued with work on configuration management of science and technology prototype to establish upgraded capabilities listed as valid requirements for Hazard Prediction and Assessment Capability/Joint Effects Model (HPAC/JEM). Initiated final development and integration of the missile intercept/functioning missile effects model (i.e., hazard predictions given an missile intercepted in flight and hazard predictions given a missile that correctly delivers its payload). Continued providing field transport and dispersion databases and websites for community accessible permanent test archiving. Continued implementation and testing of new numerical schemes for future establishment of 64-bit/multi-core capable models.			2.158	-	-
Title: 9) Data Analysis Description: Develop chemical, biological, radiological and nuclear data-sharing capabilities. Develop chapters of the Chemical and Biological Warfare Agent Effects Manual Number 1 (CB-1), an authoritative source capturing analytical methods for evaluating the effects of CB warfare agents on equipment, personnel, and operations. FY 2014 Accomplishments: Initiated construction of a secure and capable framework for CB-1 within the Defense Threat Reduction Information Analysis Center (DTRIAC) Next Gen Scientific and Technical Information Archival and Retrieval System (STARS). Supported modeling and analysis in response to the West Africa Ebola outbreak. FY 2015 Plans: Complete construction of a secure and capable framework for CB-1 within the Defense Threat Reduction Information Analysis Center (DTRIAC) Next Gen Scientific and Technical Information Archival and Retrieval System (STARS). FY 2016 Plans:			1.643	0.052	3.797

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Implement the Chemical and Biological Agent Effects Manual Number 1 (CB-1) on the Defense Threat Reduction Information Analysis Center (DTRIAC) Next Gen Scientific and Technical Information Archival and Retrieval System (STARS).					
Title: 10) Operational Effects Description: Develop decision support tools and information management capabilities for planning and real-time analysis to determine and assess operational effects, risks, and overall impacts of CBRN incidents on decision-making. Focus areas include consequence management, population modeling, and knowledge management. FY 2014 Accomplishments: Continued system performance model integration with advanced development programs and initiated development of second generation versions of systems performance models in individual protection. FY 2015 Plans: Continue system performance model integration with advanced development programs. Complete second generation system performance model for multiple decontamination systems. FY 2016 Plans: Continue operational effects research and analysis efforts to provide the CBDP with objective, quantitative analysis in support of science and technology initiatives, material developments, operational guidance, and requirements setting.			3.790	4.024	2.431
Title: 11) Filtration Description: Demonstration of novel filtration media into a lightweight, low-profile, and low-burden individual protective filter, which has enhanced performance against a broader range of challenges that includes toxic industrial chemicals. FY 2014 Accomplishments: Continued the integration and demonstration of latest generation novel filtration media into a lightweight, low-profile, and low-burden individual protective filter, which has enhanced performance against a broader range of challenges that includes toxic industrial chemicals. Continued transitioning these technologies to the Joint Service General Purpose Mask (JSGPM) and Joint Service Aircrew Mask (JSAM) programs. FY 2015 Plans: Transition a synthetic nano-structured material focused on toxic industrial chemical removal, including ammonia.			0.913	1.102	-
Title: 12) Fabrics Description: Demonstration of lightweight chemical and biological protective textiles that can be used as an integrated combat duty uniform.			1.761	1.432	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program								Date: February 2015			
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> Continued to integrate next phase of integrated textile systems into a complete second generation candidate ensemble for the Uniform Integrated Protection Ensemble (UIPE) Phase II program. Transitioned new fabric technologies to the UIPE program. Scaled-up fabrics to ensemble prototypes and test in a relevant environment. Continued the trade-space analysis of all government, industrial, and academic candidate materials for use in future UIPE phase initiations. Completed transition of the human performance tool set to ACD&P - UIPE program so that it can be used in the optimization of protective ensemble design.			
<i>FY 2015 Plans:</i> Complete all demonstration activities of the developed fabric technologies.			
<i>Title:</i> 13) SBIR/STTR <i>FY 2015 Plans:</i> SBIR/STTR - FY15 - Small Business Innovative Research.	-	0.239	-
Accomplishments/Planned Programs Subtotals	19.317	17.722	16.062

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• CA4: <i>CONTAMINATION AVOIDANCE (ACD&P)</i>	16.800	40.088	60.192	-	60.192	41.486	3.372	2.370	7.056	Continuing	Continuing
• DE4: <i>DECONTAMINATION SYSTEMS (ACD&P)</i>	14.748	2.900	1.594	-	1.594	-	-	-	14.000	Continuing	Continuing
• IS4: <i>INFORMATION SYSTEMS (ACD&P)</i>	9.085	6.169	7.464	-	7.464	8.355	7.871	1.240	0.870	Continuing	Continuing
• TE4: <i>TEST & EVALUATION (ACD&P)</i>	12.106	18.188	17.371	-	17.371	18.836	19.199	18.803	13.717	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
N/A											
E. Performance Metrics											
N/A											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603384BP / CHEMICAL/BIOLOGICAL DEFENSE (ATD)				Project (Number/Name) NT3 / TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
NT3: TECHBASE NON-TRADITIONAL AGENTS DEFENSE (ATD)	-	21.423	21.574	22.948	-	22.948	21.392	20.129	19.603	19.759	Continuing	Continuing

A. Mission Description and Budget Item Justification

Project NT3 develops future capabilities against emerging and novel threats and verifies current capabilities against Non-Traditional Agents (NTAs). This project focuses on demonstrating fast and agile scientific responses to enhance or develop capabilities that address emerging threats. Efforts in this project support an integrated approach to develop new or enhanced countermeasures against novel and emerging threats through innovative science and technology (S&T) solutions for detection, protection, decontamination and medical countermeasures (MCMs). Efforts supply test methodologies and supporting science to verify capabilities, develop protection and hazard mitigation options, expand hazard assessment tools, and develop MCMs against NTAs. This project is a comprehensive and focused effort for developing NTA defense capabilities, coordinated with specific interagency partners for doctrine, equipment, and training for the Warfighter and civilian population for defense against NTAs. This project funds advanced technology development of NTA defense science and technology initiatives and transitions them to Budget Activities 4 and 5.

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

	FY 2014	FY 2015	FY 2016
Title: 1) Diagnostics - Medical Description: Focuses on state-of-the-art laboratory/fieldable methods that detect exposure to non-traditional agents in clinical samples. It also targets the identification of biomolecular targets that can be leveraged as analytical methodologies, as well as, laboratory and animal studies characterizing time-course and longevity of a particular analyte/biomarker. FY 2014 Accomplishments: Continued development of mature technologies that can quickly diagnose pre-symptomatic NTA exposure. Began transition method development for identification and validation of NTAs in clinical samples to the Laboratory Response Network. FY 2015 Plans: Continue development of mature technologies that can quickly diagnose pre-symptomatic NTA exposure. Continue transition method development for identification and validation of NTAs in clinical samples to the Laboratory Response Network. FY 2016 Plans: Continue development of mature technologies that can quickly diagnose pre-symptomatic NTA exposure. Continue transition method development for identification and validation of NTAs in clinical samples to the Laboratory Response Network.	0.488	0.656	0.708
Title: 2) Material Contamination Mitigation Description: Study and assessment of decontamination technologies.	0.822	1.109	2.345

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
FY 2014 Accomplishments: Continued verification, demonstration, and transition of decontamination technologies against NTAs to the Advanced Development - Decontamination Family of Systems (DFoS) program. Continued to develop and demonstrate enzyme technology for low-impact decontamination of NTAs, and transitioned these technologies. Continued to enhance NTA-related understanding and capabilities of current decontamination and hazard mitigation technologies and develop additional processes for NTA hazard mitigation.					
FY 2015 Plans: Continue to assess performance and unique aspects of full spectrum of NTAs and develop technologies to optimize performance against NTAs.					
FY 2016 Plans: Continue integration of a Point-of-Use decontaminant formulation system with optimized methods for delivery matching the agent, surface and environmental conditions, and optimized application method. Construct a multi-dimensional "Decontamination Performance Region Map" that will facilitate Point-of-Use decontaminant formulation in the field. Continue development of the Dial-a-Decon brassboard to enhance NTA efficacy by modifying dissemination of formulations and complete an assessment of Dial-a-Decon formulas. Integrate NTAs into the continuing responsive coatings projects to enhance decontaminability as part of the systems approach to achieving efficacy goals.					
Title: 3) Personnel Contamination Mitigation			-	-	0.059
Description: Develop new technologies to alleviate the risk associated with contaminated human remains and personnel effects (materials) exposed to and contaminated by chemical agents by neutralizing and/or physically removing the residual chemical agents.					
FY 2016 Plans: Explore combinations of complementary technologies to reduce the contamination hazard faster with less outside support and develop revolutionary prototype systems that sense, respond, and signal contamination.					
Title: 4) Pretreatments - Medical			3.908	6.079	7.772
Description: Develop nerve agent enzyme pretreatments that provide protection against non-traditional agents. Enzymes should have the ability to rapidly bind and detoxify nerve agents, and have broad binding specificity and high catalytic efficiency for the destruction of agents. For enzyme approaches, one molecule of catalytic bioscavenger should be capable of detoxifying numerous molecules of nerve agents resulting in the capability for a small quantity of catalytic bioscavenger to protect against a large dose of nerve agent.					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> Continued exploitation of alternative expression systems for production of recombinant butyrylcholinesterase (rBuChE). Pursued novel in-silico and/or in vitro methods to facilitate high throughput screening and development of medical countermeasures.					
<i>FY 2015 Plans:</i> Continue efforts to demonstrate feasibility of intra-muscular (IM) stoichiometric bioscavenger. Contributing to alternate manufacturing processes for rBuChE. Contribute to research efforts at the Absorption, Distribution, Metabolism and Excretion (ADME) Research Center of Excellence, with Tier 0, 1 and 2 assay potential.					
<i>FY 2016 Plans:</i> Continue efforts to demonstrate proof-of-concept for IM and pulmonary delivery of a stoichiometric bioscavenger. Continue contributing to alternate manufacturing processes for rBuChE. Demonstrate impact ADME Research Center of Excellence across multiple medical countermeasure product development efforts.					
<i>Title:</i> 5) Therapeutics - Medical <i>Description:</i> Determine the toxic effects of agents by probable routes of field exposure and refine standard experimental routes. Physiological parameters and pathological assessment will be used to establish the general mode and mechanisms of toxicity required for Medical Countermeasure (MCM) development.			8.782	2.274	2.188
<i>FY 2014 Accomplishments:</i> Conducted formulation and stability studies of therapeutic compounds. Examined small animal model safety studies of limited selected formulations of centrally active reactivators or anti-cholinergic compounds.					
<i>FY 2015 Plans:</i> Continue development of technology to facilitate delivery of therapeutic regimen to the brain. Refine small animal models to support Food and Drug Administration (FDA) licensure.					
<i>FY 2016 Plans:</i> Continue support of enabling technology to facilitate delivery of therapeutic regimen to the brain. Continue to refine and validate small animal models to support FDA licensure.					
<i>Title:</i> 6) Detection <i>Description:</i> Detection NTA: Focuses on technologies to provide NTA detection capabilities.			5.234	8.932	8.847
<i>FY 2014 Accomplishments:</i>					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continued the development of test methodology to validate signatures for chemical aerosol threat materials.					
FY 2015 Plans: Continue the development of test methodology to validate signatures for chemical aerosol threat materials.					
FY 2016 Plans: Continue integration studies for Next Generation Chemical Detector (NGCD) based on Micro Electro-Mechanical Systems components for Gas Chromatography and Mass Spectrometry. Continue the development of test methodology to validate signatures for chemical aerosol threat materials. Initiate the transfer of validated signatures into the NGCD program of record.					
Title: 7) Modeling & Simulation Description: This effort develops non-traditional agent (NTA) technology advancements for joint service application in the area of information systems and modeling and simulation technologies. These activities will speed maturing of advanced technologies to reduce risk in system-oriented integration/demonstration efforts. Information systems advanced technology focuses on areas of advanced warning and reporting, hazard prediction and assessment, simulation analysis and planning, and systems performance modeling. FY 2014 Accomplishments: Conducted analysis and oversight of NTA simulant testing related to creating and verifying NTA modeling source terms, for defense against chemical hazards. FY 2015 Plans: Complete analysis of NTA simulant testing. FY 2016 Plans: Continue sensitivity and validation studies on NTA source term models and update and expand NTA databases.			0.245	0.239	0.239
Title: 8) Air Purification Description: Study and assessment of filter technologies. FY 2015 Plans: Assess the performance of novel adsorbents and develop specific functionalities of NTAs.			-	0.377	-
Title: 9) Percutaneous Protection Description: Study and assessment of protective technologies. FY 2014 Accomplishments:			1.136	0.862	-

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B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Continued verification, demonstration and transition of low burden technologies to improve overall protective clothing performance against NTAs. Transitioned technologies to the Uniform Integrated Protective Ensemble (UIPE) program.												
FY 2015 Plans: Assess and optimize technologies to improve whole system performance against NTAs.												
Title: 10) Test & Evaluation										0.808	0.781	0.790
Description: Develops test and evaluation technologies and processes in support of NTA activities.												
FY 2014 Accomplishments: Completed initial select agent testing, and continued further prioritized select agent testing.												
FY 2015 Plans: Continue further prioritized select agent testing.												
FY 2016 Plans: Continue methodology and protocol development to support the evaluation of Next Generation Chemical Detector technologies.												
Title: 11) SBIR/STTR										-	0.265	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.												
Accomplishments/Planned Programs Subtotals										21.423	21.574	22.948
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• CA4: CONTAMINATION AVOIDANCE (ACD&P)	16.800	40.088	60.192	-	60.192	41.486	3.372	2.370	7.056	Continuing	Continuing	
• DE4: DECONTAMINATION SYSTEMS (ACD&P)	14.748	2.900	1.594	-	1.594	-	-	-	14.000	Continuing	Continuing	
• IP4: INDIVIDUAL PROTECTION (ACD&P)	0.588	6.811	4.217	-	4.217	0.400	-	-	-	-	12.016	
• MC4: MEDICAL CHEMICAL DEFENSE (ACD&P)	1.970	-	-	-	-	-	-	-	-	-	1.970	
• TE4: TEST & EVALUATION (ACD&P)	12.106	18.188	17.371	-	17.371	18.836	19.199	18.803	13.717	Continuing	Continuing	

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
TM3: TECHBASE MED DEFENSE (ATD)	-	93.949	110.310	93.725	-	93.725	96.359	97.445	96.329	98.080	Continuing	Continuing

A. Mission Description and Budget Item Justification

Project TM3 funds preclinical and early phase clinical development of vaccines, therapeutic drugs, and diagnostic capabilities to provide safe and effective medical defense against validated biological threat agents or emerging infectious disease biothreats including bacteria, toxins, and viruses. Innovative biotechnology approaches to advance medical systems designed to rapidly identify, diagnose, prevent, and treat disease due to exposure to biological threat agents will be evaluated. In addition this project supports the advanced development of medical countermeasures to include prophylaxes, pretreatments, antidotes, skin decontaminants and therapeutic drugs against identified and emerging chemical warfare threat agents. Entry of candidate vaccines, therapeutics, and diagnostic technologies into advanced development is facilitated by the development of technical data packages that support the Food and Drug Administration (FDA) Investigational New Drug (IND) processes, DoD acquisition regulations, and the oversight of early phase clinical trials in accordance with FDA guidelines. This project also supports the advanced development of medical countermeasures to protect the Warfighter against radiological/nuclear exposure.

The Medical Countermeasures Initiative (MCMi) was established to coordinate inter-related advanced development and flexible manufacturing capabilities, providing a dedicated, cost-effective, reliable, and sustainable MCM process that meets the Warfighter and national security needs. MCMi efforts within science and technology (S&T) are concentrated in advancing two areas: 1) regulatory science and 2) flexible manufacturing technologies and processes for MCMs. Efforts conducted in these areas are enablers supporting the DoD Medical Countermeasures Advanced Development and Manufacturing (MCM-ADM) capability.

FY 2015 funding includes \$87.6 million of base funding and \$22.7 million of Ebola emergency funding.

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

	FY 2014	FY 2015	FY 2016
Title: 1) Assays and Reagents	8.599	19.709	11.556
Description: Development and verification of rapid, sensitive, and specific tests for the identification of Biological Warfare Agents (BWAs) and their expressed pathogens and toxins in clinical specimens from Warfighters for the diagnosis of exposure/infection. Discovery of host biomarkers generated in response to exposure to biological threat agents.			
FY 2014 Accomplishments: Developed laboratory, data fusion informatics methodologies and specimen pipelines into robust and well-characterized signatures required to identify and bio-type emerging, re-emerging, and identify antibiotic resistant mutations and phenotypes. Developed thermostable reagents/scale-up protocols to advanced development for use in austere biosurveillance environments. Collaborated with the Centers for Disease Control (CDC) to improve diagnostic and surveillance capabilities needed to counter traditional, engineered, emerging and biological threats. Transitioned genotypic and phenotypic characterization data for ten previously selected Bacillus anthracis and previously selected Yersinia pestis isolates. Transitioned the Threat Characterization			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>Consortium (TCC) sequencing data of BSL-2 and BSL-3 bacteria. Demonstrated of extraction and analysis of differential gene expression (EDGE) bioinformatics capability. Developed Amoeba-Pure Prototype Device. Demonstrated EDGE Bioinformatics capability to OCONUS customers.</p> <p>FY 2015 Plans: Continue to mature thermostable reagents for use in austere biosurveillance environments. Continue to collaborate with the CDC to improve diagnostic and surveillance capabilities needed to counter traditional, engineered, emerging and biological threats. Complete development and transition signature analysis and assay/device for strain identification and genotyping of Burkholderia pseudomallei and CCHF virus. Continue development of Mass spectrometry protocol capable of identifying HHA false positive triggers on multiple toxin lateral flow assays. Transition sequencing and analysis of B. pseudomallei genomes and near neighbor genomes. Begin Phase II of Republic of Korea (ROK) Project Agreement to expand into pathogen discovery capabilities.</p> <p>FY 2016 Plans: Validate the performance of 50 multi-plex assays utilizing the MAGPIX format (multiplexing platform capable of performing qualitative and quantitative analysis) for the detection of Burkholderia pseudomallei and its near neighbors. Continue Phase II of ROK Project Agreement.</p>			
<p>Title: 2) Bacterial Therapeutics</p> <p>Description: Identify, optimize and evaluate potential therapeutic compounds effective against bacterial threat agents.</p> <p>FY 2014 Accomplishments: Evaluated FDA approved compounds for efficacy in non-human primate models against aerosolized challenge of B. anthracis. Continued evaluation of efficacy of novel topoisomerase inhibitor against Y. pestis and F. tularensis. Developed novel ribosome inhibitors and additional novel topoisomerase inhibitors as therapeutics for priority antimicrobial resistant bacterial pathogens. Continued pre-clinical research required to submit IND applications to the FDA for additional products or additional product indications to refresh the bacterial therapeutics product pipeline.</p> <p>FY 2015 Plans: Evaluate FDA approved compounds for efficacy in non-human primate models against aerosolized challenge of B. anthracis. Develop novel ribosome inhibitors as therapeutics for priority bacterial pathogens. Continue pre-clinical research required to submit IND applications to the FDA for additional products. Continue non-clinical work utilizing the Animal Rule for the submission of Supplemental New Drug Applications (sNDAs), reducing the focus to novel topoisomerase inhibitors and addressing a limited number of priority pathogens.</p> <p>FY 2016 Plans:</p>		11.532	15.521
			10.403

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Conduct evaluation of an FDA approved compound for efficacy in pivotal GLP non-human primate studies against an aerosolized challenge of <i>F. tularensis</i> in support of submission of a sNDA under the Animal Rule. Down select between novel ribosome inhibitors and a novel topoisomerase inhibitor as therapeutics for priority bacterial pathogens. Continue non-clinical research required to submit IND applications to the FDA for additional products. Continue supportive pivotal GLP studies to further the advancement of both novel and approved therapeutics for limited priority pathogen indications under the Animal Rule.					
Title: 3) Bacterial/Toxin Vaccines Description: Evaluate the best single agent bacterial and toxin vaccines for effectiveness against aerosol challenge in large animal models. FY 2014 Accomplishments: Initiated transition requirements in support of the ricin vaccine. Continued to test mutants of RVEc as backup candidates for improved safety and efficacy. FY 2015 Plans: Continue with the advanced developer to fulfill S&T needs in support of the ricin vaccine transition. Down-select to a back-up candidate to RVEc. FY 2016 Plans: Complete transition ricin vaccine. Utilize ongoing clinical work to generate monoclonal antibodies against ricin toxin. Demonstrate proof-of-concept efficacy for lead Tularemia Vaccine in nonhuman primate model. Continue development of a monoclonal antibody-based pretreatment against botulinum neurotoxin. Explore technology transfer of manufacturing to a suitable long-term manufacturing partner. Develop and evaluate bridging strategies for interim fielding capability readiness.			0.460	9.655	12.363
Title: 4) Biosurveillance Description: Integrate existing disparate military and civilian datasets, investigate methodologies to appropriately integrate open source data into advanced warning systems, and leverage and enhance advanced epidemiological models and algorithms for disease prediction, forecasting, impact and biological threat assessment. Contribute to the development of global, near real-time, disease monitoring and surveillance systems that address secondary infection, fuse medical syndromic, environmental, and clinical data, and feed into disease modeling, medical resource estimation and decision support tools. Program originated in CB3 in FY14, and transitioned to TM3 in FY15. FY 2015 Plans: Complete the development of a scalable, replicable framework to serve as the basis for a biosurveillance cloud for government data. Complete efforts using social media to infer individual and collective health behavior for digital threat surveillance, epidemic planning and response. Continue the development of analytic capabilities to synthesize and interrogate multiple			-	0.936	9.444

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
sources of data to provide high confidence in the prediction, early warning and forecasting (inclusive of mitigation strategies) of infectious disease outbreaks. Continue the development of the BSV Ecosystem to include analyst collaboration tools, advanced analytics, and analyst workbench. Continue the development and testing of a fieldable "smart trap" for long-term autonomous surveillance of arboviruses in mosquitoes. Initiate the development of various biosurveillance analytic capabilities including a Surveillance Window App (SWAP), a suite of five epidemiological tools for integration into the Biosurveillance Ecosystem, and a Biosurveillance Ecosystem evaluation support capability. Initiate a field forward diagnostic evaluation capability to assess technical feasibility and limitations of deploying point of need diagnostics in austere environments. FY 2016 Plans: Complete the development and testing of a fieldable "smart trap" for long-term autonomous surveillance of arboviruses. Continue the development of the BSV Ecosystem to include analyst collaboration tools, advanced analytics, and analyst workbench. Continue the development of various biosurveillance analytic capabilities including a Surveillance Window App (SWAP), a suite of five epidemiological tools for integration into the Biosurveillance Ecosystem, and a Biosurveillance Ecosystem evaluation support capability. Continue the field forward diagnostic evaluation capability to assess technical feasibility and limitations of deploying point of need diagnostics in austere environments.				
Title: 5) Chemical Diagnostics Description: Focuses on state-of-the-art laboratory/fieldable methods that detect exposure to chemical warfare agents (CWA) (e.g., nerve agents and vesicants) in clinical samples. It also targets the identification of biomolecular targets that can be leveraged as analytical methodologies, as well as laboratory and animal studies characterizing time-course and longevity of a particular analyte/biomarker. FY 2014 Accomplishments: Expanded the current set of analytical methods to more sensitive analytical platforms for the detection of CWAs in clinical samples. Evaluated new analytical methods against currently used methods. FY 2015 Plans: Continue the current set of analytical methods to more sensitive analytical platforms for the detection of CWAs in clinical samples. Continue development of new analytical methods against currently used methods. FY 2016 Plans: Continue the current set of analytical methods to more sensitive analytical platforms for the detection of CWAs in clinical samples.		0.391	0.389	0.400
Title: 6) Diagnostic Device Platforms Description: Diagnostic device development to include systems able to harness next generation technologies to revolutionize clinical diagnostics in care facilities and in hospital laboratories. This investment will incorporate capabilities such as next		26.375	19.234	20.832

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 3		R-1 Program Element (Number/Name) PE 0603384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		Project (Number/Name) TM3 / <i>TECHBASE MED DEFENSE (ATD)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
generation sequencing and advanced biomolecular methods to harness both host and pathogen biomarkers in a threat agnostic approach that will serve all echelons of military medical care. Technology transitions to the Next Generation Diagnostic System.					
FY 2014 Accomplishments: Continued to develop candidate devices for potential transition to advanced developers to support the deployment of point of care diagnostic capabilities. Developed hardware solutions and assay formats to enable point of need diagnostic capabilities. Verified clinical utility of host and pathogen biomarkers and integrate onto diagnostic platform prototype(s) that confers the ability to identify and type novel infectious agents as a function of their relationship to previously characterized pathologies.					
FY 2015 Plans: Evaluate candidate host biomarker diagnostic targets in clinical test environments. Develop point-of-need diagnostic platforms with host biomarker diagnostic assays and test performance. Evaluate metrics of host-based diagnostic approach by comparing with pathogen detection approaches (infection to detection time, sensitivity, specificity, etc.) in analytical and/or clinical environments. Continue to develop candidate devices for potential transition to support the deployment of point of care diagnostic capabilities. Continue development of hardware solutions and assay formats to enable point of need diagnostic capabilities. Verify clinical utility of host and pathogen biomarkers and integrate onto diagnostic platform prototypes that confer(s) the ability to identify and type novel infectious agents as a function of their relationship to previously characterized pathologies.					
FY 2016 Plans: Continue to develop candidate devices for potential transition to support the development of point of care diagnostic capabilities. Continue development of hardware solutions and assay formats to enable point of need diagnostic capabilities. Continue to verify clinical utility of host and pathogen biomarkers and integrate onto diagnostic platform prototypes that confer(s) the ability to identify and type novel infectious agents as a function of their relationship to previously characterized pathologies. Continue sequence based comprehensive identification and characterization platform development for field forward capability.					
Title: 7) Medical Countermeasures Initiative			13.135	9.517	10.428
Description: The MCMI will integrate the regulatory science and manufacturing technologies and processes developed into the Advanced Development and Manufacturing (MCM-ADM) as enablers of the advanced development and flexible manufacturing capability.					
FY 2014 Accomplishments: Continued development of human in vitro immune mimetic assays for FDA acceptance to enable rapid and accurate prediction of the human response to experimental vaccines and other MCMs. Continued to develop and make practical improvements to existing agile, flexible, manufacturing bioprocesses for the purpose of accelerating access to biodefense MCMs. Continued the development of a plant-based VLP vaccine. Identified additional ex-vivo cell/tissue mimetics such as precision cut tissue slices					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603384BP / CHEMICAL/BIOLOGICAL DEFENSE (ATD)	Project (Number/Name) TM3 / TECHBASE MED DEFENSE (ATD)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
to serve as predictive surrogates for accelerated MCM efficacy and safety evaluation. Supported filovirus pre-exposure/post-exposure vaccine in response to West Africa Ebola outbreak. FY 2015 Plans: Continue development of human in vitro immune mimetic assays for FDA acceptance to enable rapid and accurate prediction of the human response to experimental vaccines and other MCMs. Continue to develop and make practical improvements to existing agile, flexible, manufacturing bioprocesses for the purpose of accelerating access to biodefense MCMs. Identify long-term partner for Advanced Development Manufacturing capability. Continue the development of a plant-based VLP vaccine. FY 2016 Plans: Continue development of human in vitro immune mimetic assays for FDA acceptance to enable rapid and accurate prediction of the human response to experimental vaccines and other MCMs. Continue to develop and make practical improvements to existing agile, flexible, manufacturing bioprocesses for the purpose of accelerating access to biodefense MCMs. Continue to develop agile, flexible manufacturing processes that are amenable to the DoD Advanced Development and Manufacturing capability (ADMc).				
Title: 8) Neurologic Therapeutics Description: Focuses on therapeutic strategies to effectively minimize neurologic injuries resulting from exposure to chemical warfare agents (CWA). This effort involves the development of neuroprotectants, anticonvulsants, and improved neurotransmitter restorers. Supports eventual Food and Drug Administration (FDA) licensure of new compounds or new indications for licensed products for use in the treatment of chemical warfare casualties. FY 2014 Accomplishments: Maintained core capability for in vitro and in vivo testing efforts supporting regulatory science to facilitate FDA licensure. FY 2015 Plans: Continue efforts supporting regulatory science to facilitate FDA licensure including in vitro and in vivo testing. FY 2016 Plans: Maintain Absorption, Distribution, Metabolism and Excretion (ADME) Research Center of Excellence partnership to ensure capability for supporting regulatory science to facilitate FDA licensure.		3.752	1.649	1.244
Title: 9) Toxin Therapeutics Description: Identify, optimize and evaluate potential therapeutic candidates effective against biological toxin threat agents. FY 2014 Accomplishments:		0.412	1.000	9.500

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	Project (Number/Name) TM3 / <i>TECHBASE MED DEFENSE (ATD)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Continued evaluation of small molecule non-peptidic inhibitors for pharmacokinetic and toxicology profiles. Tested novel small molecule inhibitors in mouse model of BoNT A intoxication for efficacy.			
FY 2015 Plans: Continue evaluation of small molecule non-peptidic inhibitors for pharmacokinetic and toxicology profiles. Continue to test novel small molecule inhibitors in mouse model of BoNT A intoxication for efficacy. Initiate production, characterization, and evaluation of humanized antibody cocktail to prevent and/or treat BoNT intoxication.			
FY 2016 Plans: Continue characterization and evaluation of humanized pentavalent antibody cocktail to prevent and/or treat BoNT intoxication, advancing to preclinical studies. Complete testing of novel small molecule inhibitors in NHP model of BoNT A intoxication for efficacy. Finalize preclinical studies to advance antibody based therapeutic for staphylococcal enterotoxin B intoxication into phase I clinical trials.			
Title: 10) Vaccine Platforms and Research Tools		2.423	3.826
Description: Use novel technology and methods to support development of vaccine candidates. Conduct studies to determine potential immune interference between lead vaccine candidates, the effect of alternative vaccine delivery methods, and thermo-stabilization technologies on the efficacy of lead vaccine candidates. Identify correlates of protection in humans, and predict the success of lead vaccine candidates in humans.			3.584
FY 2014 Accomplishments: Continued formulation studies to produce a thermo-stable, spray-dried formulation of an advanced vaccine candidate. Continued to evaluate stabilization technologies that provide thermal stability to multiple classes of vaccines such as viral vectored vaccines and subunit protein vaccines. Continued to evaluate alternative (needle-free) vaccine delivery technologies such as inhalers or skin patches for the delivery of mature vaccine candidates. Utilized clinical samples from Filovirus or Alphavirus outbreaks in multiple international locations to help define clinically relevant correlates of immunity.			
FY 2015 Plans: Continue to develop alternative production platforms applying them to current CBDP vaccine needs. Conduct side-by-side studies to identify optimal adjuvants against bacterial, viral and toxin targets. Utilize clinical samples from Filovirus outbreaks in multiple international locations to help define clinically relevant correlates of immunity.			
FY 2016 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603384BP / CHEMICAL/BIOLOGICAL DEFENSE (ATD)	Project (Number/Name) TM3 / TECHBASE MED DEFENSE (ATD)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Maintain studies that utilize clinical samples from Filovirus outbreaks in multiple international locations to refine definition of clinically relevant correlates of immunity. Evaluate novel adjuvants as platforms for utilization in biodefense vaccines. Develop and evaluate bridging strategies for interim fielding capability readiness.				
Title: 11) Viral Therapeutics Description: Identify, optimize and evaluate potential therapeutic candidates effective against designated viral threat agents. FY 2014 Accomplishments: Evaluated immunotherapies for Filoviruses in non-human primate models. Continued development of antibody-based therapies for Filovirus infections. Continued screening program to determine efficacy of FDA approved compounds against emerging infectious diseases. Evaluated FDA-approved host-directed tyrosine kinase inhibitors for efficacy against Alphavirus, Filovirus, Flavivirus, Arenavirus, Bunyavirus, and Orthopoxvirus. Continued pre-clinical research required to submit IND applications to the FDA for additional products or additional product indications to refresh the viral therapeutics product pipeline. Accelerated an Ebola Virus countermeasure development in response to the West Africa outbreak. FY 2015 Plans: Evaluate immunotherapies for filoviruses in non-human primate models. Continue and repurposing screening program to determine efficacy of FDA approved compounds against emerging infectious diseases. Continue pre-clinical research required to submit IND applications to the FDA for additional products or additional product indications to refresh the viral therapeutics product pipeline. FY 2016 Plans: Evaluate immunotherapies for alphaviruses in small animal and non-human primate models. Continue a repurposing screening program to determine the efficacy of FDA approved compounds against emerging infectious diseases. Continue pre-clinical research required to submit IND applications to the FDA for additional products or additional product indications to refresh the viral therapeutics product pipeline.		13.658	1.314	2.000
Title: 12) Viral Therapeutics - Ebola FY 2015 Plans: Ebola Response (Title X) funded effort. Accelerate Ebola Virus countermeasures development in response to the West Africa outbreak. Initiate pre-clinical research, including optimization, required to submit Investigational New Drug (IND) applications to the Food and Drug Administration (FDA) and conduct Phase I clinical safety studies for near-term candidate products targeting the Ebola virus.		-	22.700	-
Title: 13) Viral Vaccines		13.212	3.300	1.971

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	Project (Number/Name) TM3 / <i>TECHBASE MED DEFENSE (ATD)</i>	

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<p>Description: Evaluates the best vaccine candidates for Alphaviruses and Filoviruses for effectiveness and duration of protective immune response against aerosol challenge in large animal models. Animal models will be developed to support FDA licensure of mature vaccine candidates.</p> <p>FY 2014 Accomplishments: Continued development of Alphavirus immunological assays to support product development. Conducted Good Lab Practices (GLP) animal efficacy studies of the VEE DNA vaccine delivered by in vivo electroporation via intra-muscular or intra-dermal administration. Continued to conduct pre-clinical studies of the Alphavirus replicon vaccine in coordination with the advanced developer. Continued the development of animals models for Alphaviruses (EEE and WEE), to fulfill future FDA 'Animal Rule' requirements necessary for vaccine licensure.</p> <p>FY 2015 Plans: Conduct Good Lab Practices (GLP) animal efficacy studies of the VEE DNA vaccine delivered by in vivo electroporation via intra-muscular or intra-dermal administration. Continue to conduct pre-clinical studies of the Alphavirus replicon vaccine in coordination with the advanced developer. Complete GLP natural history studies for Alphaviruses (W/E/VEEV). Continue the development of animals models for Alphaviruses (EEE and WEE), to fulfill future FDA 'Animal Rule' requirements necessary for vaccine licensure. Begin a Phase 1 clinical trial with a multivalent Alphavirus DNA vaccine candidate.</p> <p>FY 2016 Plans: Continue to support Alphavirus and Filovirus vaccine candidates by determining correlates of protective immunity. Continue natural history studies for Alphaviruses (W/E/VEEV) to fulfill future FDA 'Animal Rule' requirements necessary for vaccine licensure. Demonstrate proof-of-concept safety and immunogenicity with a monovalent Filovirus vaccine candidate. Develop and evaluate bridging strategies for interim fielding capability readiness.</p>			
Title: 14) SBIR/STTR	-	1.560	-
<p>FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.</p>			
Accomplishments/Planned Programs Subtotals	93.949	110.310	93.725

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&P)</i>	132.696	106.380	81.916	-	81.916	49.207	28.642	16.949	7.710	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program	Date: February 2015
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Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	Project (Number/Name) TM3 / <i>TECHBASE MED DEFENSE (ATD)</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&P)</i>	1.970	-	-	-	-	-	-	-	-	-	1.970
• MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	253.748	179.497	117.881	-	117.881	170.122	209.182	215.905	208.482	Continuing	Continuing
• MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	40.973	48.529	42.913	-	42.913	49.322	38.153	25.158	6.371	Continuing	Continuing
• MB7: <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	0.493	13.414	11.801	-	11.801	10.420	3.137	13.943	12.496	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603384BP / CHEMICAL/BIOLOGICAL DEFENSE (ATD)				Project (Number/Name) TT3 / TECHBASE TECHNOLOGY TRANSITION			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
TT3: TECHBASE TECHNOLOGY TRANSITION	-	5.906	5.768	7.359	-	7.359	11.450	11.000	10.499	11.274	Continuing	Continuing

A. Mission Description and Budget Item Justification

Project TT3 validates high-risk/high-payoff technologies, concepts-of-operations, and a new Joint Combat Development concept development and experimentation process that could significantly improve Warfighter capabilities in preparation for transition of mature technologies to advanced development programs requiring chemical and biological (CB) defense technologies. These programs offer an opportunity to identify and efficiently mature emerging technologies including limited objective experiments, laboratory experiments, risk reduction efforts, engineering and integration. These demonstrations and programs seek to demonstrate the potential for enhanced military operational capability and/or cost effectiveness. This project addresses four family of products areas: Biological Resiliency, Weapons of Mass Destruction (WMD) Elimination, Hazard Mitigation and Facilities Protection. Biological resiliency efforts are targeted to reduce biological threats. WMD Elimination addresses detection, identification, verification and baseline assessments in support of expeditionary forces deployed in non-permissive environments. Hazard Mitigation addresses Chemical, Biological, and Radiological (CBR) remediation and decontamination processes. Facilities protection transitions mature technologies to improve individual and critical infrastructure protection capabilities for U.S. and coalition Warfighters.

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

	FY 2014	FY 2015	FY 2016
Title: 1) Experiment & Technology Demonstrations	5.906	5.685	7.359
Description: Project TT3 validates high-risk/high-payoff technologies and concepts-of-operations through the use of the Advanced Technology Demonstration (ATD) and Rapid Military Utility Assessment (RMUA) processes. The RMUA is a development and experimentation process that could significantly improve Warfighter capabilities through the efficient transition of mature technologies to advanced development programs. This project addresses four family of products areas: Biological Resiliency, to include Biosurveillance; Early Warning and Remote Detection; Small Scale CBW Agent Defeat; and Hazard Mitigation.			
FY 2014 Accomplishments: Conducted technical and operational demonstrations for persistent and contagious bio agent scenarios in the US European Command Area of Responsibility (EUCOM AOR). Conducted and completed a series of vignettes addressing sampling and analysis (to include forensics preparation), characterization of a large contaminated area, decontamination approaches and medical/epidemiological management. Continued Coalition Warfare Program science and technology (S&T) efforts with Poland aimed at improving biological agent standoff detection. Established a field experiment process to assess early technology capability contributions, in collaboration with the CBDP Joint Combat Developer and with outcomes to support the creation of an initial capabilities document (ICD). Demonstrated decontamination technologies for the interior of airframes against bio agents as			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 3		R-1 Program Element (Number/Name) PE 0603384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>		Project (Number/Name) TT3 / <i>TECHBASE TECHNOLOGY TRANSITION</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
part of a Joint Capability Technology Demonstration (JCTD) initiative with US Transportation Command (TRANSCOM). Initiated a demonstration of a dual capability biological agent/force protection detection system.					
FY 2015 Plans: Three demonstrations will be ongoing in FY15: Joint Biological Agent Decontamination System (JBADS) JCTD- Demonstration of the operational utility of a interior-exterior airframe decontamination capability; Thermal Imaging Dual-Use for Aerosol Monitoring Alarms and Security (TIDAMAS)- Evaluation of a dual capability that can perform chemical standoff detection and ISR; and Joint Concept Development and Experimentation (JCDE)/Rapid Military Utility Assessment Initiative - a partnership with Maneuver Support Center of Excellence (MSCOE). Complete and transition Coalition Warfare Program science and technology (S&T) efforts with Poland aimed at improving biological agent standoff detection. Conduct extended user evaluation of recently transitioned capabilities for persistent and contagious bio agent scenarios in the US European Command Area of Responsibility (EUCOM AOR). Initiate bio-resiliency S&T development in additional AORs. Conduct a rapid military utility assessment and field experiment process to assess early technology capability contributions, in collaboration with the CBDP Joint Combat Developer and with outcomes to support CBDP requirements and capability development. Complete demonstration of decontamination technologies for airframes against bio agents as part of a JCTD initiative with US TRANSCOM. Complete and transition dual capability detection system.					
FY 2016 Plans: Develop and demonstrate prototypes and technologies for the expeditionary and disablement ATD. For the DoD/DHS collaborative biosurveillance ATD, begin technology and CONOPS/TTP development and system integration of information systems for the whole of government. Continue to conduct rapid military utility assessments and field experiments process to assess early technology capability contributions, in collaboration with the CBDP Joint Combat Developer and with outcomes to support CBDP requirements and capability development. Initiate risk reduction activities for a comprehensive early warning ATD scheduled to commence in FY17. Focus of activities will be to develop an architecture for the development of sensor and mobile platforms along with methods of information sharing to enable early warning in forward deployed locations.					
Title: 2) SBIR/STTR			-	0.083	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.					
Accomplishments/Planned Programs Subtotals			5.906	5.768	7.359
C. Other Program Funding Summary (\$ in Millions)					
N/A					
Remarks					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ATD)</i>	Project (Number/Name) TT3 / <i>TECHBASE TECHNOLOGY TRANSITION</i>
<u>D. Acquisition Strategy</u> N/A		
<u>E. Performance Metrics</u> N/A		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>					R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	189.193	180.536	172.754	-	172.754	118.284	59.084	39.362	43.353	Continuing	Continuing
CA4: <i>CONTAMINATION AVOIDANCE (ACD&P)</i>	-	16.800	40.088	60.192	-	60.192	41.486	3.372	2.370	7.056	Continuing	Continuing
CM4: <i>HOMELAND DEFENSE (ACD&P)</i>	-	1.200	-	-	-	-	-	-	-	-	-	1.200
DE4: <i>DECONTAMINATION SYSTEMS (ACD&P)</i>	-	14.748	2.900	1.594	-	1.594	-	-	-	14.000	Continuing	Continuing
IP4: <i>INDIVIDUAL PROTECTION (ACD&P)</i>	-	0.588	6.811	4.217	-	4.217	0.400	-	-	-	-	12.016
IS4: <i>INFORMATION SYSTEMS (ACD&P)</i>	-	9.085	6.169	7.464	-	7.464	8.355	7.871	1.240	0.870	Continuing	Continuing
MB4: <i>MEDICAL BIOLOGICAL DEFENSE (ACD&P)</i>	-	132.696	106.380	81.916	-	81.916	49.207	28.642	16.949	7.710	Continuing	Continuing
MC4: <i>MEDICAL CHEMICAL DEFENSE (ACD&P)</i>	-	1.970	-	-	-	-	-	-	-	-	-	1.970
TE4: <i>TEST & EVALUATION (ACD&P)</i>	-	12.106	18.188	17.371	-	17.371	18.836	19.199	18.803	13.717	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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>		R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>
<p>The Department of Defense is responsible for research, development, acquisition, and deployment of medical countermeasures to prevent or mitigate the health effects of CB threats to the Armed Forces and directs strategic planning for and oversight of programs to support medical countermeasures development and acquisition for our Armed Forces personnel. The CB medical threat to the Armed Forces, in contrast with public health threats to U.S. citizens, encompasses all potential or continuing enemy actions that can render a Service Member combat ineffective. CB medical threats, because they apply as a whole to military units deployed on a specific mission and/or operations, may result in the unit being unable to complete its mission. CB medical countermeasures developed by DoD, unlike those developed to support U.S. population, must support military commanders practical operational requirements and deployment strategies and must 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.</p> <p>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.</p> <p>ACD&P also supports the development of updated test capabilities to evaluate Chemical, Biological, Radiological, and Nuclear Defense systems. Also included is the Techbase Technology Transition effort which validates high-risk/high-payoff technologies that could significantly improve Warfighter capabilities.</p> <p>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.</p> <p>FY 2015 funding includes \$163.2 million of base funding and \$17.3 million of Ebola emergency funding.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program				Date: February 2015	
Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
0400: Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0603884BP I CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)			
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	189.237	179.236	166.946	-	166.946
Current President's Budget	189.193	180.536	172.754	-	172.754
Total Adjustments	-0.044	1.300	5.808	-	5.808
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-16.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	17.300			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.186	-			
• SBIR/STTR Transfer	-2.230	-			
• Other Adjustments	-	-	5.808	-	5.808
Change Summary Explanation					
Funding: N/A					
Schedule: N/A					
Technical: N/A					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) CA4 / CONTAMINATION AVOIDANCE (ACD&P)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
CA4: CONTAMINATION AVOIDANCE (ACD&P)	-	16.800	40.088	60.192	-	60.192	41.486	3.372	2.370	7.056	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: and Test Equipment, Strategy and Support (TESS) focuses on Test Infrastructure improvements and initiatives.

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 relevant technologies that are currently programs of record (PORs) NGDS, TDS 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 JPM NBC CA business case analysis for maritime and fixed site Point Biological Detection.

The Next Generation Chemical Detector (NGCD) consists of several detection systems. The systems will address sampling of multiple phases of matter; locating liquids and solids on surfaces; and vapor and aerosol monitoring. NGCD will detect and identify non-traditional agents, chemical warfare agents (CWAs), and toxic industrial chemicals (TICs) in the air and on surfaces. The NGCD will provide improved CWA/TIC selectivity and sensitivity on multiple platforms as well as multiple environments. These detectors will improve detection, consequence management, reconnaissance, and weapons of mass destruction (WMD) interdiction capabilities. The NGCD focuses on developing three detection systems; the NGCD variant 1 - Detector Alarm, the NGCD variant 2 - Survey Detector, and the NGCD variant 3 - Sample Analyzer detectors simultaneously during the TMRR Phase. The NGCD variant 1 will provide Joint Warfighters with a capability to detect and identify Non-Traditional Agents (NTAs), Chemical Warfare Agents (CWAs) and Toxic Industrial Chemicals (TICs) in aerosol and vapor forms. The NGCD variant 2 will provide Joint Warfighters with a capability to detect and identify liquid and solid CWAs, NTAs, and TICs on surfaces. The NGCD variant 3 will provide Joint Warfighters with a capability to collect NTA,

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CWA, and TIC chemical samples for all states of matter, identify, and quantify the chemical agent of interest in support of reconnaissance, surveillance, site assessment, and decontamination to check and confirm clean.			
The Non-Traditional Agent (NTA) Defense program supports the chemical and biological (CB) defense efforts as acquisition programs address emerging threat requirements across the full spectrum of commodities. Dedicated systems engineering analyses to identify projects that will transition information, technologies, and capabilities into acquisition programs that account for the breadth and depth of emerging threats which span the full range of military missions. By leveraging previous work done on NTAs (NTA DETECT) within the DoD, interagency cooperation, and international partnerships, 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 current NTA threats. The program will develop a balanced portfolio which will target capabilities to reduce risk from technology gaps inherent from emerging threats.			
B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Title: 1) BSV Description: Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD). FY 2016 Plans: Continue to provide residual capability for the Biological Identification Capability Sets (BICS) under the BSV USFK JUPITR ATD previously funded under MCS through FY2015.	-	-	1.700
Title: 2) BSV Description: Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD). FY 2016 Plans: Continue to provide residual capability for JUPITR Technologies specifically the Assessment of Environmental Detection (AED) previously funded under MSC through FY2015	-	-	6.069
Title: 3) BSV Description: Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD). FY 2016 Plans: Continue to provide residual capability for the Early Warning (EW) component under the BSV USFK JUPITR ATD previously funded under MCS through FY2015.	-	-	2.901
Title: 4) BSV	-	-	4.146

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Description: Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD). FY 2016 Plans: Continue to provide residual capability for the Biosurveillance Portal (BSP) under the BSV USFK JUPITR ATD previously funded under MSC through FY2015.					
Title: 5) BSV Description: Biosurveillance Joint United Forces Korea Portal and Integrated Threat Reduction (JUPITR) Advanced Technology Demonstration (ATD). FY 2016 Plans: Continue to provide residual capability and operational demonstration test support for AED, EW, BSP and BICS within the USFK JUPITR ATD previously funded under MSC through FY2015.			-	-	2.900
Title: 6) Next Generation Chemical Detector (NGCD) FY 2014 Accomplishments: Continued Government Integrated Product Development Team, program management, systems engineering and IPT support. FY 2015 Plans: Continue Government Integrated Product Development Team, program management, systems engineering and IPT support. FY 2016 Plans: Continue Government Integrated Product Development Team, program management, systems engineering and IPT support.			5.179	7.216	7.299
Title: 7) NGCD FY 2014 Accomplishments: Initiated Breadboard testing. FY 2015 Plans: Complete Breadboard testing. Initiate Brassboard testing. FY 2016 Plans: Complete Brassboard testing. Initiate Final prototype testing and Early Operational Assessment (EOA).			1.500	6.142	10.368
Title: 8) NGCD Description: NGCD1-Smiths Detection Contract			0.506	0.782	0.933

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<p><i>FY 2014 Accomplishments:</i> Awarded one contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (one system at approximately \$100,000).</p> <p><i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototype and support government testing. (two systems at approximately \$100,000 each).</p> <p><i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).</p>					
<p><i>Title:</i> 9) NGCD</p> <p><i>Description:</i> NGCD1-Signature Science Contract</p> <p><i>FY 2014 Accomplishments:</i> Awarded one contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (one system at approximately \$100,000).</p> <p><i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototypes and support government testing. (two systems at approximately \$100,000 each).</p> <p><i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).</p>			1.174	4.704	3.425
<p><i>Title:</i> 10) NGCD</p> <p><i>Description:</i> NGCD1- Chemring Chemhound Contract</p>			1.158	2.050	1.927

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> Awarded one contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (one system at approximately \$100,000). <i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototypes and support government testing. (two systems at approximately \$100,000 each). <i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).					
<i>Title:</i> 11) NGCD <i>Description:</i> NGCD2-Smiths Detection Contract <i>FY 2014 Accomplishments:</i> Awarded 1 contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (1 system at approximately \$100,000). <i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototypes and support government testing. (2 systems at approximately \$100,000 each). <i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).			0.446	0.704	0.839
<i>Title:</i> 12) NGCD <i>Description:</i> NGCD2-Chemring Contract			1.340	2.429	2.464

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> Awarded 1 contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (1 system at approximately \$100,000). <i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototypes and support government testing. (2 systems at approximately \$100,000 each). <i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).					
<i>Title:</i> 13) NGCD <i>Description:</i> NGCD2-FLIR/NOMADICS Contract <i>FY 2014 Accomplishments:</i> Awarded 1 contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (1 system at approximately \$100,000). <i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototypes and support government testing. (2 systems at approximately \$100,000 each). <i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).			1.532	3.977	3.622
<i>Title:</i> 14) NGCD <i>Description:</i> NGCD2-ChemImage Contract			1.061	2.918	3.083

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> Awarded 1 contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (1 system at approximately \$100,000). <i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototypes and support government testing. (2 systems at approximately \$100,000 each). <i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).					
<i>Title:</i> 15) NGCD <i>Description:</i> NGCD3-Bruker Contract <i>FY 2014 Accomplishments:</i> Awarded 1 contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (1 system at approximately \$100,000). <i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototypes and support government testing. (2 systems at approximately \$100,000 each). <i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).			0.637	2.382	1.786
<i>Title:</i> 16) NGCD <i>Description:</i> NGCD3-Chemring MARS Contract			1.425	2.494	2.543

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> Awarded 1 contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (1 system at approximately \$100,000). <i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototypes and support government testing. (2 systems at approximately \$100,000 each). <i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).					
<i>Title:</i> 17) NGCD <i>Description:</i> NGCD3-Battelle Contract <i>FY 2014 Accomplishments:</i> Awarded 1 contract to perform system engineering, technical management, technology experimentation, system design, manufactured breadboard prototypes and supported government testing. Breadboard Prototype systems (1 system at approximately \$100,000). <i>FY 2015 Plans:</i> Award option to mature system, design Brassboard prototypes, continue performing system engineering, technical management, technology experimentation, system design, manufacture Brassboard prototypes and support government testing. (2 systems at approximately \$100,000 each). <i>FY 2016 Plans:</i> 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 at approximately \$100,000 each).			0.842	3.765	3.487
<i>Title:</i> 18) NTA DEFENSE - Technology Assessments <i>FY 2016 Plans:</i>			-	-	0.700

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B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016
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.											
Title: 19) SBIR/STTR									-	0.525	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.											
Accomplishments/Planned Programs Subtotals									16.800	40.088	60.192
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• CA5: CONTAMINATION AVOIDANCE (EMD)	28.757	50.582	56.104	-	56.104	65.765	93.784	44.238	58.712	Continuing	Continuing
• JF0100: JOINT CHEMICAL AGENT DETECTOR (JCAD)	47.262	36.924	7.834	-	7.834	7.547	-	-	-	-	99.567
• JF0104: NEXT GEN CHEMICAL DETECTOR (NGCD)	-	-	1.000	-	1.000	2.378	1.000	17.208	17.204	Continuing	Continuing
• JN0900: NON TRADITIONAL AGENT DETECTION (NTA DETECT)	1.121	-	-	-	-	-	-	-	-	-	1.121
• JX0300: BIOSURVEILLANCE (BSV)	2.450	-	-	-	-	-	-	-	-	-	2.450
• MC0100: JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)	-	3.600	3.600	-	3.600	3.600	3.600	-	-	-	14.400
• MC0101: CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)	64.398	123.694	108.704	-	108.704	97.789	102.288	134.343	151.179	Continuing	Continuing
• MX0001: JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)	-	-	-	-	-	-	17.385	69.379	69.377	Continuing	Continuing
Remarks											

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<p><u>D. Acquisition Strategy</u> BIOSURVEILLANCE (BSV)</p> <p>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). Lessons learned from the ATD will be transitioned to the programs of record associated with the CBDP (such as NGDS, TDS & CALS). The acquisition strategy will address the materiel solutions identified out of the multiple Biosurveillance (BSV) related Analysis of Alternatives (AoA's).</p> <p>NEXT GENERATION CHEMICAL DETECTOR (NGCD)</p> <p>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 Air Monitoring capability, four (4) contracts for the Surface survey capability, and three (3) contracts for the Multi-Sample Analysis 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. Candidates for acceleration to provide partial capability will be selected from either the NGCD2 or NGCD1, based on emerging breadboard test results.</p> <p>NON TRADITIONAL AGENT DEFENSE (NTA DEFENSE)</p> <p>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 contract actions that: (1) evaluate COTS and GOTS technologies and systems, (2) conduct demonstrations and experiments, (3) integrates Intelligence Community threat analysis, JRO/ J-8 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) coordination of DoD, interagency, international NTA projects. These initiatives allow CBDP/JPEO to mitigate risk against emerging threats and better prepare the warfighter to deal with technological surprise across the full range of military missions.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** NGCD - NGCD - HW S - Prototype System Design #1	C/CPIF	Smiths Detection : Edgewood, MD	0.000	0.506	Jun 2014	0.782	Dec 2014	0.933	Nov 2015	-		0.933	Continuing	Continuing	-
NGCD - HW S - Prototype System Design #2	C/CPIF	Signature Science : Austin, TX	0.000	1.174	Jun 2014	4.704	Jan 2015	3.425	Nov 2015	-		3.425	Continuing	Continuing	-
NGCD - HW S - Prototype System Design #3	C/CPIF	Chemring Detection Systems : Inc., Charlotte, NC	0.000	1.158	Jun 2014	2.050	Dec 2014	1.927	Jan 2016	-		1.927	Continuing	Continuing	-
NGCD - HW S - Prototype System Design #4	C/CPIF	Smiths Detection : Edgewood, MD	0.000	0.446	Jun 2014	0.704	Dec 2014	0.839	Nov 2015	-		0.839	Continuing	Continuing	-
NGCD - HW S - Prototype System Design #5	C/CPIF	Chemring Detection Systems : Inc., Charlotte, NC	0.000	1.340	Jun 2014	2.429	Jan 2015	2.464	Nov 2015	-		2.464	Continuing	Continuing	-
NGCD - HW S - Prototype System Design #6	C/CPIF	FLIR/Nomadics : Stillwater, OK	0.000	1.532	Jun 2014	3.977	Dec 2014	3.622	Nov 2015	-		3.622	Continuing	Continuing	-
NGCD - HW S - Prototype System Design #7	C/CPIF	ChemImage : Pittsburgh, PA	0.000	1.061	Jun 2014	2.918	Dec 2014	3.083	Nov 2015	-		3.083	Continuing	Continuing	-
NGCD - HW S - Prototype System Design #8	C/CPIF	Bruker Detection Corp. : Billerica, MA	0.000	0.637	Jun 2014	2.382	Jan 2015	1.786	Nov 2015	-		1.786	Continuing	Continuing	-
NGCD - HW S - Prototype System Design #9	C/CPIF	Chemring Detection Systems : Inc., Charlotte, NC	0.000	1.425	Jun 2014	2.494	Dec 2014	2.543	Nov 2015	-		2.543	Continuing	Continuing	-
NGCD - HW S - Prototype System Design #10	C/CPIF	Battelle Memorial Institute : Columbus, OH	0.000	0.842	Jun 2014	3.765	Jan 2015	3.487	Nov 2015	-		3.487	Continuing	Continuing	-
** NTA DEFENSE - NTA Defense HW S - COTS Characterization	C/CPFF	Various :	0.000	-		-		0.450	Mar 2016	-		0.450	Continuing	Continuing	-
NTA Defense HW S - COTS Characterization	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	-		-		0.250	Mar 2016	-		0.250	Continuing	Continuing	-
Subtotal			0.000	10.121		26.205		24.809		-		24.809	-	-	-

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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Remarks Ten (10) contracts were awarded for Prototype System Design in FY14. FY15 & FY16 provide funds for continuation of those contracts.															
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** BSV - TD/D C - BSV-BSP residual purchase and sustainment	C/CPAF	Johns Hopkins University - Applied Physics Lab : Laurel, MD	0.000	-		-		4.183	Jan 2016	-		4.183	Continuing	Continuing	-
ES S - Assessment of Environmental Detectors (6 systems at OSAN)	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	-		-		7.132	Jan 2016	-		7.132	Continuing	Continuing	-
TD/D C - BSV - Biological Identification Capability Sets sustainment assays	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	-		-		2.763	Oct 2015	-		2.763	Continuing	Continuing	-
ES S - BSV - Early Warning sustainment costs for software package	MIPR	JPM Guardian : Aberdeen Proving Ground, MD	0.000	-		-		1.838	Oct 2015	-		1.838	Continuing	Continuing	-
** NGCD - ES S - Joint Service T&E/SE IPT	MIPR	Various :	0.000	0.620	Dec 2013	1.017	Nov 2014	1.077	Nov 2015	-		1.077	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.525		-		-		-	Continuing	Continuing	-
Subtotal			0.000	0.620		1.542		16.993		-		16.993	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) CA4 / CONTAMINATION AVOIDANCE (ACD&P)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** NGCD - NGCD- OTHT SB - Breadboard Test	MIPR	Various :	0.000	1.500	Apr 2014	-		-		-		-	Continuing	Continuing	-
NGCD - Brassboard Test	MIPR	Various :	0.000	-		6.142	Dec 2014	4.880	Dec 2015	-		4.880	Continuing	Continuing	-
NGCD-OTHT SB - Final Prototype	MIPR	Various :	0.000	-		-		3.603	Dec 2015	-		3.603	Continuing	Continuing	-
NGCD-OTHT SB - Early Operational Assessment (EOA)	MIPR	Various :	0.000	-		-		1.885	Jun 2016	-		1.885	Continuing	Continuing	-
Subtotal			0.000	1.500		6.142		10.368		-		10.368	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** BSV - PM/MS S - BSV-BMO Labor & Travel Support	MIPR	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	-		-		0.500	Aug 2016	-		0.500	Continuing	Continuing	-
PM/MS S - BSV - ECBC Matrix Govt labor	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	-		-		0.800	Oct 2015	-		0.800	Continuing	Continuing	-
PM/MS S - BSV - ECBC ATD Team	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	-		-		0.500	Mar 2015	-		0.500	Continuing	Continuing	-
** NGCD - PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	1.044	4.559	Dec 2013	6.199	Nov 2014	6.222	Nov 2015	-		6.222	Continuing	Continuing	-
Subtotal			1.044	4.559		6.199		8.022		-		8.022	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program													Date: February 2015				
Appropriation/Budget Activity						R-1 Program Element (Number/Name)						Project (Number/Name)					
0400 / 4						PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)						CA4 / CONTAMINATION AVOIDANCE (ACD&P)					
Management Services (\$ in Millions)					FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks																	
Also includes the Government Integrated Product Development Team																	
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			1.044	16.800		40.088		60.192		-		60.192	-	-	-		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) CA4 / <i>CONTAMINATION AVOIDANCE (ACD&P)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** BSV - JUPITR ATD																												
BSV - JUPITR ATD Op Demo																												
BSV - JUPITR ATD Residuals																												
BSV - Biological Identification Capability Sets (BICS) Exercises																												
BSV - Biosurveillance (BSP) Portal Software 2.0																												
BSV - Biosurveillance (BSP) Portal Software 3.0																												
BSV - Early Warning Fusion and Integration																												
BSV - Assessment of Environmental Detectors (AED) Down-Select																												
BSV - Residual Purchase - Additional Systems																												
BSV - Transition of purchase of residual end items																												
** NGCD - Milestone A																												
NGCD - Prototype Development Contract Award																												
NGCD - Initial Prototype Build																												
NGCD - Breadboard Test																												
NGCD - Brassboard Test																												
NGCD - Final Prototype Build																												
NGCD - Preliminary Design Review																												
NGCD - Final Prototype Test																												
NGCD - Milestone B																												
NGCD - EMD Contract Award																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program																						Date: February 2015																			
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>								Project (Number/Name) CA4 / <i>CONTAMINATION AVOIDANCE (ACD&P)</i>																							
										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020							
										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				
<div style="border: 1px solid black; padding: 5px;"> ** NTA DEFENSE - Technology Assessments: COTS Characterization </div>																																									

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) CA4 / <i>CONTAMINATION AVOIDANCE (ACD&P)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** BSV - JUPITR ATD	1	2014	4	2017
BSV - JUPITR ATD Op Demo	3	2015	4	2015
BSV - JUPITR ATD Residuals	1	2016	4	2017
BSV - Biological Identification Capability Sets (BICS) Exercises	1	2014	3	2015
BSV - Biosurveillance (BSP) Portal Software 2.0	4	2014	4	2014
BSV - Biosurveillance (BSP) Portal Software 3.0	4	2015	4	2015
BSV - Early Warning Fusion and Integration	1	2014	3	2015
BSV - Assessment of Environmental Detectors (AED) Down-Select	2	2015	2	2015
BSV - Residual Purchase - Additional Systems	2	2016	2	2016
BSV - Transition of purchase of residual end items	4	2015	4	2017
** NGCD - Milestone A	2	2014	2	2014
NGCD - Prototype Development Contract Award	3	2014	3	2014
NGCD - Initial Prototype Build	4	2014	1	2015
NGCD - Breadboard Test	4	2014	1	2015
NGCD - Brassboard Test	2	2015	1	2016
NGCD - Final Prototype Build	2	2016	3	2016
NGCD - Preliminary Design Review	4	2016	4	2016
NGCD - Final Prototype Test	4	2016	2	2017
NGCD - Milestone B	3	2017	3	2017
NGCD - EMD Contract Award	3	2017	3	2017
** NTA DEFENSE - Technology Assessments: COTS Characterization	1	2016	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) CM4 / HOMELAND DEFENSE (ACD&P)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
CM4: HOMELAND DEFENSE (ACD&P)	-	1.200	-	-	-	-	-	-	-	-	-	1.200
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

This Advanced Component Development and Prototypes (ACD&P) Project supports Component Advanced Development and System Integration (CAD/SI) for programs that provide a comprehensive, integrated and layered CBRN protection and response capability for military installations and specialized military consequence management units both at home and abroad. Particular emphasis is placed on improving military-civilian interoperability in CBRN detection and response capabilities; providing tiered levels of CBRN protection and response capabilities to military installations; and tailored modular and integrated Commercial off-the-shelf (COTS) solutions to consequence management units.

This program also supports the acquisition and delivery of an integrated chemical, biological, radiological, nuclear and explosive (CBRNE) rapid response capability for National Guard Bureau's (NGB) Weapons of Mass Destruction Civil Support Teams (WMD-CST) and Special Purpose Units - Chemical Biological Equipment (SPU-CBE) which consists of the CBRNE Enhanced Response Force Package (CERFP), the United States Marine Corps Chemical Biological Incident Response Force (CBIRF) the United States Army Reserve (USARC) Chemical Recon Platoons, Decon Platoons, Defense Support of Civil Authority CBRN Response Force (DCRF), and the 20th Support Command Nuclear Disablement (NDT) and CBRNE Teams. Key activities of this program include ongoing life cycle assessments for the portfolio of fielded commercial-off-the-shelf (COTS) CBRNE equipment, identification and evaluation of emerging technologies, prioritization and fielding of improved capabilities to meet established requirements, and the establishment of institutionalized training. The overall capability package includes hand held detection, protection, decontamination, situational awareness software assessment and sampling tools. The purpose of this program is to address legacy requirements gaps/deficiencies for WMD-CST's and SPU-CBE's where they exist through the streamlined acquisition of COTS/government-off-the-shelf (GOTS) capability upgrades that incorporate proven advancements in technology to satisfy mission performance standards.

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

	FY 2014	FY 2015	FY 2016
Title: 1) SPU CBE	1.200	-	-
Description: CBRN Commercial Off-The-Shelf (COTS) Equipment Evaluation			
FY 2014 Accomplishments: Conducted evaluation of Commercial Off-The-Shelf (COTS) Equipment in support of the Special Purpose Unit mission requirement.			
Accomplishments/Planned Programs Subtotals	1.200	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) CM4 / <i>HOMELAND DEFENSE (ACD&P)</i>	

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

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• CM5: <i>HOMELAND DEFENSE (EMD)</i>	14.311	16.508	17.192	-	17.192	18.108	1.518	-	-	-	67.637
• JS0004: <i>WMD - CIVIL SUPPORT TEAMS (WMD CST)</i>	13.866	13.292	5.069	-	5.069	-	-	-	-	-	32.227
• JS0005: <i>COMMON ANALYTICAL LABORATORY SYSTEM (CALS)</i>	-	-	-	-	-	17.794	41.181	64.778	63.907	Continuing	Continuing

Remarks

D. Acquisition Strategy

SPU CB EQUIPMENT (SPUCBE)

Evaluate advancements in commercial off the shelf (COTS)/government-off-the-shelf (GOTS) equipment against the current technology baseline of equipment fielded to Special Purpose Units. Establish a time phased modernization plan to integrate and incorporate proven advancements in commercially available technology into the Special Purpose Unit mission set based on highest priority capability requirements and availability of resources.

E. Performance Metrics

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>						Project (Number/Name) CM4 / <i>HOMELAND DEFENSE (ACD&P)</i>			

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** SPU CBE - DTE S - CBRN System Evaluation	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	1.200	Oct 2014	-		-		-		-	-	1.200	-
Subtotal			0.000	1.200		-		-		-		-	-	1.200	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	1.200	-	-	-	-	-	1.200	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	Project (Number/Name) CM4 / HOMELAND DEFENSE (ACD&P)	

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

** SPU CBE - COTS Equipment Evaluation																												
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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) CM4 / <i>HOMELAND DEFENSE (ACD&P)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** SPU CBE - COTS Equipment Evaluation	1	2015	3	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) DE4 / DECONTAMINATION SYSTEMS (ACD&P)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DE4: DECONTAMINATION SYSTEMS (ACD&P)	-	14.748	2.900	1.594	-	1.594	-	-	-	14.000	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 TTPs.

The programs supported under this Project include (1) Decontamination Family of Systems (DFoS), (2) Contamination Indicator Decontamination Assurance System (CIDAS), (3) General Purpose Decontaminant (GPD), (4) Joint Service Equipment Wipe (JSEW), and (5) Joint Biological Aircraft Decontamination (JBAD) System.

The DFoS program facilitates the rapid transition of mature Science and Technology (S&T) research efforts to existing Decontamination or ConMit Initial Capabilities Document (ICD) Programs of Record and guides S&T community efforts toward meeting the needs of the Warfighter. Leveraging the outcome of the Materiel Development Decision (MDD) (3QFY11) directed Analysis of Alternatives (AoA), DFoS will develop a Family of Systems (FoS) to provide novel preparatory and responsive contamination mitigation technologies to meet the capability gaps for decontaminating chemical and biological (CB) warfare agents and Non Traditional Agents (NTA) from personnel, equipment, vehicle, ship, and aircraft interiors/exterior, terrain and fixed facility interiors/exterior.

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

General Purpose Decontaminant (GPD) is a liquid decontaminant that will provide thorough decontamination capabilities for tactical vehicles, shipboard surfaces, crew-served weapons, and individual/personal weapons in hostile and non-hostile environments that have been exposed to traditional and non-traditional CB contamination.

The Joint Service Equipment Wipe (JSEW) is a decontamination wipe that will provide immediate/operational decontamination capabilities for sensitive and non-sensitive equipment in hostile and non-hostile environments that have been exposed to chemical agents/contamination and shall decontaminate Nerve and Blister agents from a starting liquid challenge of 10 g/m2 to less than or equal to 1 g/m2 and non-traditional agents from a starting liquid challenge of 5 g/m2 to less than or equal to 1 g/m2. In addition, the JSEW is intended to be a replacement for the Individual Equipment Decontamination Kit (M295). Follow on increments of JSEW may include biological agent capability and/or use on skin.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	Project (Number/Name) DE4 / DECONTAMINATION SYSTEMS (ACD&P)		
The JBAD System program is a new start in FY15. The JBAD System will provide thorough biological decontamination of the interior and exterior of tactical and cargo aircraft. The JBAD System 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.					
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Title: 1) DFoS FY 2014 Accomplishments: Completed NTA Solid Oxidizer Reformulation effort. Initiated and completed an aircraft contamination mitigation demonstration for thorough decontamination of biological agents.			2.015	-	-
Title: 2) DFoS - CIDAS FY 2014 Accomplishments: Designed and built large scale applicator prototypes to meet specific User requirements. Completed Technology Demonstrations to include indication efficacy and pot life testing, material compatibility testing, environmental efficacy testing, human factors assessment, accelerated aging testing, and a logistics analysis. Initiated Milestone B and contract documentation.			3.870	-	-
Title: 3) DFoS - CIDAS FY 2015 Plans: Complete Milestone B and contract documentation.			-	0.298	-
Title: 4) DFoS - GPD FY 2014 Accomplishments: Completed Competitive Prototyping Phase II and initiated the final phase of Developmental Testing (DT) to include the System Requirements Review (SRR), chemical and biological efficacy testing at relevant environments/conditions, shelf-life, and decontaminant compatibility and Early User Evaluation.			5.351	-	-
Title: 5) DFoS - GPD FY 2014 Accomplishments: Purchased 13,760 gallons of prototype GPDs (at approximately \$41 per gallon) for the final phase of DT.			0.564	-	-
Title: 6) DFoS - JSEW FY 2014 Accomplishments:			2.382	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program									Date: February 2015		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) DE4 / DECONTAMINATION SYSTEMS (ACD&P)			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016
Completed Competitive Prototyping Phase II and initiated the final phase of Developmental Testing (DT) to include the System Requirements Review (SRR), chemical efficacy testing at relevant environments/conditions, complex surfaces, coverage area, packaging /Military (MIL-STD) 810-G, shelf-life, compatibility and conduct a Critical Design (CDR).											
Title: 7) DFoS - JSEW									0.566	-	-
FY 2014 Accomplishments: Awarded base contract to purchase 15,000 JSEW test assets (at \$10.12 each) for DT and Contract Data Requirements List (CDRLs)/Data Item Descriptions (DIDs).											
Title: 8) JBAD									-	2.553	1.594
FY 2015 Plans: Initiate Request for Proposal (RFP) development, conduct Industry Day, prepare documentation for the Developmental RFP Decision and conduct limited developmental testing.											
FY 2016 Plans: Complete and release RFP and prepare documentation to support Milestone B Decision.											
Title: 9) SBIR/STTR									-	0.049	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.											
Accomplishments/Planned Programs Subtotals									14.748	2.900	1.594
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• DE5: DECONTAMINATION SYSTEMS (EMD)	7.519	11.146	16.744	-	16.744	15.854	18.871	7.609	6.676	Continuing	Continuing
• JD0050: DECONTAMINATION FAMILY OF SYSTEMS (DFoS)	-	3.450	7.254	-	7.254	10.037	12.621	20.817	15.874	Continuing	Continuing
• JD0063: CONTAMINATED HUMAN REMAINS POUCH (CHRP)	-	3.365	1.542	-	1.542	-	-	-	-	-	4.907
• JD0070: JOINT BIOLOGICAL AGENT DECONTAMINATION SYSTEM (JBAD)	-	-	-	-	-	-	-	-	16.234	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015	
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) DE4 / DECONTAMINATION SYSTEMS (ACD&P)			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Remarks											
D. Acquisition Strategy											
DECONTAMINATION FAMILY OF SYSTEMS (DFoS)											
The DFoS is utilizing an incremental acquisition strategy to transition various developmental technology efforts (Commercial-Off-The-Shelf (COTS), and DoD technology efforts) to meet high priority Warfighter capability gaps. DFoS will support Major Defense Acquisition Programs (MDAPs) and Programs of Record by guiding S&T efforts and transitioning mature technologies to meet program requirements.											
DFoS CONTAMINATION INDICATOR DECONTAMINATION ASSURANCE SYSTEM (DFoS CIDAS)											
The CIDAS program will follow an evolutionary acquisition strategy in consonance with the Joint Requirements Office (JRO)/User developed capability documents. Following MS A, collaborated with JSTO/DTRA 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 large scale applicator to meet specific User requirements. Following MS B, use full and open competition to award a performance based contract with options for LRIP and FRP for indicator and small and mid scale applicator systems. Integrate and test contractor and Government designs in DT and operational testing.											
DFoS GENERAL PURPOSE DECONTAMINANT (DFoS GPD)											
Due to the maturity levels of the systems entering the Technology Development (TD) phase, the Milestone Decision Authority (MDA) issued an Acquisition Decision Memorandum (ADM) which approved GPD to by-pass Milestone (MS) B and enter directly to MS C Low Rate Initial Production (LRIP). During the TD Phase (which includes CP I, CP II), the GPD Program employed a Competitive Prototyping (CP) effort to facilitate the evaluation of Commercial Off The Shelf (COTS) technologies releasing an Request for Proposal (RFP) as a combined synopsis/solicitation for commercial and Non-Developmental Items (NDI), utilizing full and open competition. As the GPD program enters the final phase of Technology Development (Developmental Test), the program will continue to follow an evolutionary acquisition strategy. The production contract in support of MS C is a single award for LRIP with four option years for FRP, using Full and Open Competition in accordance with FAR Subpart 6.1. This strategy ensures that all prospective sources, with the capability of meeting the program requirements, have the opportunity to participate.											
DFoS JOINT SENSITIVE EQUIPMENT WIPE (DFoS JSEW)											
Due to the maturity levels of the systems entering the Technology Development (TD) phase, the Milestone Decision Authority (MDA) issued an Acquisition Decision Memorandum (ADM) which approved JSEW to pursue a Milestone (MS) A to MS C Low Rate Initial Production (LRIP) acquisition strategy. During the TD Phase (which											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) DE4 / <i>DECONTAMINATION SYSTEMS (ACD&P)</i>
<p>includes CP I, CP II), the JSEW Program employed a Competitive Prototyping (CP) effort to facilitate the evaluation of Commercial Off The Shelf (COTS) technologies releasing an Request for Proposal (RFP) as a combined synopsis/solicitation for commercial and Non-Developmental Items (NDI), utilizing full and open competition. As the JSEW program enters the final phase of Technology Development (Developmental Test), the program will continue to follow an evolutionary acquisition strategy. The JSEW acquisition strategy to support upcoming JSEW contracting efforts for DT, LRIP, and FRP is a single contract award for DT, with options for LRIP and FRP, using Full and Open Competition in accordance with FAR Subpart 6.1. This strategy ensures that all prospective sources, with the capability of meeting the contract requirements, have the opportunity to participate.</p> <p>JOINT BIOLOGICAL AGENT DECONTAMINATION SYSTEM (JBAD)</p> <p>The JBAD System program will leverage the Joint Biological Agent Decontamination System Joint Capability Technology Demonstration to mature and deliver incremental capabilities to meet Air Mobility Command and US Transportation Command needs for interior and exterior decontamination of aircraft against biological agents. The JBAD will employ full and open competition and competitive prototyping during the Engineering Manufacturing and Development (EMD) phase.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)						Project (Number/Name) DE4 / DECONTAMINATION SYSTEMS (ACD&P)			
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** DFoS CIDAS - HW S - Prototype Development	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.635	Jan 2014	-		-		-		-	Continuing	Continuing	-
HW S - Prototype Development	C/FFP	AGENTASE LLC : Pittsburgh, PA	0.000	0.018	Mar 2014	-		-		-		-	Continuing	Continuing	-
** DFoS GPD - HW S - Developmental Test Prototypes	C/FFP	STERIS Corporation : Mentor, OH	0.000	0.564	Aug 2014	-		-		-		-	Continuing	Continuing	-
** DFoS JSEW - HW S - Development Testing Prototypes	C/FFP	STERIS Corporation : Mentor, OH	0.000	0.566	Sep 2014	-		-		-		-	Continuing	Continuing	-
Subtotal			0.000	1.783		-		-		-		-	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** DFoS - TD/D S - IPT and Technical Support	MIPR	Various :	3.767	0.163	Jan 2014	-		-		-		-	Continuing	Continuing	-
TD/D C - Technical Planning and Demo Preparation	C/FP	Aeroclave : LLC, Maitland, FL	0.000	0.850	Dec 2013	-		-		-		-	Continuing	Continuing	-
TD/D C - Technical Planning and Demo Preparation #2	C/CPFF	Materials Engineering and Technical Support Services Corp. (METTS) : Westerville, OH	0.000	0.150	Feb 2014	-		-		-		-	Continuing	Continuing	-
** DFoS CIDAS - TD/D SB - IPT and Technical Support	MIPR	Various :	0.000	1.520	Dec 2013	0.226	Nov 2014	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>						Project (Number/Name) DE4 / <i>DECONTAMINATION SYSTEMS (ACD&P)</i>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** DfOS GPD - ES S - IPT and Technical Support	MIPR	Various :	0.000	0.874	Dec 2013	-		-		-		-	Continuing	Continuing	-
** DfOS JSEW - ES S - IPT and Technical Support	MIPR	Various :	0.000	0.645	Jan 2014	-		-		-		-	Continuing	Continuing	-
** JBAD - TD/D S - IPT and Technical Support	MIPR	Various :	0.000	-		1.226	Jan 2015	1.271	Nov 2015	-		1.271	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.049		-		-		-	Continuing	Continuing	-
Subtotal			3.767	4.202		1.501		1.271		-		1.271	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** DfOS - DTE S - UNS NTA Solid Oxidizer Reformulation	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	4.034	0.655	Jan 2014	-		-		-		-	Continuing	Continuing	-
** DfOS CIDAS - DTE S - Technology Demonstration	MIPR	Various :	0.000	0.825	Dec 2013	0.011	Nov 2014	-		-		-	Continuing	Continuing	-
** DfOS GPD - DTE S - Competitive Prototyping and Developmental Testing	MIPR	Various :	0.000	3.552	Dec 2013	-		-		-		-	Continuing	Continuing	-
** DfOS JSEW - DTE S - Competitive Prototyping and Developmental Testing	MIPR	Various :	0.000	1.522	Jan 2014	-		-		-		-	Continuing	Continuing	-
** JBAD - DTE S - Limited Developmental Testing	MIPR	Various :	0.000	-		0.800	Mar 2015	-		-		-	Continuing	Continuing	-
Subtotal			4.034	6.554		0.811		-		-		-	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) DE4 / DECONTAMINATION SYSTEMS (ACD&P)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** DFoS - PM/MS C - Program Management and Technical Support	MIPR	Various :	7.309	0.197	Jun 2014	-		-		-		-	Continuing	Continuing	-
** DFoS CIDAS - PM/MS S - Program Management and Technical Support	MIPR	Various :	0.000	0.872	Jan 2014	0.061	Jan 2015	-		-		-	Continuing	Continuing	-
** DFoS GPD - PM/MS S - Program Management and Technical Support	MIPR	Various :	0.000	0.925	Jan 2014	-		-		-		-	Continuing	Continuing	-
** DFoS JSEW - PM/MS S - Program Management and Technical Support	MIPR	Various :	0.000	0.215	Feb 2014	-		-		-		-	Continuing	Continuing	-
** JBAD - PM/MS S - Program Management and Technical Support	MIPR	Various :	0.000	-		0.527	Dec 2014	0.323	Dec 2015	-		0.323	Continuing	Continuing	-
Subtotal			7.309	2.209		0.588		0.323		-		0.323	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			15.110	14.748		2.900		1.594		-		1.594	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) DE4 / <i>DECONTAMINATION SYSTEMS (ACD&P)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 - NTA Solid Oxidizer Reformulation																												
DFoS - Aircraft Contamination Demonstration																												
DFoS - CIDAS Technology Demonstrations																												
DFoS - CIDAS CDD																												
DFoS - CIDAS TEMP																												
DFoS - CIDAS MS B																												
DFoS - CIDAS PDR																												
DFoS - CIDAS CDR																												
DFoS - CIDAS DT																												
DFoS - CIDAS MS C/LRIP																												
DFoS - CIDAS LRIP Delivery																												
DFoS - CIDAS OT																												
DFoS - CIDAS FRP																												
DFoS - CPII Testing																												
DFoS - CDD																												
DFoS - System Requirements/Design Review																												
DFoS - TEMP																												
DFoS - Early User Evaluation (EUE)																												
DFoS - DT																												
DFoS - System Verification Review																												
DFoS - MRA Final Assessment																												
DFoS - CPD																												
DFoS - MS C/LRIP																												
DFoS - OT																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program																				Date: February 2015								
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)								
	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 - FRP																												
DFoS - IOC																												
DFoS - FOC																												
DFoS - CDD #2																												
DFoS - CPII Testing #2																												
DFoS - System Requirements/Design Review #2																												
DFoS - TEMP #2																												
DFoS - DT #2																												
DFoS - System Verification Review #2																												
DFoS - CPD #2																												
DFoS - MS C/LRIP #2																												
DFoS - OT #2																												
DFoS - FRP #2																												
DFoS - IOC #2																												
DFoS - FOC #2																												
** JBAD - IPR, Release RFP, Industry Day																												
JBAD - Limited DT																												
JBAD - Capability Development Document																												
JBAD - Request For Proposal Decision																												
JBAD - Release RFP																												
JBAD - MS B																												
JBAD - Contract Award																												
JBAD - DT																												
JBAD - Production Verification Testing																												
JBAD - CPD																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program																							Date: February 2015														
Appropriation/Budget Activity 0400 / 4										R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)										Project (Number/Name) DE4 / DECONTAMINATION SYSTEMS (ACD&P)																	
										FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
										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
JBAD - MS C/LRIP																																					
JBAD - First Article/Production Qualification Testing																																					

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

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

Events	Start		End	
	Quarter	Year	Quarter	Year
** DFoS - NTA Solid Oxidizer Reformulation	1	2014	4	2014
DFoS - Aircraft Contamination Demonstration	1	2014	4	2014
DFoS - CIDAS Technology Demonstrations	1	2014	3	2014
DFoS - CIDAS CDD	4	2014	4	2014
DFoS - CIDAS TEMP	1	2015	1	2015
DFoS - CIDAS MS B	2	2015	2	2015
DFoS - CIDAS PDR	2	2015	2	2015
DFoS - CIDAS CDR	3	2015	3	2015
DFoS - CIDAS DT	4	2015	1	2017
DFoS - CIDAS MS C/LRIP	3	2017	3	2017
DFoS - CIDAS LRIP Delivery	4	2017	3	2018
DFoS - CIDAS OT	3	2018	4	2018
DFoS - CIDAS FRP	2	2019	2	2019
DFoS - CPII Testing	1	2014	2	2014
DFoS - CDD	3	2014	3	2014
DFoS - System Requirements/Design Review	4	2014	1	2015
DFoS - TEMP	4	2014	1	2015
DFoS - Early User Evaluation (EUE)	4	2014	1	2015
DFoS - DT	4	2014	3	2015
DFoS - System Verification Review	3	2015	3	2015
DFoS - MRA Final Assessment	3	2015	3	2015
DFoS - CPD	4	2015	4	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) DE4 / <i>DECONTAMINATION SYSTEMS (ACD&P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
DFoS - MS C/LRIP	4	2015	4	2015
DFoS - OT	1	2016	2	2016
DFoS - FRP	4	2016	4	2016
DFoS - IOC	4	2017	4	2017
DFoS - FOC	2	2020	2	2020
DFoS - CDD #2	1	2014	1	2014
DFoS - CPII Testing #2	1	2014	2	2014
DFoS - System Requirements/Design Review #2	4	2014	1	2015
DFoS - TEMP #2	4	2014	1	2015
DFoS - DT #2	4	2014	2	2015
DFoS - System Verification Review #2	3	2015	3	2015
DFoS - CPD #2	4	2015	4	2015
DFoS - MS C/LRIP #2	4	2015	4	2015
DFoS - OT #2	4	2015	2	2016
DFoS - FRP #2	4	2016	4	2016
DFoS - IOC #2	3	2017	3	2017
DFoS - FOC #2	3	2019	3	2019
** JBAD - IPR, Release RFP, Industry Day	2	2015	3	2015
JBAD - Limited DT	2	2015	3	2015
JBAD - Capability Development Document	4	2015	4	2015
JBAD - Request For Proposal Decision	1	2016	1	2016
JBAD - Release RFP	2	2016	2	2016
JBAD - MS B	3	2016	3	2016
JBAD - Contract Award	3	2016	3	2016
JBAD - DT	4	2016	3	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program	Date: February 2015
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) DE4 / <i>DECONTAMINATION SYSTEMS (ACD&P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
JBAD - Production Verification Testing	2	2018	2	2019
JBAD - CPD	4	2019	4	2019
JBAD - MS C/LRIP	2	2020	2	2020
JBAD - First Article/Production Qualification Testing	4	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) IP4 / INDIVIDUAL PROTECTION (ACD&P)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
IP4: INDIVIDUAL PROTECTION (ACD&P)	-	0.588	6.811	4.217	-	4.217	0.400	-	-	-	-	12.016
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 FY14-16 timeframe. The JSGPM ARPI effort will investigate alternative designs and modifications to Zirconium hydroxide, Zinc, Argentum (Silver), Triethylene di-amine (TEDA)) (ZZAT) to further increase filtration of TICs and Chemical Warfare Agents (CWA). ZZAT is a zirconium hydroxide based filtration media that can potentially be layered with carbon. The first technology, known as Cobalt-Zinc ZZAT (CoZZAT), uses a layered bed of carbon concept to improve TIC and CWA protection capabilities, while the second technology known as Metal Organic Framework (MOF), is an engineered media that is a porous crystalline compound made up of metal ions and organic bridging molecules (ligands) for targeted removal of chemicals. The JSGPM APRI effort will also investigate various applications of nanofiber particulate media.

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

The UIPE Increment 2 (UIPE 2) will build upon and enhance the capabilities attained in UIPE 1. UIPE 2 will provide reduced thermal burden and weight compared to current protective ensembles. UIPE 2 will develop, integrate, test, procure, and field incremental capability solutions that are modular in function and offer improvements

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)	Project (Number/Name) IP4 / INDIVIDUAL PROTECTION (ACD&P)		
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 2 program risks, reduce costs, and ensure a high confidence in selected technologies.					
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Title: 1) JSGPM (ARPI) FY 2014 Accomplishments: Investigated alternative designs and modifications to ZZAT (Zirconium hydroxide, Zinc, Argentum (Silver), Triethylene di-amine (TEDA)) 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. Initiated technology bed design analysis on Cobalt-Zinc ZZAT (CoZZAT), investigated various applications of nanofiber particulate media, and provided program management support. FY 2015 Plans: Begin Bed Design Analysis for second technology to be transitioned from Tech Base.			0.588	3.831	-
Title: 2) UIPE 2 FY 2015 Plans: Initiate program planning, prepare Milestone (MS) A documentation, and achieve MS A. Release Request for Information (RFI) to obtain technologies/materials. Conduct baseline assessments to determine trade space around key capabilities. FY 2016 Plans: 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. Develop Capabilities Development Document (CDD), conduct Manufacturing Readiness Assessment (MRA) and Joint Integrated Logistics Assessment (JILA).			-	2.852	4.217
Title: 3) SBIR/STTR FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.			-	0.128	-
Accomplishments/Planned Programs Subtotals			0.588	6.811	4.217

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) IP4 / <i>INDIVIDUAL PROTECTION (ACD&P)</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>	24.989	15.435	19.439	-	19.439	14.262	11.524	11.610	1.799	Continuing	Continuing
• JI0002: <i>JS AIRCREW MASK (JSAM)</i>	0.413	11.526	24.630	-	24.630	54.447	61.961	55.136	50.374	Continuing	Continuing
• JI0003: <i>JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)</i>	85.343	61.131	60.777	-	60.777	55.118	48.982	-	-	-	311.351
• MA0401: <i>CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)</i>	15.772	6.948	11.101	-	11.101	11.101	11.101	14.000	16.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

JS GENERAL PURPOSE MASK (JSGPM)

The JSGPM Advanced Respiratory Protection Initiative (ARPI) effort is using the M61 filter contracts awarded to 3M and Avon to develop improved filters for the JSGPM. There is a continual technology refreshment CLIN that allows for filter development tasks to be awarded under this contract. The tasks can be competed between the two awardees or award 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. There are multiple technologies being explored by DTRA, thus, this is a continual product improvement effort to enhance filtration. The JSGPM ARPI effort will investigate alternative designs and modifications to ZZAT (Zirconium hydroxide, Zinc, Argentum (Silver), Triethylene di-amine (TEDA)) 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.

CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)

The UIPE 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 2 will leverage the approved UIPE CBRN initial capabilities document (ICD) to build on and enhance capabilities attained in UIPE 1 by continuing to provide integrated individual protective equipment that enables the Warfighter to operate

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
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<p>in a contaminated environment with no or minimal degradation to performance. UIPE 2 will perform trade space analysis by releasing a Request for Information for materials and closures. This analysis will not only provide a baseline assessment but will feed the requirements development process. The final UIPE 2 garment design will be government owned in order to control interfaces and insert future technologies.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) IP4 / INDIVIDUAL PROTECTION (ACD&P)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSGPM - HW C - Filter Prototyping	Various	Various :	0.000	-		1.515	Feb 2015	-		-		-	-	1.515	-
** UIPE - HW S - Prototype Development	MIPR	TBD :	0.000	-		0.400	May 2015	-		-		-	-	0.400	-
HW S - Contract Award	C/CPFF	TBD :	0.000	-		-		1.000	Apr 2016	-		1.000	-	1.000	-
Subtotal			0.000	-		1.915		1.000		-		1.000	-	2.915	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSGPM - ES C - Engineering Design Services	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.206	-		0.600	Jan 2015	-		-		-	0.200	1.006	-
ES C - Engineering Support	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.016	-		0.200	Jan 2015	-		-		-	0.200	0.416	-
** UIPE - TD/D C - Integrated Product Team (IPT), Program, Engineering, and Technical Support	MIPR	Various :	0.000	-		0.980	May 2015	1.063	Jan 2016	-		1.063	-	2.043	-
TD/D S - Engineering/ Tradespace Analysis	MIPR	Various :	0.000	-		0.937	May 2015	-		-		-	-	0.937	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR- SBIR/STTR	PO	TBD :	0.000	-		0.128		-		-		-	-	0.128	-
Subtotal			0.222	-		2.845		1.063		-		1.063	0.400	4.530	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
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Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSGPM - DTE C - Prototype Testing	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.214	-		0.800	Feb 2015	-		-		-	-	1.014	-
** UIPE - DTE S - System Level Testing - FAST, MIST, Thermal Manikin and Modeling	Various	TBD :	0.000	-		-		1.300	May 2016	-		1.300	-	1.300	-
Subtotal			0.214	-		0.800		1.300		-		1.300	-	2.314	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSGPM - PM/MS C - Program Management and Technical Support	Various	Various :	0.114	0.588	Mar 2014	0.716	Jan 2015	-		-		-	-	1.418	-
** UIPE - PM/MS S - Program Management Support	MIPR	Various :	0.000	-		0.535	May 2015	0.854	Jan 2016	-		0.854	-	1.389	-
Subtotal			0.114	0.588		1.251		0.854		-		0.854	-	2.807	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.550	0.588		6.811		4.217		-		4.217	0.400	12.566	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) IP4 / <i>INDIVIDUAL PROTECTION (ACD&P)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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)																												
** UIPE INC. 2 - Milestone A																												
UIPE INC. 2 - Material Development/ Tradespace Analysis																												
UIPE INC. 2 - Capability Development Document (CDD)																												
UIPE INC. 2 - Manufacturing Readiness Review (MRA)																												
UIPE INC. 2 - Joint Integrated Logistics Assessment (JILA)																												
UIPE INC. 2 - Milestone B																												
UIPE INC. 2 - Critical Design Review (CDR)																												
UIPE INC. 2 - DT/OT																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) IP4 / <i>INDIVIDUAL PROTECTION (ACD&P)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JSGPM - Bed Design Analysis (CoZZAT)	1	2014	2	2015
JSGPM - TD Contract Award (CoZZAT)	2	2015	2	2015
JSGPM - Prototype Development (CoZZAT)	2	2015	2	2016
JSGPM - Product Qualification Testing (CoZZAT)	2	2016	1	2017
JSGPM - ECP Production (CoZZAT)	2	2017	2	2017
JSGPM - Bed Design Analysis (MOF)	2	2016	4	2016
JSGPM - Prototype Development (MOF)	3	2016	1	2018
JSGPM - Prototype Testing (MOF)	2	2018	1	2019
** UIPE INC. 2 - Milestone A	3	2015	3	2015
UIPE INC. 2 - Material Development/Tradespace Analysis	3	2015	1	2016
UIPE INC. 2 - Capability Development Document (CDD)	3	2016	3	2016
UIPE INC. 2 - Manufacturing Readiness Review (MRA)	4	2016	4	2016
UIPE INC. 2 - Joint Integrated Logistics Assessment (JILA)	4	2016	4	2016
UIPE INC. 2 - Milestone B	1	2017	1	2017
UIPE INC. 2 - Critical Design Review (CDR)	3	2017	3	2017
UIPE INC. 2 - DT/OT	4	2017	2	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
IS4: INFORMATION SYSTEMS (ACD&P)	-	9.085	6.169	7.464	-	7.464	8.355	7.871	1.240	0.870	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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The Biosurveillance Portal (BSP) is a new start in FY16. BSP is a web-based enterprise environment that will facilitate collaboration, communication, and information sharing in support of the detection, management, and mitigation of man-made and naturally occurring biological events. BSP bridges the communication gaps in the biosurveillance domain to provide a central access point for biosurveillance information and situational awareness for DoD, interagency and allied partners supporting the early identification and response to biological events.

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

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

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

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Title: 1) JEM Prototyping and Development FY 2014 Accomplishments: Completed competitive prototyping down-select and award option for development and integration of JEM IT BOX capabilities. Prepared first Milestone Decision Authority build decision by integrating mature Science and Technology capabilities identified during the execution of the prototype contract with prototype software from competitive down-select. FY 2015 Plans: Provide JEM Increment 2 software development of additional capabilities defined in Requirements Definition Package 1 and perform integration into Command and Control (C2) systems as defined in Requirements Definition Package 3. FY 2016 Plans:	1.067	1.195	1.247

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continue JEM Increment 2 software development of capabilities defined in Requirements Definition Package 1 and perform integration into Command and Control (C2) systems as defined in Requirements Definition Package 3. Begin software development of capabilities defined in Requirements Definition Package 4 that support Science and Technology community use of JEM Increment 2 software.				
Title: 2) JEM Test & Evaluation (T&E) FY 2014 Accomplishments: Completed governmental development testing in support of competitive prototyping contract and down-select. Prepared T&E documentation for the Preliminary Design Review (PDR) and down-select decision. Prepared and submitted for approval IT BOX Test and Evaluation Master Plan to support IT BOX build decision in current year and Government Developmental Test in FY15. FY 2015 Plans: Conduct lab based Operational Test (OT) and limited scope service-specific Initial Operational Test & Evaluation (IOT&E) which will allow for Initial Operational Capability (IOC) of JEM Increment 2 as a standalone to be deployed to the services in 1QTR FY16. FY 2016 Plans: Continue lab based OT and limited scope service specific IOT&E to support fielding of software with additional capability in 1QTR FY17. Conduct Service C2 Follow-on Test and Evaluation (FOT&E) which will allow for IOC of JEM Increment 2 on service C2 systems in 1QTR FY17.		0.646	1.551	1.207
Title: 3) JEM Management Support FY 2014 Accomplishments: Provided program planning, financial management, contracting, schedule, and acquisition oversight support. Coordinate Critical Design Review (CDR) of capabilities to include in first software capability drop scheduled for 1QTR FY15. Coordinate Critical Design Review (CDR) of second software capability drop scheduled for 3QTR FY15. Coordinate first JEM IT BOX Milestone Decision Authority build decision with stakeholders. FY 2015 Plans: Perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Continue 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. Complete development of Requirements Definition Package 3 (RDP-3), which defines requirements for C2 systems integration of the JEM software. Complete Build Decision 2 (BD2) for JEM Increment 2. FY 2016 Plans:		0.307	0.257	0.323

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
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 Joint Integrated Logistics Assessment (JILA) and Logistics' Demonstration (LOG DEMO) in order to deploy JEM Increment 2 to the services. Complete development of Requirements Definition Package 3 (RDP-3), which defines requirements for C2 systems integration of the JEM software. Complete fielding decision and IOC of C2 systems capabilities of JEM Increment 2 in 4QTR FY16.				
Title: 4) JEM Technical Support FY 2014 Accomplishments: Prepared and reviewed technical documentation to support competitive prototyping contract down-select decision and the Milestone Decision Authority build decision. Provided technical support during the competitive prototyping phase and technical assessment. Initiated Verification and Validation Plan for the capability drops of JEM scheduled to begin 1QTR FY15. FY 2015 Plans: Develop Verification, Validation, and Accreditation (VV&A) package for JEM Inc. 2. FY 2016 Plans: Continue Verification, Validation, and Accreditation (VV&A) package development for JEM Inc. 2.		0.472	0.368	0.553
Title: 5) JWARN Analysis of Alternatives (AoA) FY 2014 Accomplishments: Completed analysis on impacts of implementing the emerging technologies into the JWARN architecture.		0.218	-	-
Title: 6) JWARN Prototyping FY 2014 Accomplishments: Conducted software prototyping efforts supporting JWARN baseline development FY 2015 Plans: Perform software prototyping efforts supporting JWARN baseline development. FY 2016 Plans: Continue software prototyping efforts supporting JWARN baseline development.		2.051	1.149	0.911
Title: 7) JWARN Product Development FY 2014 Accomplishments:		0.598	0.334	0.334

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Conducted JWARN Technology Demonstrations and User Assessments to evaluate and prove component and subsystem maturity of critical science and technology, system performance, and validate requirements within the IT BOX construct and Agile Process developed software prototype(s). FY 2015 Plans: Perform JWARN Technology Demonstrations and User Assessments to evaluate and prove component and subsystem maturity of critical science and technology, system performance, and validate requirements within the IT BOX construct and Agile Process developed software prototype(s). FY 2016 Plans: Continue JWARN Technology Demonstrations and User Assessments to evaluate and prove component and subsystem maturity of critical science and technology, system performance, and validate requirements within the IT BOX construct and Agile Process developed software prototype(s).				
Title: 8) JWARN Test and Evaluation (T&E) FY 2014 Accomplishments: Initiated government developmental testing and analysis of component and subsystem maturity, to include Technology Readiness Assessment(s), of software submitted for evaluation during prototyping. Prepare required documentation to support the DoD Information Assurance Certification and Accreditation Process and Joint Interoperability Certification process. Continue development of the Test and Evaluation Master Plan (TEMP). FY 2015 Plans: Provide 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. Complete development of the Test and Evaluation Master Plan (TEMP). FY 2016 Plans: Continue government developmental testing and analysis of component and subsystem maturity, to include Technology Readiness Assessment(s), of software submitted for evaluation during prototyping. Continue the DoD Information Assurance Certification and Accreditation and Joint Interoperability Certification process.		0.423	0.337	0.443
Title: 9) JWARN Software Contract FY 2014 Accomplishments: Awarded contract to conduct follow-on software efforts.		0.843	-	-
Title: 10) JWARN Program Management Support		0.862	0.443	0.494

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
FY 2014 Accomplishments: Continued strategic, tactical planning, program/financial management, costing, contracting, scheduling, acquisition oversight, and milestone documentation for the program within IT BOX construct and Agile Software development process.				
FY 2015 Plans: 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.				
FY 2016 Plans: 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.				
Title: 11) JWARN Technical Support FY 2014 Accomplishments: Conducted engineering and technical support for JWARN development under the IT BOX construct and Agile Software development processes. Initiate independent system verification, validation and class type accreditation efforts as required.		1.506	0.344	0.778
FY 2015 Plans: Provide engineering and technical support for JWARN development under the IT BOX construct and Agile Software development processes. Continue independent system verification, validation, and class type accreditation as required.				
FY 2016 Plans: 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.				
Title: 12) BSP Program Management FY 2016 Plans: Management and oversight of technology development and transition efforts for new technologies and capabilities designed to satisfy BSP requirements.		-	-	0.373
Title: 13) BSP Product Development FY 2016 Plans: Prototyping, developing, and evaluating new technologies, models, and tools from both internal and external developers for transition into BSP.		-	-	0.707
Title: 14) SSA Integrated Architecture FY 2014 Accomplishments:		0.092	0.099	0.100

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B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Initiated required modifications to the integrated Architecture on host platforms and document the infrastructure and technical standards. Examined program and system characteristics to determine compliance with DoD Directive 8500.01E (Information Assurance) and develop an acquisition IA strategy if required. FY 2015 Plans: Continue required modifications to the integrated Architecture on host platforms and document the infrastructure and technical standards, developing an acquisition IA strategy if deemed necessary in FY14. FY 2016 Plans: Continue required modifications to the integrated Architecture on host platforms and document the infrastructure and technical standards, developing an acquisition IA strategy if deemed necessary in FY14.												
Title: 15) SBIR/STTR FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.										-	0.092	-
Accomplishments/Planned Programs Subtotals										9.085	6.169	7.464
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• IS5: INFORMATION SYSTEMS (EMD)	9.155	10.340	19.960	-	19.960	23.747	22.976	24.353	25.736	Continuing	Continuing	
• IS7: INFORMATION SYSTEMS (OP SYS DEV)	6.442	4.091	7.703	-	7.703	9.557	12.407	13.519	12.767	Continuing	Continuing	
• G47101: JOINT WARNING & REPORTING NETWORK (JWARN)	1.112	0.766	-	-	-	4.589	1.522	0.533	0.479	Continuing	Continuing	
• JC0208: JOINT EFFECTS MODEL (JEM)	-	1.141	3.316	-	3.316	5.069	3.086	3.031	2.728	Continuing	Continuing	
• JS5230: SOFTWARE SUPPORT ACTIVITY (SSA)	0.100	-	0.100	-	0.100	0.100	0.100	0.100	0.090	Continuing	Continuing	
• JX0301: BIOSURVEILLANCE PORTAL (BSP)	-	-	1.620	-	1.620	1.220	1.220	1.220	1.220	Continuing	Continuing	
Remarks												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) IS4 / <i>INFORMATION SYSTEMS (ACD&P)</i>
<p>D. Acquisition Strategy JOINT EFFECTS MODEL (JEM)</p> <p>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.</p> <p>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.</p> <p>The current contractor for JEM 2.0 will provide all capabilities defined in the Requirement Definition Package 1 (RDP-1) document produced by the Joint Requirements Office (JRO). 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 FY18 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 FY18 will be responsible 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.</p> <p>The JEM IS ICD describes the notional implementation plan for fielding of future JEM capabilities among four separate JEM Requirement Definition Packages (RDPs). RDP-1 contains the baseline capabilities for software and was released in June of 2014. RDP-2 will be released after the completion of RDP-1. This RDP will incorporate emerging capabilities that the Joint Science and Technology Office determines has reached a sufficient enough maturity for incorporation into JEM, such as ability to model new agents. Requirements to integrate baseline capabilities into a version that can be fielded on service C2 systems will be released in RDP-3. RDP-3 will be released following RDP-1 but prior to RDP-2, to rapidly allow baseline capabilities to be incorporated into C2 systems. RDP-4 is a notional package that would allow the Science and Technology community a venue to use the JEM program to develop a version of the product for S&T use. Capabilities that are only required for the Science and Technology community and not for operational users would be implemented in RDP-4. Capabilities in RDP-4 would not be required to go to Operational Test, as they would not be fielded to operational users.</p> <p>RDP 1 - Baseline Capabilities: There are 5 planned Capability Drops (CD) within RDP 1. RDP 2 - Emerging Capabilities: There are 5 planned Capability Drops (CD) within RDP 2. RDP 3 - C2 Integration: There are 8 planned Capability Drops (CD) within RDP 3 tied to all the various Strategic and Service C2 Systems RDP 4 - Analytical Support: There are 2 planned Capability Drops (CD) within RDP 4.</p> <p>After an over-arching MS B with the MDA, each RDP will have an associated Build Decision. Each CD will have an associated fielding decision.</p> <p>JOINT WARNING & REPORTING NETWORK (JWARN)</p>		

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<p>JWARN Increment 2 utilizes the JROC's "IT Box" construct for software requirements management and development. The intent is to provide the next generation of capability with current and future technologies, as stated in the IS ICD, in less time and away from an incremental delivery approach. This effort is being executed under a Cost-Plus-Award Term Incentive structure to gain maximum benefit to the Government in maintaining the fielded baseline and future software capability development and was awarded under a full and open competition Request for Proposal (RFP). The JWARN Program will procure a Sensor Connectivity Capability (SCC) (hardware materiel solution) in order to facilitate the transfer of CBRN sensor information from legacy CBRN sensors to DoD networks. This solution will be external to the CBRN Sensors and Service-identified network transmission device(s).</p> <p>BIOSURVEILLANCE PORTAL (BSP)</p> <p>BSP 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.</p> <p>SOFTWARE SUPPORT ACTIVITY (SSA)</p> <p>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). Phase 1a identifies CBDP programs that deal with data or software, and have an IT component. 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. Phase 2 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.</p> <p><u>E. Performance Metrics</u></p> <p>N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) IS4 / INFORMATION SYSTEMS (ACD&P)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JEM - Inc 2 - SW SB - Prototype development (a)	C/CPFF	General Dynamics Information Technologies : Fairfax, VA	3.144	0.564	Oct 2013	1.249	Apr 2015	1.247	Apr 2016	-		1.247	Continuing	Continuing	-
Inc 2 - SW SB - Prototype development (b)	C/CPFF	Information Emergency Management (IEM) : Durham, NC	3.144	0.503	Oct 2013	-		-		-		-	Continuing	Continuing	-
** JWARN - Inc 2 - SW S - Prototype development	C/CPFF	Northrop Grumman Corp. : Winter Park, FL	1.561	3.098	Dec 2013	1.316	Dec 2014	1.317	Dec 2015	-		1.317	Continuing	Continuing	-
** BSP - SW S - Software Development	Various	TBD :	0.000	-		-		0.707	Dec 2015	-		0.707	Continuing	Continuing	-
Subtotal			7.849	4.165		2.565		3.271		-		3.271	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JEM - Inc 2 - TD/D SB - Engineering support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	1.672	0.472	Nov 2013	0.368	Nov 2014	0.553	Nov 2015	-		0.553	Continuing	Continuing	-
** JWARN - Inc 2 - TD/D SB - Engineering support	MIPR	Various :	4.187	2.104	Nov 2013	0.511	Nov 2014	1.011	Nov 2015	-		1.011	Continuing	Continuing	-
** SSA - ES S - Engineering Support	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	0.000	0.092	Nov 2013	0.099	Nov 2014	0.100	Nov 2015	-		0.100	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR- SBIR/STTR	PO	TBD :	0.000	-		0.092		-		-		-	Continuing	Continuing	-
Subtotal			5.859	2.668		1.070		1.664		-		1.664	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) IS4 / INFORMATION SYSTEMS (ACD&P)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JEM - Inc 2 - OTE S - OT&E	MIPR	Navy Operational Test and Eval Force (OPTEVFOR) : Norfolk, VA	0.000	-		1.497	Nov 2014	1.201	Nov 2015	-		1.201	Continuing	Continuing	-
DTE S - Hazard Prediction Model Development Test	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.000	0.646	Nov 2013	-		-		-		-	Continuing	Continuing	-
** JWARN - Incr. 2 - OTH SB - Gov't developmental testing	MIPR	Various :	1.780	0.225	Mar 2014	0.337	Mar 2015	-		-		-	Continuing	Continuing	-
Subtotal			1.780	0.871		1.834		1.201		-		1.201	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JEM - Inc 2 - PM/MS C - Program Management	C/CPFF	Battelle Memorial Institute : Columbus, OH	1.341	0.307	Apr 2014	0.257	Apr 2015	0.323	Apr 2016	-		0.323	Continuing	Continuing	-
** JWARN - Inc 2 - PM/MS SB - Program management	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.492	1.074	Nov 2013	0.443	Nov 2014	0.632	Nov 2015	-		0.632	Continuing	Continuing	-
** BSP - PM/MS S - Program Management Support	Various	Various :	0.000	-		-		0.373	Dec 2015	-		0.373	Continuing	Continuing	-
Subtotal			3.833	1.381		0.700		1.328		-		1.328	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			19.321	9.085		6.169		7.464		-		7.464	-	-	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program							Date: February 2015			
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>			Project (Number/Name) IS4 / <i>INFORMATION SYSTEMS (ACD&P)</i>				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program										Date: February 2015	
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)					Project (Number/Name) IS4 / INFORMATION SYSTEMS (ACD&P)	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** JEM INC. 2 - Prototype Development and Test (Contractor)																												
JEM INC. 2 - Baseline Capability Technology Development																												
JEM INC. 2 - Prototype and Baseline Capability Developmental Testing																												
JEM INC. 2 - RDP 1																												
JEM INC. 2 - MS B																												
JEM INC. 2 - BD 1																												
JEM INC. 2 - RDP 2																												
JEM INC. 2 - BD 2																												
JEM INC. 2 - FD 1																												
JEM INC. 2 - RDP 3																												
JEM INC. 2 - IOC Standalone																												
JEM INC. 2 - BD 3																												
JEM INC. 2 - FD 2																												
JEM INC. 2 - RDP 4																												
JEM INC. 2 - FD 3																												
JEM INC. 2 - FD 4																												
JEM INC. 2 - C2 Integration Development Test																												
JEM INC. 2 - Gov't DT / IT / V&V																												
** JWARN INC. 2 - Information System Initial Capability Document																												
JWARN INC. 2 - Baseline Preliminary Design Review (Software)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program																Date: February 2015												
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)										
0400 / 4										PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)								IS4 / INFORMATION SYSTEMS (ACD&P)										
	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
JWARN INC. 2 - Baseline Critical Design Review (Software)																												
JWARN INC. 2 - RDP 1																												
JWARN INC. 2 - RDP 2																												
JWARN INC. 2 - TEMP (Software)																												
JWARN INC. 2 - MS B																												
JWARN INC. 2 - BD 1																												
JWARN INC. 2 - BD 2																												
JWARN INC. 2 - Initial Multi-Service Operational Testing (MOT&E)																												
JWARN INC. 2 - Initial Full-Rate Production/ Full Deployment Decision																												
JWARN INC. 2 - RDP 3																												
JWARN INC. 2 - Initial Operational Capability (JWARN Standalone Web)																												
JWARN INC. 2 - FD 1																												
JWARN INC. 2 - IOC for RDP 1																												
JWARN INC. 2 - BD 3																												
JWARN INC. 2 - FD 2																												
JWARN INC. 2 - IOC for RDP 2																												
JWARN INC. 2 - FD 3																												
JWARN INC. 2 - IOC for RDP 3																												
JWARN INC. 2 - Full Operational Capability (C2 Host System Dependent)																												
JWARN INC. 2 - Gov't DT / IT / UFEs / OAs / FOTs																												
** BSP - MS B																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) IS4 / <i>INFORMATION SYSTEMS (ACD&P)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 - TEMP																												
BSP - Capability Drop 1																												
BSP - Capability Drop 2																												
BSP - Capability Drop 3																												
BSP - Capability Drop 4																												
BSP - Operational Test and Evaluation - Capability Drops																												
BSP - IOC																												
** SSA - Provide Data Model Implementation Guidance																												
SSA - Demonstrate Technology Transition Capabilities																												
SSA - Provide CM Services for Common User Products and Services																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JEM INC. 2 - Prototype Development and Test (Contractor)	2	2014	3	2014
JEM INC. 2 - Baseline Capability Technology Development	2	2014	4	2014
JEM INC. 2 - Prototype and Baseline Capability Developmental Testing	2	2014	3	2017
JEM INC. 2 - RDP 1	2	2014	2	2014
JEM INC. 2 - MS B	4	2014	4	2014
JEM INC. 2 - BD 1	1	2015	1	2015
JEM INC. 2 - RDP 2	1	2015	1	2015
JEM INC. 2 - BD 2	2	2015	2	2015
JEM INC. 2 - FD 1	4	2015	4	2015
JEM INC. 2 - RDP 3	4	2015	4	2015
JEM INC. 2 - IOC Standalone	1	2016	1	2016
JEM INC. 2 - BD 3	2	2016	2	2016
JEM INC. 2 - FD 2	4	2016	4	2016
JEM INC. 2 - RDP 4	1	2017	1	2017
JEM INC. 2 - FD 3	4	2017	4	2017
JEM INC. 2 - FD 4	4	2018	4	2018
JEM INC. 2 - C2 Integration Development Test	1	2016	2	2020
JEM INC. 2 - Gov't DT / IT / V&V	3	2014	4	2020
** JWARN INC. 2 - Information System Initial Capability Document	3	2014	3	2014
JWARN INC. 2 - Baseline Preliminary Design Review (Software)	3	2014	3	2014
JWARN INC. 2 - Baseline Critical Design Review (Software)	3	2014	1	2015
JWARN INC. 2 - RDP 1	2	2015	2	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

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Events	Start		End	
	Quarter	Year	Quarter	Year
JWARN INC. 2 - RDP 2	2	2015	2	2015
JWARN INC. 2 - TEMP (Software)	3	2015	3	2015
JWARN INC. 2 - MS B	3	2015	3	2015
JWARN INC. 2 - BD 1	3	2015	3	2015
JWARN INC. 2 - BD 2	1	2016	1	2016
JWARN INC. 2 - Initial Multi-Service Operational Testing (MOT&E)	4	2015	2	2016
JWARN INC. 2 - Initial Full-Rate Production/Full Deployment Decision	2	2016	4	2016
JWARN INC. 2 - RDP 3	3	2016	3	2016
JWARN INC. 2 - Initial Operational Capability (JWARN Standalone Web)	4	2016	2	2017
JWARN INC. 2 - FD 1	4	2016	4	2016
JWARN INC. 2 - IOC for RDP 1	1	2017	1	2017
JWARN INC. 2 - BD 3	2	2017	2	2017
JWARN INC. 2 - FD 2	4	2017	4	2017
JWARN INC. 2 - IOC for RDP 2	4	2017	4	2017
JWARN INC. 2 - FD 3	4	2018	4	2018
JWARN INC. 2 - IOC for RDP 3	2	2019	2	2019
JWARN INC. 2 - Full Operational Capability (C2 Host System Dependent)	3	2018	3	2020
JWARN INC. 2 - Gov't DT / IT / UFEs / OAs / FOTs	3	2015	4	2020
** BSP - MS B	2	2015	3	2015
BSP - TEMP	3	2015	1	2016
BSP - Capability Drop 1	2	2016	2	2016
BSP - Capability Drop 2	4	2016	4	2016
BSP - Capability Drop 3	2	2017	2	2017
BSP - Capability Drop 4	4	2017	4	2017
BSP - Operational Test and Evaluation - Capability Drops	2	2016	4	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

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Events	Start		End	
	Quarter	Year	Quarter	Year
BSP - IOC	2	2018	3	2018
** SSA - Provide Data Model Implementation Guidance	1	2014	4	2018
SSA - Demonstrate Technology Transition Capabilities	1	2014	4	2018
SSA - Provide CM Services for Common User Products and Services	1	2014	4	2020

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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MB4: MEDICAL BIOLOGICAL DEFENSE (ACD&P)	-	132.696	106.380	81.916	-	81.916	49.207	28.642	16.949	7.710	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

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 agent test (WSLAT) of AED units will support JPM NBC CA Mission for Point Biological Detection. The Biosurveillance (BSV) program will transfer from the Medical Countermeasures (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.

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<p>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. EID Tx is pursuing influenza indication as the first step in the development of a broad spectrum antiviral drug 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. This drug 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 SDD phase. Ongoing EID Tx drug development will be leveraged 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.</p> <p>The Hemorrhagic Fever Virus (HFV) MCS Acquisition Program develops medical countermeasures (MCMs), using high threat, extremely lethal Biological Warfare Agents (BWAs) of the Filoviridae family agents (Ebola) as a model system. Medical countermeasures will be advanced through the Food and Drug Administration (FDA) licensure/approval via the FDA 'Animal Rule', which allows for the demonstration of efficacy in relevant animal model(s) when human testing is not ethically feasible. HFV will also conduct animal model development and refinement as needed to support the pivotal animal efficacy testing required under the FDA 'Animal Rule'. Completion of Phase I trials, animal model development, and manufacturing scale up are the focus of the ACD&P phase. FDA approval for Filovirus therapeutics are expected following completion of the SDD phase.</p> <p>The NGDS is an evolutionary acquisition family of systems to provide increments of capability over time across many echelons of the Combat Health Support System. The mission of the NGDS is to provide Chemical, Biological and Radiological (CBR) threat and infectious disease identification and 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 (NGDS Inc 1) will significantly improve diagnostic capability for deployable combat health support units (Role 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 Inc 1 program has a streamlined MS A to MS C - Limited Deployment acquisition strategy. BA4 funds support 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 biological pathogens and toxins, and addressing diagnostics for 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.</p> <p>The Department of Defense (DoD) funds the technology development phase for vaccines that are directed against validated biological warfare (BW) weapons to include bacteria, viruses, and toxins of biological origin. Effective medical countermeasures to negate the threat of these biological warfare (BW) agents are urgently needed. Vaccines have been identified as the most efficient countermeasure against the validated threat of BW weapons. The multiple Trivalent Filovirus Vaccine (VAC FILO)</p>		

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<p>Program will offer protection against the threat of Ebola and Marburg viruses. The current budget supports development and acceleration of two multiple candidates, in response to the Ebola outbreak, to provide an interim fielding capability, through the Technology Development Phase. 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. These efforts will support a Milestone B decision and entry into the Engineering, Manufacturing, and Development (EMD) phase. The DoD is the Public Health Emergency Countermeasures lead for the advanced development of the Filovirus Vaccine.</p> <p>The Ricin toxin is a validated bioweapon threat due to its availability and efficiency of production. The program supports one DoD vaccine candidate including manufacturing cGMP lots; and the continuation of animal model and assay development studies. These efforts also include a Phase 1b clinical trial, regulatory integration, and a manufacturing technology transfer to the ADM capability. The DoD is the Public Health Emergency Countermeasures lead for the advanced development of the Ricin Vaccine.</p> <p>The Western, Eastern, and Venezuelan Equine Encephalitis (VAC WEVEE) Vaccine program initiated competitive candidates in FY13 to reduce program risk, and is developing two candidates 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 DoD is the Public Health Emergency Countermeasures lead for the advanced development of the WEVEE Vaccine.</p> <p>FY 2015 funding includes \$89.1 million of base funding and \$17.3 million of Ebola emergency funding.</p>			
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Title: 1) BSL-4 GLP T&E		5.825	6.237
FY 2014 Accomplishments: Established 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 GLP BSL-4 T&E studies.			
FY 2015 Plans: Achieve IOC; continue to provide strategic planning, program management, and scheduling; broaden and expand contract support plans to meet increased customer demand; conduct GLP BSL-4 T&E medical countermeasure studies in a safe and secure environment.			
FY 2016 Plans:			

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continue to provide strategic planning, program management, and scheduling for GLP BSL-4 T&E capability, conduct secondary capability assessments, develop and implement CONOPS and plans for transition to new facility, conduct GLP BSL-4 T&E medical countermeasure studies in a safe and secure environment.					
Title: 2) BSV FY 2014 Accomplishments: Integrated/Fused Chemical/Biological & Force Protection sensors required for Early Warning capability. FY 2015 Plans: Finalize fusion and integration development for the Early Warning leg.			10.153	4.462	-
Title: 3) BSV FY 2014 Accomplishments: Awarded contracts to acquire candidate systems for the Assessment of Environmental Detector leg of JUPITR ATD. FY 2015 Plans: Conduct down-select of the Assessment of Environmental Detector technologies using data from the demonstrations scheduled at Dugway Proving Ground.			4.817	3.966	-
Title: 4) BSV FY 2014 Accomplishments: Released Biosurveillance Portal software version 2.0. FY 2015 Plans: Release Biosurveillance Portal Software version 3.0 and initiate CENTCOM and National Capital Region Biosurveillance Portal efforts.			18.196	8.035	-
Title: 5) BSV FY 2014 Accomplishments: Conducted user feedback events and technical demonstrations utilizing BICS deliverables. FY 2015 Plans: Transition BICS items to programs of record.			6.097	2.565	-
Title: 6) BSV FY 2014 Accomplishments:			1.243	3.716	-

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Initiated and conducted overarching JUPITR ATD integration IPT and planned integrated JUPITR dry-run.					
FY 2015 Plans: Execute special studies and initiatives to address biosurveillance capability needs across the CBRNE program in alignment with DoD and National Strategies.					
Title: 7) CMDR-B FY 2015 Plans: Initiate anti-bacterial MCM development efforts to develop a US FDA-approved therapeutic that prevents or minimizes the effects of MDR (Multi-Drug Resistant) bacterial exposures. FY 2016 Plans: 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.			-	4.020	10.447
Title: 8) EID Tx FY 2015 Plans: Initiate and complete four filo virus (Ebola) proof of concept studies.			-	2.243	-
Title: 9) HFV FY 2014 Accomplishments: Closed out the Sarepta Ebola effort, completed animal model testing at USAMRIID, completed the multiple ascending dose trial and analytical method validations for the Sarepta Marburg effort, and conducted Phase I Clinical Trials for the Tekmira Ebola effort.			5.000	-	-
Title: 10) NGDS - Increment 1 FY 2014 Accomplishments: Continued development of the Anthrax and Viral Hemorrhagic Fever in-vitro diagnostic (IVD) assays and clinical trials and prepared and submitted FDA clearance 510(k) package. Initiated development of 22 environmental screening assays required to be on NGDS Increment 1 as the replacement to Joint Biological Agent Identification and Diagnostic System (JBAIDS) and to support the Common Analytical Laboratory Systems (CALS). FY 2015 Plans: Complete development of Anthrax and Viral Hemorrhagic Fever IVD assays and clinical trials and prepare and submit FDA clearance 510(k) package.			10.877	0.900	-
Title: 11) NGDS - Increment 1			6.000	0.972	-

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
FY 2014 Accomplishments: Continued Government Testing and prepared for Operational Assessment under Director of Operational Test & Evaluation (DOT&E) oversight for NGDS Increment 1 limited fielding to the United States Air Force (USAF).					
FY 2015 Plans: Continue Developmental Testing and conduct Operational Assessment under DOT&E oversight for NGDS Increment 1 land based diagnostic users.					
Title: 12) NGDS Increment 2 FY 2014 Accomplishments: Prepared for and conducted MS A/B for NGDS Increment 2. Assembled Program Integrated Program Team (IPT) and participating Service/interagency Reps.			1.012	-	-
Title: 13) NGDS - Increment 2 FY 2015 Plans: Initiate CBR diagnostic assay development and purchase of handheld systems/assays for competitive evaluation and early operational testing.			-	5.390	-
Title: 14) NGDS Inc 1 FY 2015 Plans: Initiate and complete emergency fielding of NGDS Inc 1 systems and Ebola emergency use assays in support of the DoD's Ebola Response and Preparedness under Title X.			-	5.100	-
Title: 15) NGDS Inc 2 FY 2015 Plans: Continue and complete collaborative development with DARPA to accelerate development of a ruggedized Ebola detection and diagnostic system capable for use in austere environments in support of the DoD's Ebola Response and Preparedness initiative under Title X.			-	2.500	-
Title: 16) VAC FILO FY 2014 Accomplishments: Continued non-clinical efficacy studies for competitive candidates. FY 2015 Plans:			7.303	8.000	7.500

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continue non-clinical efficacy studies and initiate non-clinical safety studies for multiple competitive candidates and acceleration of efforts in response to Ebola outbreak.					
FY 2016 Plans: Continue and complete non-clinical efficacy and safety studies for competitive multiple candidates.					
Title: 17) VAC FILO			18.322	7.429	11.500
FY 2014 Accomplishments: Continued small-scale manufacturing process development, assay development, and formulation development for competitive candidates.					
FY 2015 Plans: Complete small-scale manufacturing process development and initiate and complete cGMP Pilot Scale Production. Initiate assay qualification and continue formulation development of competitive multiple candidates, as well as, accelerating qualification efforts in response to Ebola outbreak.					
FY 2016 Plans: Complete formulation development, assay qualification and cGMP pilot scale production of competitive candidates. Initiate stability testing.					
Title: 18) VAC FILO			5.098	5.200	4.859
FY 2014 Accomplishments: Continued to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.					
FY 2015 Plans: Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.					
FY 2016 Plans: Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.					
Title: 19) VAC FILO			5.923	4.500	13.126
FY 2014 Accomplishments:					

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Initiated the preparation of Chemistry Manufacturing & Controls (CMC) section for IND submission for competitive prototypes. Planned for pre-IND meeting with the FDA. FY 2015 Plans: Conduct one pre-IND meeting with the FDA on first prototype. Initiate the preparation of IND to include nonclinical data and clinical protocol for competitive prototypes. Initiation of in life clinical trials. Initiate and complete clinical trial for monovalent. FY 2016 Plans: 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.					
Title: 20) VAC FILO FY 2015 Plans: Ebola Response (Title X) funded effort. rVSVDG ZEBOV is one of the three Ebola vaccine candidates identified for expedited development. Funds support GLP toxicology studies (Battelle); Nonhuman primate efficacy studies (USAMRIID); Immunological testing of Phase 1 samples (Battelle/USAMRIID); qualification of Human ELISA (Battelle). These efforts are needed to support the Phase II/III clinical trials and interim fielding capability of this candidate in FY15. Contracts and work plans are in place. 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 are critical to establishing a standardized assay for measuring the immune response across multiple vaccine platforms. Collection of safety and efficacy data in humans has the potential to decrease FDA licensure requirements versus full licensure under the animal rule.			-	9.700	-
Title: 21) VAC RIC FY 2014 Accomplishments: Continued manufacturing process development. Conducted cGMP Pilot Lot Production. FY 2016 Plans: Initiate manufacturing technology transfer to the ADM capability.			1.020	-	2.640
Title: 22) VAC RIC FY 2014 Accomplishments: Continued animal model efficacy studies.			4.891	-	-
Title: 23) VAC RIC FY 2014 Accomplishments:			1.474	-	-

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continued assay development and development of serum test samples. Initiated cGMP manufacturing and Phase 1b Human Clinical Trial.					
Title: 24) VAC WEVEE FY 2014 Accomplishments: Continued non-clinical safety and efficacy studies for competitive candidates. FY 2015 Plans: Continue non-clinical safety and efficacy studies for competitive candidates. Initiate IND-enabling studies. FY 2016 Plans: Continue non-clinical safety, efficacy and IND-enabling studies for competitive candidates.			3.500	7.855	8.716
Title: 25) VAC WEVEE FY 2014 Accomplishments: Continued small-scale manufacturing process development, assay development, and initiated GMP manufacturing for competitive candidates. FY 2015 Plans: Continue small-scale manufacturing process development, assay development, and GMP manufacturing for competitive candidates. Complete GMP manufacturing for one candidate. FY 2016 Plans: Continue small-scale manufacturing process development, and initiate GMP manufacturing for second candidate.			12.741	8.463	12.020
Title: 26) VAC WEVEE FY 2014 Accomplishments: Continued strategic/tactical planning, government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, regulatory and technical support. FY 2015 Plans: Continue strategic/tactical planning, government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, regulatory and technical support. FY 2016 Plans: Continue strategic/tactical planning, government system engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, regulatory and technical support.			3.204	4.139	3.748
Title: 27) VAC WEVEE			-	-	1.123

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B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
FY 2016 Plans: Submit IND for prototype one and initiate clinical trial.												
Title: 28) SBIR/STTR										-	1.419	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.												
Accomplishments/Planned Programs Subtotals										132.696	106.380	81.916
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• MB5: MEDICAL BIOLOGICAL DEFENSE (EMD)	253.748	179.497	117.881	-	117.881	170.122	209.182	215.905	208.482	Continuing	Continuing	
• MB7: MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)	0.493	13.414	11.801	-	11.801	10.420	3.137	13.943	12.496	Continuing	Continuing	
• JM2222: BIOSCAVENGER (BSCAV)	-	-	-	-	-	-	-	4.000	4.000	Continuing	Continuing	
• JM6677: ADVANCED ANTICONVULSANT SYSTEM (AAS)	-	2.500	11.133	-	11.133	-	-	-	-	-	13.633	
• JM8788: NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)	-	12.518	5.300	-	5.300	9.798	15.412	16.014	11.900	Continuing	Continuing	
• JX0005: DOD BIOLOGICAL VACCINE PROCUREMENT (VACCINES)	0.185	6.412	0.185	-	0.185	0.185	0.185	3.848	10.882	Continuing	Continuing	
• JX0210: CRITICAL REAGENTS PROGRAM (CRP)	-	2.564	1.005	-	1.005	1.005	1.005	1.005	1.005	Continuing	Continuing	
• JX0300: BIOSURVEILLANCE (BSV)	2.450	-	-	-	-	-	-	-	-	-	2.450	
Remarks												
D. Acquisition Strategy												
BSL4 GOOD LABORATORY PRACTICES TEST & EVALUATION (BSL4 GLP T&E)												

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<p>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.</p> <p>After attaining a scheduled Initial Operational Capability (IOC) at the end of FY14 and moving into Phase 3, the focus of FY15 will be on conducting 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 sustainment 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.</p> <p>BIOSURVEILLANCE (BSV)</p> <p>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). Lessons learned from the ATD will be transitioned to the programs of record associated with the CBDP (such as NGDS, TDS & CALS). The acquisition strategy will address the materiel solutions identified out of the multiple Biosurveillance (BSV) related Analysis of Alternatives (AoA's).</p> <p>COUNTERMEASURES FOR DRUG RESISTANT BACTERIA (CMDR-B)</p> <p>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 multiple 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 is anticipated in FY15.</p> <p>EMERGING INFECTIOUS DISEASES - THERAPUTIC (EID TX)</p> <p>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</p>		

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<p>1QFY14. Following successful FDA approval of the drug against influenza in 3QFY16, EID Tx will utilize an incremental approach to label extensions of this broad spectrum therapeutic. The development strategy for additional label extensions of the antiviral drug consists of detailed characterization of antiviral activities of the broad-spectrum compound against multiple virus families using cell-based and animal model systems. Using the results of the cell-based assays efficacy assessment of the drug against high-priority viruses of biodefense concern will be performed using small animal studies. The results of the proof of concept studies will determine the best candidate to move forward for the Label Extension (LE) starting in FY15.</p> <p>HEMORRHAGIC FEVER VIRUS (HFV)</p> <p>The acquisition strategy uses an evaluation of a drug candidate against the lethal Ebola Zaire viruses. Following a successful Milestone B and entry into SDD phase, the program will conduct expanded human clinical safety studies, definitive animal efficacy, and toxicology studies, required for FDA approval. The performer will submit a New Drug Application for the Ebola Zaire therapeutic during the SDD 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.</p> <p>NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)</p> <p>The term "Role" is used to describe the stratification of the four tiers in which medical support is organized, on a progressive basis, to conduct treatment, evaluation, resupply, and functions essential to the maintenance of the health of the force. Role 3 support is normally provided at Division or Service equivalent level and includes specialist laboratory resources. The NGDS Inc 1 program has a streamlined MS A to MS C - Limited Deployment acquisition strategy. The NGDS Inc 1 is intended to replace the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17. NGDS Increment 2 (NGDS Inc 2) will complement NGDS Inc 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.</p> <p>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.</p> <p>MB7 funds will support development, testing, and FDA approval of additional assays after system fielding.</p> <p>FILOVIRUS (VAC FILO)</p> <p>The Government will develop multiple Filovirus vaccine candidates through a Phase 1 clinical trial. In response to the Ebola outbreak, efforts have been accelerated to provide an interim fielding capability. The Government will serve as the integrator for the Technology Development Phase by managing and coordinating the various vaccine development contracts. At MS B, the best prototype will be selected through a full and open competition to transition to the Engineering & Manufacturing Development (EMD) Phase with delivery of a FDA licensed Filovirus Vaccine. The development contracts will be a mix of Cost Plus and Firm Fixed Price. In addition, the Program Office will partner with DoD agencies and laboratories to include U.S. Army Medical Research Institute of Infectious Diseases. This DoD program is the</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
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<p>Public Health Emergency Countermeasures lead for the advanced development of this vaccine, and is leveraging expertise across the Federal and International sectors to ensure programmatic success.</p> <p>RICIN VACCINE (VAC RIC)</p> <p>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. FY14 funding will allow the completion of essential efforts. These efforts include manufacturing of cGMP lots, animal model efficacy studies, and assay development. These efforts also include a Phase Ib Clinical Trial to measure the safety and effectiveness of the vaccine in humans. FY14 funds support the Phase 1b clinical study through FY15. FY16 funding will fund the initiation of the manufacturing technology transfer to the ADM capability.</p> <p>WESTERN EASTERN VENEZUELAN EQUINE ENCEPH VACCINE (VAC WEVEE)</p> <p>The WEVEE acquisition strategy uses a parallel evaluation of two vaccine candidates through a Phase 1 clinical trial to achieve competitive prototyping in the Technology Development phase. The lead candidate is more mature than the second candidate. Several potential decision points will be used to assess the candidates for possible down select. The schedule is based on a down select to prototype one. 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 Countermeasures lead for the advanced development of this vaccine and is leveraging expertise across the Federal and International sectors to ensure programmatic success.</p> <p><u>E. Performance Metrics</u></p> <p>N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** BSV - SW GFPR - Portal SW Design & Integration	MIPR	Various :	8.173	17.084	Mar 2014	7.828	Mar 2015	-		-		-	Continuing	Continuing	-
SW SB - BICS Portal Hardware Component and consumables	MIPR	Various :	5.391	4.984	Mar 2014	2.360	Mar 2015	-		-		-	Continuing	Continuing	-
BSV - HW SB - AED Hardware, Integration and Consumables	MIPR	Various :	7.566	3.704	Mar 2014	3.760	Mar 2015	-		-		-	Continuing	Continuing	-
HW SB - Early Warning Hardware & Integration	MIPR	Various :	3.481	9.040	Mar 2014	4.257	Mar 2015	-		-		-	Continuing	Continuing	-
** CMDR-B - SW GFPR - MCM Advanced Development - Contract 1	C/CPIF	Various :	0.000	-		3.546	Jan 2015	8.098	Mar 2016	-		8.098	Continuing	Continuing	-
** HFV - SW SB - Conduct Phase I Clinical Trials	C/CPIF	Tekmira Pharmaceuticals Corp. : Vancouver British Columbia, CN	18.460	1.103	Apr 2014	-		-		-		-	Continuing	Continuing	-
HW S - Complete Phase I Clinical Trials and Analytical Method Development	C/CPIF	Serepta : Bothell, WA	31.230	3.468	Apr 2014	-		-		-		-	Continuing	Continuing	-
** NGDS - HW C - Network Integration	MIPR	JPM Information Systems (JPM IS) : San Diego, CA	0.231	0.200	Mar 2014	0.110	Mar 2015	-		-		-	Continuing	Continuing	-
HW C - Begin and continue diagnostic assay optimization for Plague, Q-Fever and Tularemia IVD.	C/CPFF	BioFire Dx : Salt Lake City, UT	0.000	2.000	Mar 2014	0.262	Mar 2015	-		-		-	Continuing	Continuing	-
HW C - Begin development of 22 agent environmental BWA Screening assay panels	C/CPFF	BioFire Dx : Salt Lake City, UT	0.000	4.400	Mar 2014	0.500	Mar 2015	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)						Project (Number/Name) MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)			
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
HW C - Complete development of Anthrax and Viral Hemorrhagic Fever IVD, clinical trials, prepare FDA submission	Various	BioFire Dx : Salt Lake City, UT	0.000	4.400	Mar 2014	0.200	Mar 2015	-		-		-	Continuing	Continuing	-
Inc 2 - HW C - Hardware/ Assay Development	MIPR	Various :	0.000	-		2.190	Jun 2015	-		-		-	Continuing	Continuing	-
HW C - Imitate and complete emergency fielding of systems and Ebola EUA assays	Various	BioFire Dx : Salt Lake City, UT	0.000	-		5.100	Nov 2014	-		-		-	Continuing	Continuing	-
SW GFPR - Complete development of a ruggedized Ebola detection and diagnostic system capability	Various	TBD :	0.000	-		2.500	Feb 2015	-		-		-	Continuing	Continuing	-
** VAC FILO - HW S - Non Clinical Studies	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	4.700	8.986	Dec 2013	3.709	Dec 2014	2.500	Dec 2015	-		2.500	Continuing	Continuing	-
HW S - Manufacturing Process Development Prototype 1	C/CPIF	Paragon Bioservices Inc. : Baltimore, MD	6.184	6.710	Dec 2013	-		-		-		-	Continuing	Continuing	-
SW GFPR - Manufacturing Pilot Scale Prototype 1	C/CPIF	Paragon Bioservices Inc. : Baltimore, MD	1.290	2.500	Mar 2014	0.250	Mar 2015	-		-		-	Continuing	Continuing	-
HW S - Manufacturing Pilot Scale Prototype 1&2	MIPR	Defense Technical Information Center (DTIC) : Fort Belvoir, VA	0.000	1.545	Mar 2014	10.650	Mar 2015	9.785	Mar 2016	-		9.785	Continuing	Continuing	-
** VAC RIC - HW S - cGMP Manufacturing	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.500	1.200	Jan 2014	-		-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** VAC WEVEE - HW S - Manufacturing and Process Development	MIPR	National Institute of Allergy & Infectious Diseases : Bethesda, MD	5.800	6.973	Dec 2013	3.336	Dec 2014	3.493	Dec 2015	-		3.493	Continuing	Continuing	-
HW S - Manufacturing and Process Development	C/CPIF	Various :	0.000	-		7.627	Dec 2014	6.530	Dec 2015	-		6.530	Continuing	Continuing	-
SW GFPR - Intellectual Property	SS/FFP	Various :	0.000	3.000	Aug 2014	-		-		-		-	Continuing	Continuing	-
Subtotal			93.006	81.297		58.185		30.406		-		30.406	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** BSV - ES S - JUPITR System Engineer & System Support	Various	Various :	2.371	2.954	Mar 2014	1.409	Mar 2015	-		-		-	Continuing	Continuing	-
** NGDS - ES C - Studies and WIPT Support	MIPR	Various :	1.995	1.400	Mar 2014	0.700	Mar 2015	-		-		-	Continuing	Continuing	-
** VAC FILO - ES S - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	2.278	0.200	Jul 2014	0.250	Dec 2014	0.300	Dec 2015	-		0.300	Continuing	Continuing	-
** VAC RIC - ES S - Regulatory Integration	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	0.030	0.252	Mar 2014	-		0.160	Dec 2015	-		0.160	Continuing	Continuing	-
ES S - MPMC Support	MIPR	Various :	0.000	0.372	Mar 2014	-		-		-		-	Continuing	Continuing	-
** VAC WEVEE - ES S - Regulatory Integration	MIPR	National Institute of Allergy & Infectious	0.100	2.678	Dec 2013	0.100	Dec 2014	0.100	Dec 2015	-		0.100	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>						Project (Number/Name) MB4 / <i>MEDICAL BIOLOGICAL DEFENSE (ACD&P)</i>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
		Diseases : Bethesda, MD													
ES S - Regulatory Integration	MIPR	US Army Medical Materiel Development Activity (USAMMDA) : Fort Detrick, MD	0.024	0.023	Nov 2014	0.123	Dec 2014	0.123	Dec 2015	-		0.123	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		1.419		-		-		-	Continuing	Continuing	-
Subtotal			6.798	7.879		4.001		0.683		-		0.683	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** BSL4 GLP T&E - DTE SB - T&E Facility	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.000	5.825	Dec 2013	5.806	Dec 2014	6.237	Dec 2015	-		6.237	Continuing	Continuing	-
** BSV - DTE S - JUPITR Tech Demos AEC	MIPR	Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD	0.178	0.407	Mar 2014	0.484	Mar 2015	-		-		-	Continuing	Continuing	-
OTHT C - JUPITR Operational Demos OTC	MIPR	Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD	0.000	-		1.500	Mar 2015	-		-		-	Continuing	Continuing	-
** EID TX - DTE S - Developmental Testing	MIPR	US Army Medical Research Institute of Infectious Disease	0.000	-		1.854	Mar 2015	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
		(USAMRIID) : Fort Detrick, MD													
** HFV - DTE SB - Animal Models	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	3.959	0.429	Apr 2014	-		-		-		-	Continuing	Continuing	-
** NGDS - Inc 1 - - OTHT C - Conduct DT and OT Testing	MIPR	Various :	4.340	2.789	Mar 2014	1.000	Dec 2014	-		-		-	Continuing	Continuing	-
OTHT C - Test Articles	MIPR	Various :	0.987	1.500	Mar 2014	0.900	Dec 2014	-		-		-	Continuing	Continuing	-
Inc 2 - OTHT C - Conduct Increment 2 DT and OT Testing	MIPR	Various :	0.000	-		0.400	Jun 2015	-		-		-	Continuing	Continuing	-
Inc 2 - OTHT C - Test Articles	MIPR	Various :	0.000	-		0.300	Jun 2015	-		-		-	Continuing	Continuing	-
** VAC FILO - OTHT SB - Testing, Evaluation, and Clinical Trials	MIPR	Battelle Memorial Institute : Columbus, OH	14.586	8.000	Mar 2014	3.500	Dec 2014	8.000	Dec 2015	-		8.000	Continuing	Continuing	-
OTE C - Assay Development Prototype 1	C/CPIF	Paragon Bioservices Inc. : Baltimore, MD	2.792	3.000	Dec 2013	2.207	Mar 2015	5.000	Dec 2015	-		5.000	Continuing	Continuing	-
OTE C - Assay Development Prototype 2	C/CPIF	Texas BioMedical Research Institute : San Antonio, TX	1.200	4.300	Mar 2014	1.000	Dec 2014	4.500	Dec 2015	-		4.500	Continuing	Continuing	-
OTHT SB - Testing, Evaluation, and Clinical Trials	SS/CPFF	TBD :	0.000	-		4.700	Mar 2015	-		-		-	Continuing	Continuing	-
OTHT SB - Testing, Evaluation, and Clinical Trials #2	PO	Texas BioMedical Research Institute : San Antonio, TX	0.000	-		3.350	Mar 2015	1.650	Mar 2016	-		1.650	Continuing	Continuing	-
** VAC RIC - OTE C - Assay Development	MIPR	US Army Medical Research Institute of Infectious Disease	0.000	1.450	Jan 2014	-		-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
		(USAMRIID) : Fort Detrick, MD													
OTHT C - Phase 1b Clinical Trial	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.500	1.401	Jun 2014	-		-		-		-	Continuing	Continuing	-
DTE C - Animal Model Efficacy Studies	MIPR	Battelle Memorial Institute : Columbus, OH	4.000	2.710	Mar 2014	-		-		-		-	Continuing	Continuing	-
DTE C - Manufacturing Tech Transfer	Various	Various :	0.000	-		-		2.480	Jan 2016	-		2.480	Continuing	Continuing	-
** VAC WEVEE - OTE C - Test and Evaluation Assay Development	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	1.054	5.437	Nov 2014	2.435	Dec 2014	5.453	Dec 2015	-		5.453	Continuing	Continuing	-
OTE C - Test and Evaluation Assay Development	MIPR	Battelle Memorial Institute : Columbus, OH	0.748	0.563	Nov 2014	2.920	Dec 2014	5.260	Dec 2015	-		5.260	Continuing	Continuing	-
OTE C - Clinical Trial (Prototype)	MIPR	National Institute of Allergy & Infectious Diseases : Bethesda, MD	0.000	-		-		0.900	Dec 2015	-		0.900	Continuing	Continuing	-
Subtotal			34.344	37.811		32.356		39.480		-		39.480	-	-	-
Remarks A contractual mechanism to access the ADM capability is pending.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)						Project (Number/Name) MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** BSV - PM/MS S - Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.180	0.081	Mar 2014	0.065	Mar 2015	-		-		-	Continuing	Continuing	-
PM/MS S - Management Support	MIPR	Various :	0.000	2.252	Mar 2014	1.081	Mar 2015	-		-		-	Continuing	Continuing	-
** CMDR-B - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	-		0.215	Sep 2015	0.548	Sep 2016	-		0.548	Continuing	Continuing	-
PM/MS SB - Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.000	-		0.177	Jan 2015	0.792	Jan 2016	-		0.792	Continuing	Continuing	-
PM/MS SB - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	-		0.082	Sep 2015	0.209	Sep 2016	-		0.209	Continuing	Continuing	-
PM/MS C - Contractor Systems Engineering/ Program Management Support	C/FP	Various :	0.000	-		-		0.800	Aug 2016	-		0.800	Continuing	Continuing	-
** EID TX - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	4.661	-		0.120	Sep 2015	-		-		-	Continuing	Continuing	-
PM/MS SB - Management Support #3	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	-		0.046	Sep 2015	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)						Project (Number/Name) MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
PM/MS SB - Management Support #4	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.554	-		0.223	Jan 2015	-		-		-	Continuing	Continuing	-
** NGDS - PM/MS SB - Product Management Systems Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.450	0.500	Mar 2014	0.700	Mar 2015	-		-		-	Continuing	Continuing	-
PM/MS S - Product Management Support	Allot	Goldbelt Raven LLC. : Frederick, MD	0.000	0.700	Mar 2014	-		-		-		-	Continuing	Continuing	-
** VAC FILO - PM/MS S - Contractor Support	C/FFP	Various :	0.595	0.605	Jun 2014	-		-		-		-	Continuing	Continuing	-
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	-		0.250	Continuing	Continuing	-
PM/MS S - Program Management/Program Manager Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	1.993	-		3.813	Dec 2014	5.000	Dec 2015	-		5.000	Continuing	Continuing	-
PM/MS SB - PM/MS S - Contractor Systems Engineering/Program Management Support	C/FFP	Various :	1.700	0.800	Mar 2014	-		-		-		-	Continuing	Continuing	-
PM/MS S - Contractor Support	C/FFP	Battelle Memorial Institute : Columbus, OH	0.000	-		0.700	Jun 2015	-		-		-	Continuing	Continuing	-
** VAC WEVEE - PM/MS S - Program Manager Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.040	-		3.916	Dec 2014	1.344	Dec 2015	-		1.344	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)					Project (Number/Name) MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)				
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
PM/MS S - Contractor Systems Engineering Program Support	C/FFP	Various :	0.116	0.316	Jun 2014	-		1.405	Mar 2016	-		1.405	Continuing	Continuing	-
PM/MS S - Joint Vaccine Acquisition Program Management	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.455	Dec 2013	-		0.999	Dec 2015	-		0.999	Continuing	Continuing	-
Subtotal			13.729	5.709		11.838		11.347		-		11.347	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			147.877	132.696		106.380		81.916		-		81.916	-	-	-
Remarks															

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

Date: February 2015

Appropriation/Budget Activity

0400 / 4

R-1 Program Element (Number/Name)

PE 0603884BP / CHEMICAL/BIOLOGICAL
DEFENSE (ACD&P)

Project (Number/Name)

MB4 / MEDICAL BIOLOGICAL DEFENSE
(ACD&P)

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

** BSL4 GLP T&E - BSL-4 GLP T&E - Maintain
Bio-Safety Level BSL-4 Test and Evaluation
Capability

** BSV - JUPITR ATD

BSV - JUPITR ATD Op Demo

BSV - JUPITR ATD Residuals

BSV - Biological Identification Capability Sets
(BICS) Exercises

BSV - Biosurveillance (BSP) Portal Software
2.0

BSV - Biosurveillance (BSP) Portal Software
3.0

BSV - Early Warning Fusion and Integration

BSV - Assessment of Environmental Detectors
(AED) Down-Select

BSV - Residual Purchase - Additional Systems

BSV - Transition of purchase of residual end
items

** CMDR-B - Milestone A Decision

CMDR-B - Milestone B Decision

CMDR-B - Initiate anti-bacterial MCM
development efforts

** EID TX - EID TX-Flu Conduct Phase 2
Bridging Safety Study

EID TX - Expand the EID Tx effort to include
an additional high priority DOD biothreat viral
agent

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program																				Date: February 2015								
Appropriation/Budget Activity										R-1 Program Element (Number/Name)										Project (Number/Name)								
0400 / 4										PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)										MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)								
	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
EID TX - EID TX-LE Initiate and Complete Proof of Concept Studies																												
EID TX - EID TX-LE Milestone B																												
** HFV - Ebola Milestone B Decision																												
HFV - Complete Pre-Clinical Efficacy and Safety Testing for Ebola MCM																												
HFV - Complete Non-Clinical Efficacy and Safety Testing for Marburg MCM																												
HFV - Sarepta Ebola MCM Close Out																												
** NGDS - Increment 1 Competitive Prototyping Phase																												
NGDS - Increment 1 Anthrax/Viral Hemorrhagic Fever IVD Development and clearance																												
NGDS - Increment 1 MS C																												
NGDS - Increment 1 IOC																												
NGDS - Increment 1 FOC																												
NGDS - Increment 1 Environmental Assay Development																												
NGDS - Increment 1 Multi Service Operational Test																												
NGDS - NGDS Inc 1 Army and Air Force IOC																												
NGDS - Increment 2 - MS A																												
NGDS - Increment 2 Contract Award & Early Operational Assessment																												
** VAC FILO - VAC FILO DUAL - Manufacturing Pilot Scale - 2 Prototypes																												
VAC FILO - VAC FILO DUAL - Assay Development and Qualification - 2 Prototypes																												

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

Date: February 2015

Appropriation/Budget Activity

0400 / 4

R-1 Program Element (Number/Name)

PE 0603884BP / CHEMICAL/BIOLOGICAL
DEFENSE (ACD&P)

Project (Number/Name)

MB4 / MEDICAL BIOLOGICAL DEFENSE
(ACD&P)

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
VAC FILO - Pre-IND meeting with FDA (first prototype)																												
VAC FILO - VAC FILO DUAL - Milestone B																												
VAC FILO - VAC FILO DUAL - Non-clinical efficacy and safety studies																												
VAC FILO - VAC FILO DUAL - Conduct Final Drug Product Formulation - 2 Prototypes																												
VAC FILO - VAC FILO DUAL - Manufacturing process development/assay and formulation development; cGMP Manufacturing																												
VAC FILO - VAC FILO DUAL - Pre-IND meeting with FDA (second prototype)																												
VAC FILO - VAC FILO DUAL - IND Submission (first prototype)																												
VAC FILO - VAC FILO DUAL - Phase 1 Clinical Trials (2 prototypes)																												
VAC FILO - VAC FILO DUAL - IND Submission (2 of 2 prototypes)																												
** VAC RIC - Assay Development																												
VAC RIC - Animal Model Efficacy Studies																												
VAC RIC - Manufacturing cGMP Lots																												
VAC RIC - Phase 1b Human Clinical Trial																												
VAC RIC - Manufacturing Technology Transfer to the ADM Capability																												
** VAC WEVEE - Non-Clinical Studies																												
VAC WEVEE - Manufacturing Assay Development																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) MB4 / <i>MEDICAL BIOLOGICAL DEFENSE (ACD&P)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
VAC WEVEE - Manufacturing Process Development and Pilot Lots																												
VAC WEVEE - Pre-IND																												
VAC WEVEE - IND Submission																												
VAC WEVEE - Phase 1 Clinical Trials																												
VAC WEVEE - Milestone B																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) MB4 / <i>MEDICAL BIOLOGICAL DEFENSE (ACD&P)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** BSL4 GLP T&E - BSL-4 GLP T&E - Maintain Bio-Safety Level BSL-4 Test and Evaluation Capability	2	2014	4	2020
** BSV - JUPITR ATD	1	2014	4	2017
BSV - JUPITR ATD Op Demo	3	2015	4	2015
BSV - JUPITR ATD Residuals	1	2016	4	2017
BSV - Biological Identification Capability Sets (BICS) Exercises	1	2014	3	2015
BSV - Biosurveillance (BSP) Portal Software 2.0	4	2014	4	2014
BSV - Biosurveillance (BSP) Portal Software 3.0	4	2015	4	2015
BSV - Early Warning Fusion and Integration	1	2014	3	2015
BSV - Assessment of Environmental Detectors (AED) Down-Select	2	2015	2	2015
BSV - Residual Purchase - Additional Systems	2	2016	2	2016
BSV - Transition of purchase of residual end items	4	2015	4	2017
** CMDR-B - Milestone A Decision	2	2015	2	2015
CMDR-B - Milestone B Decision	2	2017	2	2017
CMDR-B - Initiate anti-bacterial MCM development efforts	1	2015	4	2015
** EID TX - EID TX-Flu Conduct Phase 2 Bridging Safety Study	1	2014	2	2014
EID TX - Expand the EID Tx effort to include an additional high priority DOD biothreat viral agent	1	2015	4	2015
EID TX - EID TX-LE Initiate and Complete Proof of Concept Studies	2	2015	3	2015
EID TX - EID TX-LE Milestone B	4	2015	4	2015
** HFV - Ebola Milestone B Decision	2	2015	2	2015
HFV - Complete Pre-Clinical Efficacy and Safety Testing for Ebola MCM	2	2014	2	2015
HFV - Complete Non-Clinical Efficacy and Safety Testing for Marburg MCM	1	2014	4	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program				Date: February 2015	
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)		Project (Number/Name) MB4 / MEDICAL BIOLOGICAL DEFENSE (ACD&P)	
		Start		End	
Events	Quarter	Year	Quarter	Year	
HFV - Sarepta Ebola MCM Close Out	2	2014	1	2015	
** NGDS - Increment 1 Competitive Prototyping Phase	1	2014	1	2014	
NGDS - Increment 1 Anthrax/Viral Hemorrhagic Fever IVD Development and clearance	1	2014	4	2015	
NGDS - Increment 1 MS C	2	2016	3	2016	
NGDS - Increment 1 IOC	4	2016	4	2016	
NGDS - Increment 1 FOC	2	2019	2	2019	
NGDS - Increment 1 Environmental Assay Development	1	2015	4	2015	
NGDS - Increment 1 Multi Service Operational Test	1	2015	3	2016	
NGDS - NGDS Inc 1 Army and Air Force IOC	3	2017	3	2017	
NGDS - Increment 2 - MS A	1	2015	1	2015	
NGDS - Increment 2 Contract Award & Early Operational Assessment	3	2015	1	2016	
** VAC FILO - VAC FILO DUAL - Manufacturing Pilot Scale - 2 Prototypes	2	2014	4	2016	
VAC FILO - VAC FILO DUAL - Assay Development and Qualification - 2 Prototypes	2	2014	4	2016	
VAC FILO - Pre-IND meeting with FDA (first prototype)	3	2015	3	2015	
VAC FILO - VAC FILO DUAL - Milestone B	1	2017	1	2017	
VAC FILO - VAC FILO DUAL - Non-clinical efficacy and safety studies	2	2014	4	2016	
VAC FILO - VAC FILO DUAL - Conduct Final Drug Product Formulation - 2 Prototypes	2	2014	1	2017	
VAC FILO - VAC FILO DUAL - Manufacturing process development/assay and formulation development; cGMP Manufacturing	2	2014	4	2016	
VAC FILO - VAC FILO DUAL - Pre-IND meeting with FDA (second prototype)	1	2016	1	2016	
VAC FILO - VAC FILO DUAL - IND Submission (first prototype)	3	2015	3	2015	
VAC FILO - VAC FILO DUAL - Phase 1 Clinical Trials (2 prototypes)	3	2015	3	2017	
VAC FILO - VAC FILO DUAL - IND Submission (2 of 2 prototypes)	2	2016	2	2016	
** VAC RIC - Assay Development	1	2014	3	2015	
VAC RIC - Animal Model Efficacy Studies	1	2014	3	2015	
VAC RIC - Manufacturing cGMP Lots	2	2014	1	2015	

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) MB4 / <i>MEDICAL BIOLOGICAL DEFENSE (ACD&P)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
VAC RIC - Phase 1b Human Clinical Trial	4	2014	4	2015
VAC RIC - Manufacturing Technology Transfer to the ADM Capability	1	2016	4	2020
** VAC WEVEE - Non-Clinical Studies	1	2014	1	2017
VAC WEVEE - Manufacturing Assay Development	1	2014	1	2015
VAC WEVEE - Manufacturing Process Development and Pilot Lots	1	2014	2	2016
VAC WEVEE - Pre-IND	2	2015	2	2015
VAC WEVEE - IND Submission	3	2016	3	2016
VAC WEVEE - Phase 1 Clinical Trials	3	2016	1	2018
VAC WEVEE - Milestone B	2	2019	2	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) MC4 / MEDICAL CHEMICAL DEFENSE (ACD&P)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MC4: MEDICAL CHEMICAL DEFENSE (ACD&P)	-	1.970	-	-	-	-	-	-	-	-	-	1.970
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 funds: 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), product formulation enhancements to increase survival, and expanded pretreatment indications for the use of pyridostigmine bromide (PB), the active component of Soman Nerve Agent Pretreatment Pyridostigmine (SNAPP).

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

	FY 2014	FY 2015	FY 2016
Title: 1) INATS	1.189	-	-
FY 2014 Accomplishments: Continued and completed non-clinical toxicology studies.			
Title: 2) INATS	0.511	-	-
FY 2014 Accomplishments: Completed enhanced formulation stability studies and process optimization efforts.			
Title: 3) INATS	0.270	-	-
FY 2014 Accomplishments: Continued and completed Phase 1 clinical trial.			
Accomplishments/Planned Programs Subtotals	1.970	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program								Date: February 2015			
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>				Project (Number/Name) MC4 / <i>MEDICAL CHEMICAL DEFENSE (ACD&P)</i>			

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

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	40.973	48.529	42.913	-	42.913	49.322	38.153	25.158	6.371	Continuing	Continuing
• JM6677: <i>ADVANCED ANTICONVULSANT SYSTEM (AAS)</i>	-	2.500	11.133	-	11.133	-	-	-	-	-	13.633

Remarks

D. Acquisition Strategy

IMPROVED NERVE AGENT TREATMENT SYSTEM (INATS)

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.

INATS' evolutionary Acquisition Strategy, recently expanded by the Joint Program Executive Office, Chemical and Biological Defense (JPEO-CBD) 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 Milestone B and C reviews for the oxime and CA developments, and decision reviews for PB expansion beyond the combined-development Technology Maturation and Risk Reduction (TM&RR) Phase will be conducted. In the TMRR 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 continue as system integrator with integration support from commercial partners to ensure that INATS development and manufacture is in accordance with Food and Drug Administration (FDA) regulations and guidelines; the commercial integration 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 system integrator, with a commercial partner, will pursue full-rate and stockpile production and will conduct any FDA mandated post-marketing surveillance studies; the system integrator 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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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) MC4 / <i>MEDICAL CHEMICAL DEFENSE (ACD&P)</i>
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>						Project (Number/Name) MC4 / <i>MEDICAL CHEMICAL DEFENSE (ACD&P)</i>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** INATS - ES S - Regulatory Integration, IND, and NDA Support Efforts	MIPR	Battelle Memorial Institute : Columbus, OH	1.356	0.145	Mar 2014	-		-		-		-	-	1.501	-
Subtotal			1.356	0.145		-		-		-		-	-	1.501	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** INATS - DTE S - Conduct Enhanced Formulation Stability Studies	C/CPFF	Southwest Research Institute : San Antonio, TX	1.444	0.480	Mar 2014	-		-		-		-	-	1.924	-
INATS - DTE C - Phase 1 Clinical Trial	MIPR	Battelle Memorial Institute : Columbus, OH	2.335	0.250	Dec 2013	-		-		-		-	-	2.585	-
INATS - HW S - Toxicological and Efficacy Studies	MIPR	Battelle Memorial Institute : Columbus, OH	1.045	0.950	Mar 2014	-		-		-		-	-	1.995	-
Subtotal			4.824	1.680		-		-		-		-	-	6.504	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** INATS - INATS - PM/ MS S - Chem Bio Medical Systems	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.815	0.145	Dec 2013	-		-		-		-	-	0.960	-
Subtotal			0.815	0.145		-		-		-		-	-	0.960	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program											Date: February 2015						
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)					Project (Number/Name) MC4 / MEDICAL CHEMICAL DEFENSE (ACD&P)							
					Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals					6.995	1.970		-		-		-		-	-	8.965	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program	Date: February 2015
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) MC4 / <i>MEDICAL CHEMICAL DEFENSE (ACD&P)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 - Formulation / Stability Studies																												
INATS - Nonclinical Studies - Oxime																												
INATS - Phase 1 Clinical Safety Studies																												
INATS - Pre SDD Review																												
INATS - Milestone B																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) MC4 / <i>MEDICAL CHEMICAL DEFENSE (ACD&P)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** INATS - Formulation / Stability Studies	1	2014	4	2014
INATS - Nonclinical Studies - Oxime	1	2014	4	2014
INATS - Phase 1 Clinical Safety Studies	1	2014	3	2015
INATS - Pre SDD Review	3	2015	3	2015
INATS - Milestone B	1	2016	1	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) TE4 / TEST & EVALUATION (ACD&P)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
TE4: TEST & EVALUATION (ACD&P)	-	12.106	18.188	17.371	-	17.371	18.836	19.199	18.803	13.717	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 four groups to include: (1) Sense Laboratory (Chemical); (2) Sense Laboratory (Biological); (3) Individual Protection, Collective Protection and Decontamination (Shield and Sustain); and (4) Sense (Field). Additionally, TESS supports the analysis of the infrastructure investment opportunities, system engineering processes and business case analyses.

(1) Sense Laboratory (Chemical): The products for this area is the Non-Traditional Agent Defense Test System (NTADTS) and improvements to the Dynamic Test Chamber (DTC). The NTADTS provides a new capability to conduct chemical defense testing against current and emerging threat agents. The NTADTS supports testing of decontamination, collective protection, individual protection, and contamination avoidance products. The DTC provides a new capability for testing chemical point detection systems against chemical warfare agents in various environmental conditions. The CBD acquisition programs supported are Dismounted Reconnaissance Sets Kits and Outfits (DR SKO), Next Generation Chemical Detector (NGCD), Joint Sensitive Equipment Wipes (JSEW), and Common Analytical Laboratory System (CALS). Future efforts will include the development of test methods and methodologies for additional classes of agents.

(2) Sense Laboratory (Biological): The product for this area is the Joint Ambient Breeze Tunnel (JABT) and the Active Standoff Chamber (ASC), which is currently used for point detection. The JABT and ASC improvements will provide a tech refresh to existing infrastructure and allow for test results to be integrated into the Dugway Proving Ground (DPG) test Data Management System (DMS). The CBD acquisition programs supported are the Joint Biological Tactical Detection System (JBTDTS), and the Joint USFK Point and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD).

(3) Individual Protection, Collective Protection and Decontamination (Shield and Sustain): This product for this area is the Materials Test Capabilities (MTC). The CBD acquisition programs supported is Uniform Integrated Protective Ensemble - II (UIPE- Increment 2)

(4) Sense (Field): The product for this area is the Test Grid. The Test Grid effort provides a fully instrumented grid for chemical and biological simulant field test capabilities that integrate referee systems; dissemination equipment; cloud tracking equipment; meteorological equipment; and DPG test 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)

	FY 2014	FY 2015	FY 2016
Title: 1) PD TESS - Non-Traditional Agent Defense Test System (NTADTS)	9.137	6.285	5.900

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>		Project (Number/Name) TE4 / <i>TEST & EVALUATION (ACD&P)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> Completed development of methodologies and assessments for first NTA class. Initiated assessments for worker safety for NTA efforts.					
<i>FY 2015 Plans:</i> Initiate methodology development for additional classes of agent.					
<i>FY 2016 Plans:</i> Continue methodology development for additional classes of agent.					
<i>Title:</i> 2) PD TESS - Joint Ambient Breeze Tunnel (JABT)			-	1.946	1.702
<i>FY 2015 Plans:</i> Initiate component upgrades to JABT. Develop environmental controls for tunnel and component upgrades to include data collection instrumentation, dissemination equipment and referee systems. Conduct software upgrades for the command post systems in preparation for integration into the Dugway Proving Ground (DPG) Data Management System (DMS).					
<i>FY 2016 Plans:</i> Continue component upgrades to JABT for integration into the DMS.					
<i>Title:</i> 3) PD TESS - Active Standoff Chamber			-	1.462	1.988
<i>FY 2015 Plans:</i> Initiate component hardware and software upgrades to data collection instrumentation, dissemination equipment, referee systems, and command posts for integration into the Dugway Proving Ground (DPG) Data Management System (DMS).					
<i>FY 2016 Plans:</i> Continue component upgrades to ASC for integration into the DMS.					
<i>Title:</i> 4) PD TESS - Materials Test Capability (MTC)			1.327	3.119	2.063
<i>FY 2014 Accomplishments:</i> Initiated laboratory revitalization and characterization of candidate systems.					
<i>FY 2015 Plans:</i> Complete laboratory revitalization. Initiate test fixture design modifications and integrate into laboratory. Initiate methodology development.					
<i>FY 2016 Plans:</i>					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)					Project (Number/Name) TE4 / TEST & EVALUATION (ACD&P)		
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Finalize test fixture design modifications and integrate into laboratory. Verify and validate test fixture.												
Title: 5) PD TESS - Test Grid										-	5.094	3.544
FY 2015 Plans: Initiate analysis of remaining Test Grid gaps. Initiate integration of Joint Ambient Breeze Tunnel (JABT) and Active Standoff Chamber (ASC) upgraded capabilities.												
FY 2016 Plans: Characterize and integrate biological and chemical and dissemination systems.												
Title: 6) PD TESS - Dynamic Test Chamber (DTC)										-	-	2.174
FY 2016 Plans: Initiate methodology development for upgrades to support Next Generation Chemical Detector test and evaluation.												
Title: 7) PD TESS - Test Infrastructure Analysis & Requirements (TIA&R)										1.642	-	-
FY 2014 Accomplishments: Conducted business case analyses. Characterized current capabilities for the Chemical and Biological Defense Program (CBDP) to support decisions for new test infrastructure. Documented CBDP test infrastructure gaps.												
Title: 8) SBIR/STTR										-	0.282	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.												
Accomplishments/Planned Programs Subtotals										12.106	18.188	17.371
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• TE5: TEST & EVALUATION (EMD)	22.867	9.176	6.053	-	6.053	6.255	6.493	6.311	6.310	Continuing	Continuing	
• TE7: TEST & EVALUATION (OP SYS DEV)	3.646	5.984	4.091	-	4.091	5.107	5.169	5.376	5.461	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
TEST EQUIPMENT, STRATEGY & SUPPORT (PD TESS)												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) TE4 / <i>TEST & EVALUATION (ACD&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.		
<u>E. Performance Metrics</u> N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) TE4 / TEST & EVALUATION (ACD&P)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 - NTA Defense Test System Design/Fabrication/ Installation	C/CPFF	MRIGlobal : Kansas City, MO	33.975	0.943	Mar 2014	0.250	Mar 2015	0.250	Mar 2016	-		0.250	Continuing	Continuing	-
Test Infrastructure - HW S - NTA Defense Test System Design/ Fabrication/Installation	MIPR	Various :	9.121	5.105	Mar 2014	4.050	Mar 2015	4.000	Mar 2016	-		4.000	Continuing	Continuing	-
Test Infrastructure - HW S - Test Grid	C/CPFF	ITT Information Systems : Alexandria, VA	1.200	-		1.850	Mar 2015	1.297	Mar 2016	-		1.297	Continuing	Continuing	-
Test Infrastructure - HW S - Joint Ambient Breeze Tunnel Component Upgrade	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	-		1.000	Mar 2015	1.010	Mar 2016	-		1.010	Continuing	Continuing	-
Test Infrastructure - HW S - Joint Ambient Breeze Tunnel Component Upgrades	C/CPFF	Various :	0.000	-		0.331	Mar 2015	0.360	Mar 2016	-		0.360	Continuing	Continuing	-
Test Infrastructure - HW S - Active Stand-off Chamber Component Upgrades	MIPR	Various :	0.000	-		0.750	Mar 2015	1.675	Mar 2016	-		1.675	Continuing	Continuing	-
Test Infrastructure - HW S - Active Stand-off Chamber Component Upgrades #2	C/CPFF	Various :	0.000	-		0.250	Mar 2015	0.425	Mar 2016	-		0.425	Continuing	Continuing	-
Test Infrastructure - HW S - Test Infrastructure Analysis & Requirements Capability Analyses	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	1.088	Mar 2014	-		-		-		-	Continuing	Continuing	-
Test Infrastructure - HW S - Materials Test Capability Design and Modifications	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.525	Mar 2014	0.500	Mar 2015	0.661	Mar 2016	-		0.661	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)				Project (Number/Name) TE4 / TEST & EVALUATION (ACD&P)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Test Infrastructure - HW S - Materials Test Capability Design and Modifications #2	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.475	Mar 2014	1.052	Mar 2015	1.000	Mar 2016	-		1.000	Continuing	Continuing	-
Test Infrastructure - HW S - Materials Test Capability Design and Modifications #3	MIPR	Pine Bluff Arsenal : Pine Bluff, AR	0.000	-		0.300	Mar 2015	-		-		-	Continuing	Continuing	-
Test Infrastructure - HW S - Test Grid Design and Upgrade	MIPR	Various :	0.000	-		1.215	Mar 2015	0.895	Mar 2016	-		0.895	Continuing	Continuing	-
Test Infrastructure - HW S - Test Grid Design and Upgrade #2	C/CPFF	Various :	0.000	-		0.420	Mar 2015	0.661	Mar 2016	-		0.661	Continuing	Continuing	-
Test Infrastructure - HW S - Dynamic Test Chamber Design and Upgrade	MIPR	Various :	0.000	-		-		1.750	Mar 2016	-		1.750	Continuing	Continuing	-
Subtotal			44.296	8.136		11.968		13.984		-		13.984	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 - ES S - Integrated Product Team (IPT) Support	MIPR	Various :	5.102	1.333	Dec 2013	3.178	Dec 2014	2.337	Dec 2015	-		2.337	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR- SBIR/STTR	PO	TBD :	0.000	-		0.282		-		-		-	Continuing	Continuing	-
Subtotal			5.102	1.333		3.460		2.337		-		2.337	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603884BP / CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)						Project (Number/Name) TE4 / TEST & EVALUATION (ACD&P)			
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 - PM/MS S - Management/Systems/ Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	2.564	2.637	Dec 2013	2.760	Dec 2014	1.050	Dec 2015	-		1.050	Continuing	Continuing	-
Subtotal			2.564	2.637		2.760		1.050		-		1.050	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			51.962	12.106		18.188		17.371		-		17.371	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) TE4 / <i>TEST & EVALUATION (ACD&P)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** PD TESS - NTA Defense Test System (NTADTS) laboratory revitalization and test chamber design																												
PD TESS - NTA Defense Test System (NTADTS) Facility Upgrades for Next Class of Agents																												
PD TESS - Joint Ambient Breeze Tunnel (JABT) - Initiate/Design Component Upgrades																												
PD TESS - Active Standoff Chamber (ASC) - Initiate/Design Component Upgrades																												
PD TESS - Materials Test Capability - Fixture Initiation/Design																												
PD TESS - Materials Test Capability - Initiate and Complete Design Mods																												
PD TESS - Test Grid - Validate and Transition Initial Capability/Conduct Upgrades																												
PD TESS - Test Grid - IOC																												
PD TESS - Test Grid - FOC																												
PD TESS - DTC - Methodology Development for Upgrades																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (ACD&P)</i>	Project (Number/Name) TE4 / <i>TEST & EVALUATION (ACD&P)</i>
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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	2014	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	3	2015	4	2017
PD TESS - Active Standoff Chamber (ASC) - Initiate/Design Component Upgrades	3	2015	4	2017
PD TESS - Materials Test Capability - Fixture Initiation/Design	1	2014	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	2014	4	2018
PD TESS - Test Grid - IOC	3	2015	4	2016
PD TESS - Test Grid - FOC	2	2018	4	2018
PD TESS - DTC - Methodology Development for Upgrades	1	2016	4	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 5: System Development & Demonstration (SDD)</i>					R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	415.467	345.883	303.647	-	303.647	363.435	402.501	335.184	314.086	Continuing	Continuing
CA5: <i>CONTAMINATION AVOIDANCE (EMD)</i>	-	28.757	50.582	56.104	-	56.104	65.765	93.784	44.238	58.712	Continuing	Continuing
CM5: <i>HOMELAND DEFENSE (EMD)</i>	-	14.311	16.508	17.192	-	17.192	18.108	1.518	-	-	-	67.637
CO5: <i>COLLECTIVE PROTECTION (EMD)</i>	-	13.148	4.670	7.361	-	7.361	-	-	-	-	-	25.179
DE5: <i>DECONTAMINATION SYSTEMS (EMD)</i>	-	7.519	11.146	16.744	-	16.744	15.854	18.871	7.609	6.676	Continuing	Continuing
IP5: <i>INDIVIDUAL PROTECTION (EMD)</i>	-	24.989	15.435	19.439	-	19.439	14.262	11.524	11.610	1.799	Continuing	Continuing
IS5: <i>INFORMATION SYSTEMS (EMD)</i>	-	9.155	10.340	19.960	-	19.960	23.747	22.976	24.353	25.736	Continuing	Continuing
MB5: <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	-	253.748	179.497	117.881	-	117.881	170.122	209.182	215.905	208.482	Continuing	Continuing
MC5: <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	-	40.973	48.529	42.913	-	42.913	49.322	38.153	25.158	6.371	Continuing	Continuing
TE5: <i>TEST & EVALUATION (EMD)</i>	-	22.867	9.176	6.053	-	6.053	6.255	6.493	6.311	6.310	Continuing	Continuing

A. Mission Description and Budget Item Justification

Operational forces have an immediate need to survive, safely operate, and sustain operations in a Chemical and Biological (CB) threat environment across the continuum of global, contingency, special operations/low intensity conflict, counternarcotics, and other high-risk missions. Operating forces have a critical need for defense against worldwide proliferation of CB warfare capabilities and for medical treatment of CB casualties. Congress directed centralized management of Department of Defense (DoD) CB Defense initiatives, both medical and non-medical. This program element supports the System Development and Demonstration (SDD) of medical and physical CB defensive equipment and materiel. Projects within BA5 are structured to consolidate Joint and Service-unique tasks within four commodity areas: contamination avoidance, individual and collective force protection, decontamination, and medical countermeasures. This consolidation provides for development and operational testing of equipment for Joint Service use and for Service-unique requirements.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 5: System Development & Demonstration (SDD)	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	
<p>Contamination avoidance efforts under this system development program will provide U.S. forces with real-time hazard assessment capabilities. They include multi-agent point and remote chemical detection for ground, aircraft, and shipboard applications; automated warning and reporting systems; integrated radiation detection and monitoring equipment; and enhanced battlefield reconnaissance capabilities. Force protection efforts will increase protection levels while decreasing physical and psychological burdens imposed by protective equipment.</p> <p>The Secretary of Defense is responsible for research, development, acquisition, and deployment of medical countermeasure equipment and materiel to prevent or mitigate the health effects of CB threats to the Armed Forces and directs strategic planning for and oversight of programs to support medical countermeasures development and acquisition for our Armed Forces personnel. The CB medical threat to the Armed Forces, in contrast with public health threats to U.S. citizens, encompasses all potential or continuing enemy actions that can render a Service Member combat ineffective. CB medical threats, because they apply as a whole to military units deployed on a specific mission and/or operations, may result in the unit being unable to complete its mission. CB medical countermeasures developed by DoD, unlike those developed to support the U.S. population, must support military commanders practical operational requirements and deployment strategies and must emphasize prevention of injury and illness and protection of the force. Preventive measures in this SDD, such as vaccines and chemical prophylaxis, conserves fighting strength, decreases the logistics burden by reducing the need for larger deployed hospital footprint and greater demand for tactical and strategic medical evacuation, and satisfy the need for greater flexibility in military planning and operations. When vaccines and other prophylactic medical countermeasures are not available, efforts on this SDD support pre-hospitalization treatment, en-route care, hospital care, and long-term clinical outcomes. Specific items in this category include CB diagnostics, and therapeutics to mitigate the consequences of biologic threats and exposure to ionizing radiation due to nuclear or radiological attacks.</p> <p>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.</p> <p>The projects in this program element support efforts in the engineering and manufacturing phase of the acquisition strategy and are therefore correctly placed in Budget Activity 5.</p> <p>FY 2015 funding includes \$335.9 million of base funding and \$10.0 million of Ebola emergency funding.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program	Date: February 2015
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0604384BP I <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>
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B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	426.299	345.883	334.784	-	334.784
Current President's Budget	415.467	345.883	303.647	-	303.647
Total Adjustments	-10.832	-	-31.137	-	-31.137
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.314	-			
• SBIR/STTR Transfer	-6.518	-			
• Other Adjustments	-	-	-31.137	-	-31.137

Change Summary Explanation

Funding: N/A

Schedule: N/A

Technical: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) CA5 / CONTAMINATION AVOIDANCE (EMD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
CA5: CONTAMINATION AVOIDANCE (EMD)	-	28.757	50.582	56.104	-	56.104	65.765	93.784	44.238	58.712	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports System Development and Demonstration and Low Rate Initial Production (SDD/LRIP) of an array of reconnaissance, detection and identification equipment, and warning systems. Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, CONOPS and TTPs. Efforts included in this project are: (1) Chemical, Biological, Radiological, and Nuclear Dismounted Reconnaissance Systems (CBRN DRS); (2) Joint Biological Tactical Detection System (JBTDs); (3) Next Generation Chemical Detector (NGCD); (4) Non-Traditional Agent (NTA) Defense Support; (5) Non-Traditional Agent (NTA) Detection Support, and (6) the Global Biosurveillance Technology Initiatives (GBTI).

The CBRN Dismounted Reconnaissance Systems (CBRN DRS) consists of portable, commercial and government off-the-shelf equipment which provides personnel protection from current and emerging CBRN hazards through detection, identification, sample collection, decontamination, marking, and hazard reporting for CBRN threats. The system supports Dismounted Reconnaissance, Surveillance, and CBRN Site Assessment missions which enable more detailed and near real-time CBRN information flow to the Warfighter. The program will address emerging CBRN threat requirements in order to provide an enhanced capability for the future.

The Joint Biological Tactical Detection System (JBTDs) program will develop, integrate, test, and produce the first lightweight, low cost biological surveillance system that will detect, collect, and identify biological warfare agent aerosols. JBTDs will provide warning through the Joint Warning And Reporting Network (JWARN) and archive sample for follow-on analyses. JBTDs, providing near real-time local audio and visual alarm, may be employed by any Military User. JBTDs components will be man-portable, battery-operable, and easy to employ. JBTDs will develop a tactical common identifier using technology from the Next Generation Detection System. JBTDs will provide notification of a hazard and enhance battle space awareness to protect and preserve the force. When networked, JBTDs will augment existing biological detection systems to provide a theater-wide seamless array capable of biological detection, identification and warning to support time sensitive force protection decisions.

The 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; Air Monitor, Surface Survey and Multi-sample Analysis were awarded contracts in the Technical Maturation and Risk Reduction Phase. The fourth capability - personal chemical detection is still in technology development, These sensors will improve detection, consequence management and reconnaissance, and weapons of mass destruction (WMD) interdiction capabilities. The scope of the project includes detection of agent a few feet away from the detector as well as the sampling point of the detector.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CA5 / <i>CONTAMINATION AVOIDANCE (EMD)</i>
<p>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 programs that account for the breadth and depth of emerging threats which span the full range of military missions. By leveraging previous work done on NTAs (NTA DETECT) within the DoD, interagency cooperation, and international partnerships, 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 current CB threats. The program will develop a balanced portfolio which will target capabilities to reduce 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.</p> <p>The Non-Traditional Agent (NTA) Detect project will identify, evaluate and continue to transition advanced detection and identification system(s) through follow-on technology insertion efforts which enhance the Domestic Response Capability (DRC), CBRN DRS (Dismounted Reconnaissance Sets, Kits, and Outfits), and Next Generation Chemical Detector programs. These efforts will ensure that specialized units will maintain situational awareness and have the ability to respond to emerging threats. The systems provide a mid-term capability to detect emerging threat materials and afford the Warfighter the ability to support domestic response and force protection missions. These systems will leverage common core technologies to detect and identify threats that can be exploited for lab deployable, fixed site and handheld applications.</p> <p>The Global Biosurveillance Technology Initiatives (GBTI) will develop a globally-distributed, fully integrated and networked, state-of-the-art analytical capability for biological threats that will enable the compression of the discovery-to-decision timeframe and provide awareness and understanding of the baseline biological threat footprint.</p>		
B. Accomplishments/Planned Programs (\$ in Millions)		
Title: 1) CBRN DRS - Dismounted Reconnaissance Sets, Kits, and Outfits (DR SKO)		FY 2014
FY 2014 Accomplishments: Completed documentation, systems engineering, and design to support FRP. Continued IPT support.		FY 2015
		FY 2016
Title: 2) CBRN DRS - DR SKO		0.711
FY 2014 Accomplishments: Completed verification and assessment of Failure, Mode, Effects, and Criticality Analysis (FMECA).		-
		-
Title: 3) CBRN DRS - DR SKO		0.941
FY 2014 Accomplishments: Completed TM verification and logistics products development.		-
		-
Title: 4) JBTDS		0.321
FY 2014 Accomplishments:		5.579
		-
		-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 5		R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) CA5 / CONTAMINATION AVOIDANCE (EMD)		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continued to provide enterprise support for programmatic planning and strategic integration, financial management system support, contractual oversight and management support, acquisition oversight, and technical and IT systems support.					
Title: 5) JBTDS FY 2015 Plans: Initiate development and design of a tactical common identifier using the down-selected identification system from Next Generation Diagnostic System (NGDS)Increment 1 program. FY 2016 Plans: Continue development and design of a tactical common identifier using the identification system down-selected from Next Generation Diagnostic System (NGDS) Increment 1 program.			-	8.439	4.075
Title: 6) JBTDS FY 2014 Accomplishments: Provided government strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support. FY 2015 Plans: Continue government strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, testing and evaluation, scheduling, and technical support. FY 2016 Plans: Continue government strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, testing and evaluation, scheduling, and technical support.			8.576	6.572	9.454
Title: 7) JBTDS FY 2014 Accomplishments: Initiated combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) during Technology Maturation Risk Reduction (TMRR) Phase. FY 2015 Plans: Continue combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) during Engineering and Manufacturing Development Phase. FY 2016 Plans:			1.553	2.168	2.430

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 5		R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) CA5 / CONTAMINATION AVOIDANCE (EMD)		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continue combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups)during Engineering and Manufacturing Development Phase.					
Title: 8) JBTDS FY 2014 Accomplishments: Initiated development of unique test fixtures and adapters required to use the specific JBTDS system under test into the test chamber. FY 2015 Plans: Complete development of unique test fixtures and adapters required to use the specific JBTDS system under test into the test chamber.			0.535	0.850	-
Title: 9) JBTDS FY 2015 Plans: Initiate developmental planning and testing to include live agent, environmental false alarm, shipboard operations, outdoor interferent and military standard testing. FY 2016 Plans: Continue developmental planning and testing to include live agent, environmental false alarm, shipboard operations, outdoor interferent and military standard testing.			-	0.750	5.515
Title: 10) JBTDS FY 2014 Accomplishments: Initiated sensor calibration standards effort for routine maintenance, metrology and calibration capability for detection systems. FY 2015 Plans: Continue sensor calibration standards effort for routine maintenance, metrology and calibration capability for detection systems. FY 2016 Plans: Continue sensor calibration standards effort for routine maintenance, metrology and calibration capability for detection systems.			0.475	1.200	0.600
Title: 11) JBTDS FY 2016 Plans: Initiate reliability growth model for EMD phase testing.			-	-	0.125
Title: 12) JBTDS FY 2014 Accomplishments:			0.224	0.200	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Initiated the verification and validation of military utility model.					
FY 2015 Plans: Complete the verification and validation of military utility model.					
Title: 13) JBTDS FY 2015 Plans: Initiate the Engineering and Manufacturing Development (EMD) Contract (including 103 test articles at approximately \$70,000 each). FY 2016 Plans: Continue the EMD Contract (including 43 test articles at approximately \$70,000 each).			-	16.719	12.573
Title: 14) JBTDS FY 2016 Plans: Initiate combat developer, test community and Service representation (i.e. integrated product teams (IPT) and working groups) for USN variant.			-	-	0.983
Title: 15) JBTDS FY 2016 Plans: Initiate developmental testing to include live agent, environmental false alarm, shipboard operations, outdoor interferent and military standard testing for USN variant.			-	-	1.031
Title: 16) JBTDS FY 2016 Plans: Initiate the Contract action (including test articles) for USN variant.			-	-	4.972
Title: 17) JBTDS FY 2016 Plans: Provide government strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, and technical support for USN Variant.			-	-	2.871
Title: 18) Next Generation Chemical Detector (NGCD) FY 2015 Plans: Purchase 50 prototypes at approximately \$24,000 each.			-	1.136	-
Title: 19) Next Generation Chemical Detector (NGCD)			-	2.203	1.250

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
FY 2015 Plans: Prepare and initiate Production Qualification Test (PQT).					
FY 2016 Plans: Complete PQT.					
Title: 20) Next Generation Chemical Detector (NGCD)			-	0.509	0.729
FY 2015 Plans: Initiate Government Program Management.					
FY 2016 Plans: Continue Government Program Management.					
Title: 21) NTA Defense - Threat Understanding/Military Utility and Supportability			1.837	1.457	1.942
FY 2014 Accomplishments: Initiated analysis of threat understanding and combat developer provided operational analysis to ascertain technology and capability gaps in multiple missions. Leveraged previous work done under NTA Detect to fully characterize outputs of threat and operational phenomenology. Centralized the analysis outputs and extended threat phenomenology methodology to all commodities.					
FY 2015 Plans: Expand analysis of threat understanding to further emerging classes and provide information to combat developers to ascertain technology and capability gaps in multiple missions. Leverage previous work to fully characterize outputs of threat and operational phenomenology. Centralize the analysis outputs and provide enhanced understanding of current NTA threat presentation.					
FY 2016 Plans: Initiate planning for expanded threat space characterization. Continue analysis of threat understanding for further emerging classes to enable refinement of technology and capability gaps identified during mission analysis. Utilize mission analysis outputs to develop initial Military Utility Assessments (MUAs) and Table Top Exercises (TTXs) that inform requirement development.					
Title: 22) NTA Defense - Systems Engineering			-	1.411	1.535
FY 2015 Plans: Verify and validate model for use in identifying system performance trade space prior to technology evaluation, system design or final requirements definition.					
FY 2016 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Execute mission modeling to identify enterprise (multi-commodity) NTA solutions to support accelerated and enduring materiel solution development.					
Title: 23) NTA Defense - Test and Evaluation			3.148	2.857	2.171
FY 2014 Accomplishments: Initiated emerging threat test bed and methodologies to evaluate component technologies (detectors, decontaminants, individual protection ensembles) for the enterprise to inform technology development strategies and support competitive prototypes and technology insertions in acquisition programs across the evolving emerging threat space.					
FY 2015 Plans: Continue to utilize emerging threat test bed facilities and methodologies to evaluate component technologies (detectors, decontaminants, individual protection ensembles, etc.) for the enterprise to inform technology development strategies and support competitive prototypes and technology insertions in acquisition programs against all emerging threats. Supports assessments of fielded capabilities against new threats and assists risk assessments.					
FY 2016 Plans: Continue to utilize emerging threat test bed for system/component technology evaluation against emerging and unforeseen threats, preparing inputs into Systems Engineering processes that conduct solution set analyses.					
Title: 24) NTA Defense - Technology Assessments			3.921	2.451	-
FY 2014 Accomplishments: Initiated synchronization of acquisition strategies across the Chemical and Biological Defense Program (CBDP), Interagency, and International Community for all NTA initiatives. Conducted assessments and coordinated science and technology transition through Enterprise Wide IPT for whole of government.					
FY 2015 Plans: Complete assessments and utilize fielded equipment characterization to identify potential NTA capabilities or respond to emerging requirements.					
Title: 25) NTA Defense - Strategic Coordination (NTA Library)			0.436	0.892	0.892
FY 2014 Accomplishments: Developed and updated the NTA Library to provide a database for NTA knowledge.					
FY 2015 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Utilize DoD/CBDP guidance to synchronize acquisition strategies across interagency and international NTA initiatives. Expand capabilities of the NTA Library to accommodate emerging information and upgrade for use by whole of government. FY 2016 Plans: Continue to synchronize acquisition strategies across interagency and international NTA initiatives according to DoD/CBDP guidance. Continue to update and maintain NTA Library. Initiate transition to effects manual.					
Title: 26) NTA Detect - Systems Engineering FY 2014 Accomplishments: Initiated expansion of detection-focused systems engineering modeling tools to account for protection, medical, and decontamination. Initiated model refinement in preparation for verification and validation to be completed using NTA DEFENSE funding.			0.500	-	-
Title: 27) Global Biosurveillance Technology Initiative (GBTI) Description: The Global Biosurveillance Technology Initiative (GBTI), formerly funded under the Next Generation Diagnostic System (NGDS) is an ongoing effort transitioning from BSV technology to fulfill requirements with expanded capabilities of lab equipment (technologies) lending new, unique and emerging surveillance capabilities for both existing labs as well as new labs. FY 2016 Plans: Continue ongoing efforts to procure additional assays for biological warfare agents and emerging infectious diseases to support the GBTI labs previously funded under the Next Generation Diagnostic System (NGDS) within MCS in 2015.			-	-	1.300
Title: 28) GBTI Description: The Global Biosurveillance Technology Initiative (GBTI), formerly funded under the Next Generation Diagnostic System (NGDS) is an ongoing effort transitioning from BSV technology to fulfill requirements with expanded capabilities of lab equipment (technologies) lending new, unique and emerging surveillance capabilities for both existing labs as well as new labs. FY 2016 Plans: Continue ongoing efforts for bioinformatics integration for Global Biosurveillance Technology Initiative (GBTI) previously funded under the Next Generation Diagnostic System (NGDS) within MCS in 2015.			-	-	0.700
Title: 29) GBTI Description: The Global Biosurveillance Technology Initiative (GBTI), formerly funded under the Next Generation Diagnostic System (NGDS) is an ongoing effort transitioning from BSV technology to fulfill requirements with expanded capabilities of lab equipment (technologies) lending new, unique and emerging surveillance capabilities for both existing labs as well as new labs.			-	-	0.956

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
FY 2016 Plans: Continue ongoing efforts for three open architecture analytical platforms to be fielded and technology insertion of additional capabilities in support the GBTI labs previously funded under the Next Generation Diagnostic System (NGDS) within MCS in 2015.												
Title: 30) SBIR/STTR										-	0.768	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.												
Accomplishments/Planned Programs Subtotals										28.757	50.582	56.104
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• CA4: CONTAMINATION AVOIDANCE (ACD&P)	16.800	40.088	60.192	-	60.192	41.486	3.372	2.370	7.056	Continuing	Continuing	
• JC0100: JOINT BIO POINT DETECTION SYSTEM (JBPDS)	23.895	-	-	-	-	-	-	-	-	-	23.895	
• JF0100: JOINT CHEMICAL AGENT DETECTOR (JCAD)	47.262	36.924	7.834	-	7.834	7.547	-	-	-	-	99.567	
• JF0104: NEXT GEN CHEMICAL DETECTOR (NGCD)	-	-	1.000	-	1.000	2.378	1.000	17.208	17.204	Continuing	Continuing	
• JN0900: NON TRADITIONAL AGENT DETECTION (NTA DETECT)	1.121	-	-	-	-	-	-	-	-	-	1.121	
• MC0100: JOINT NBC RECONNAISSANCE SYSTEM (JNBCRS)	-	3.600	3.600	-	3.600	3.600	3.600	-	-	-	14.400	
• MC0101: CBRN DISMOUNTED RECONNAISSANCE SYSTEMS (CBRN DRS)	64.398	123.694	108.704	-	108.704	97.789	102.288	134.343	151.179	Continuing	Continuing	
• MX0001: JOINT BIO TACTICAL DETECTION SYSTEM (JBTDs)	-	-	-	-	-	-	17.385	69.379	69.377	Continuing	Continuing	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program									Date: February 2015		
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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Remarks											
D. Acquisition Strategy											
CBRN DISMOUNTED RECONNAISSANCE SYSTEMS											
The Chemical Biological Radiological Nuclear Dismounted Reconnaissance Systems (CBRN DRS) program uses a government-off-the-shelf (GOTS)/commercial-off-the-shelf (COTS) non-developmental item (NDI) single step acquisition approach to full capability. This strategy employs an NDI acquisition concept to establish a simplified management framework to translate mission needs and emerging technology capabilities into a stable, affordable, and well-managed acquisition program. CBRN DRS systems will be produced using a workshare approach between Organic assets and Contractor workforce.											
JOINT BIO TACTICAL DETECTION SYSTEM (JBTDS)											
The JBTDS program will use an evolutionary acquisition strategy. Under this approach, capability is developed based on current technologies, recognizing up front the need for potential technology insertion as technology advances to provide better and more cost effective capabilities. Technology insertions will provide militarily useful and supportable operational capabilities that can be developed, produced, deployed, and sustained. JBTDS will make maximum use of commercial off-the-shelf (COTS) and Government off-the-shelf (GOTS) technology. The JBTDS program is coordinating with Common Analytical Laboratory System and Next Generation Diagnostic System (NGDS) to share information and leverage potential common identification technology solutions. JBTDS will utilize the contract mechanism through NGDS develop a NGDS tactical variant identifier. Full and open competition will be utilized at MS B for the Engineering and Manufacturing Development contract with options for Low Rate Initial Production and Full Rate Production.											
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 Air Monitoring capability, four (4) contracts for the Surface survey capability, and three (3) contracts for the Multi-Sample Analysis 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. Candidates for acceleration to provide partial capability will be selected from either the NGCD2 or NGCD1, based on emerging breadboard test results.											
NON TRADITIONAL AGENT DEFENSE (NTA DEFENSE)											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
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<p>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 contract actions that: (1) evaluate COTS and GOTS technologies and systems, (2) conduct demonstrations and experiments, (3) integrates Intelligence Community threat analysis, JRO/ J-8 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) coordination of DoD, interagency, international NTA projects. These initiatives allow CBDP/JPEO to mitigate risk against emerging threats and better prepare the warfighter to deal with technological surprise across the full range of military missions.</p> <p>NON TRADITIONAL AGENT DETECTION (NTA DETECT)</p> <p>The Non-Traditional Agent (NTA) Detection technology assessments, performance tradeoff analyses, and mission decomposition transitioned a detection capability through incremental acquisition that afforded the Warfighter ability to attain situational awareness and respond to unknown and emerging hazards. COTS/GOTS assessments were used in order to lower program risks, reduce costs, and ensure a higher confidence in selected technologies. The project will address next priority mission areas and threats underneath the NTA Defense profile.</p> <p>GLOBAL BIO TECH INITIATIVE (GBTI)</p> <p>Global Biosurveillance Technology Initiative (GBTI) will use an evolutionary acquisition strategy. Under this approach capability is developed and fielded based on current technologies and user needs. Technology insertions will provide state-of-the art analytical capability for biological threats. GBTI will make maximum use of commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) technology.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JBTDS - JBTDS - HW S - EMD Contract Award	C/CPIF	TBD :	0.000	-		16.719	Mar 2015	12.573	Dec 2015	-		12.573	Continuing	Continuing	-
JBTDS - HW C - Tactical Common Identifier	C/CPFF	BioFire Dx : Salt Lake City, UT	0.000	-		8.439	Mar 2015	4.075	Mar 2016	-		4.075	Continuing	Continuing	-
JBTDS - HW C - USN Variant Contract Action	Various	TBD :	0.000	-		-		4.972	Jun 2016	-		4.972	Continuing	Continuing	-
** NGCD - NGCD-HW S - Prototype Build	C/CPFF	TBD :	0.000	-		1.136	Dec 2014	-		-		-	Continuing	Continuing	-
** NTA DEFENSE - NTA Defense - HW S - Fielded Equipment Characterization	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	0.931	Mar 2014	0.862	Mar 2015	0.525	Mar 2016	-		0.525	Continuing	Continuing	-
NTA Defense - HW S - Fielded Equipment Characterization	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	-		0.675	Mar 2015	0.375	Mar 2015	-		0.375	Continuing	Continuing	-
NTA Defense - HW S - Systems Engineering	C/CPFF	Various :	0.000	-		0.950	Mar 2015	0.950	Mar 2015	-		0.950	Continuing	Continuing	-
NTA Defense - HW S - NTADTS System Design/ Fab/Ins	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.450	Mar 2014	-		-		-		-	Continuing	Continuing	-
NTA Defense - HW S - Strategic Coordination	MIPR	Various :	0.000	0.899	Mar 2014	0.250	Mar 2015	0.400	Mar 2015	-		0.400	Continuing	Continuing	-
** GBTI - HW S - GBTI - CRP Assay Optimization	MIPR	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	-		-		1.300	Dec 2015	-		1.300	Continuing	Continuing	-
Subtotal			0.000	2.280		29.031		25.170		-		25.170	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
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Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CBRN DRS - CBRN DRS - ILS S - Logistics Products	C/CPFF	FLIR Systems Inc. : Elkridge, MD	5.604	0.750	Mar 2014	-		-		-		-	Continuing	Continuing	-
** JBTDS - JBTDS - ES S - OTA/OGA Service Representation	MIPR	Various :	0.000	1.553	Mar 2014	2.168	Mar 2015	2.430	Mar 2016	-		2.430	Continuing	Continuing	-
JBTDS - ES S - Test Infrastructure Upgrade (WSLAT)	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.535	Mar 2014	0.850	Mar 2015	-		-		-	Continuing	Continuing	-
JBTDS - ES S - Biosensor Calibration Effort	MIPR	Naval Research Lab (NRL) : Washington, DC	0.000	0.475	Jun 2014	1.200	Mar 2015	0.600	Mar 2016	-		0.600	Continuing	Continuing	-
JBTDS - ES S - OTA/OGA Representation USN Variant	MIPR	Various :	0.000	-		-		0.983	Jun 2016	-		0.983	Continuing	Continuing	-
** NTA DEFENSE - NTA Defense - ES S - Analysis and Evaluation	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.054	Mar 2014	0.054	Mar 2015	0.054	Mar 2016	-		0.054	Continuing	Continuing	-
NTA Defense - TD/D C - Integrated Product Team (IPT) Support	MIPR	Various :	0.000	1.108	Mar 2014	0.876	Mar 2015	1.008	Mar 2016	-		1.008	Continuing	Continuing	-
** NTA DETECT - NTA Detect - ES S - Systems Engineering Modeling Tool	FFRDC	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	0.550	0.500	Mar 2014	-		-		-		-	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.768		-		-		-	Continuing	Continuing	-
Subtotal			6.154	4.975		5.916		5.075		-		5.075	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
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Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CBRN DRS - CBRN DRS-DTE S - Developmental Testing and Operational Assessment	MIPR	Various :	8.613	0.373	Mar 2014	-		-		-		-	Continuing	Continuing	-
** JBTDS - JBTDS DTE S - Developmental Testing	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	-		0.750	Mar 2015	3.765	Mar 2016	-		3.765	Continuing	Continuing	-
JBTDS - DTE S - V&V of JBTDS Military Utility Model	MIPR	Institute for Defense Analysis (IDA) : Alexandria, VA	0.000	0.224	Jun 2014	0.200	Jun 2015	-		-		-	Continuing	Continuing	-
JBTDS OHT S - Reliability growth model	MIPR	TBD :	0.000	-		-		0.125	Mar 2016	-		0.125	Continuing	Continuing	-
JBTDS - DTE S - Development Testing	MIPR	Aberdeen Test Center (ATC) : Aberdeen Proving Ground, MD	0.000	-		-		1.450	Mar 2016	-		1.450	Continuing	Continuing	-
JBTDS - DTE S - Development Testing #2	MIPR	Navy Operational Test and Eval Force (OPTEVFOR) : Norfolk, VA	0.000	-		-		0.300	Mar 2016	-		0.300	Continuing	Continuing	-
JBTDS - DTE S - Development Testing USN Variant	MIPR	Various :	0.000	-		-		1.031	Jun 2016	-		1.031	Continuing	Continuing	-
** NGCD - NGCD-DTE S - Production Qualification Test	MIPR	Various :	0.000	-		2.203	Mar 2015	1.250	Dec 2015	-		1.250	Continuing	Continuing	-
** NTA DEFENSE - NTA Defense - DTE S - Developmental Test and Evaluation	C/CPFF	Battelle Memorial Institute : Columbus, OH	0.000	1.728	Mar 2014	1.490	Mar 2015	0.714	Mar 2016	-		0.714	Continuing	Continuing	-
NTA Defense - DTE S - Developmental Test and Evaluation	MIPR	Edgewood Chemical Biological Center	0.000	-		0.860	Mar 2015	0.536	Mar 2016	-		0.536	Continuing	Continuing	-

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Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
		(ECBC) : Aberdeen Proving Ground, MD													
NTA Defense - DTE S - Analysis and Evaluation	C/CPFF	MA Institute of Tech - Lincoln Labs (MIT-LL) : Lexington, MA	0.000	1.545	Mar 2014	0.981	Mar 2015	0.950	Mar 2016	-		0.950	Continuing	Continuing	-
Subtotal			8.613	3.870		6.484		10.121		-		10.121	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CBRN DRS - CBRN DRS - PM/MS-S - Program Management and System Engineering Support	MIPR	Various :	3.899	0.850	Dec 2013	-		-		-		-	Continuing	Continuing	-
** JBTDS - JBTDS PM/MS SB - Program Management and System Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	2.996	Dec 2013	6.572	Dec 2014	9.454	Dec 2015	-		9.454	Continuing	Continuing	-
JBTDS PM/MS SB - Headquarters-level management services	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	11.159	Sep 2014	-		-		-		-	Continuing	Continuing	-
JBTDS - PM/MS C - Program Management and System Engineering Support USN Variant	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	-		-		2.871	Dec 2015	-		2.871	Continuing	Continuing	-
** NGCD - NGCD-PM/MS C - Program Management	MIPR	JPM NBC Contamination Avoidance (JPM	0.000	-		0.509	Mar 2015	0.729	Dec 2015	-		0.729	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
and Systems Engineering Support		NBC CA) : JPEO, Aberdeen Proving Ground, MD													
** NTA DEFENSE - NTA Defense - PM/MS S - Program Management Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	2.627	Mar 2014	2.070	Mar 2015	1.028	Mar 2016	-		1.028	Continuing	Continuing	-
** GBTI - PM/MS S - GBTI - Information Architecture (Bioinformatics)	MIPR	Various :	0.000	-		-		0.956	Dec 2015	-		0.956	Continuing	Continuing	-
PM/MS S - MagPix MiSeq	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	-		-		0.700	Jan 2016	-		0.700	Continuing	Continuing	-
Subtotal			3.899	17.632		9.151		15.738		-		15.738	-	-	-

Remarks

Also includes the Government Integrated Product Development Team

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.666	28.757		50.582		56.104		-		56.104	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CA5 / <i>CONTAMINATION AVOIDANCE (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** CBRN DRS - LRIP	■																											
CBRN DRS - MOT&E	■																											
CBRN DRS - FRP/Deployment																												
** JBTDS - Capability Development Document	■	■																										
JBTDS - MS B Decision						■																						
JBTDS - EMD Contract Award							■																					
JBTDS - PDR							■																					
JBTDS - CDR										■																		
JBTDS - DT																												
JBTDS - Operational Assessment																												
JBTDS - Milestone C																												
JBTDS - PVT																												
JBTDS - OT																												
JBTDS - FRP Decision																												
JBTDS - IOC																												
** NGCD - Milestone A		■																										
NGCD - Prototype Build																												
NGCD - Production Qualification Test (PQT)																												
NGCD - Milestone C Accelerated																												
NGCD - LRIP																												
NGCD - Production Verification Test (PVT)																												
NGCD - IOT&E																												
NGCD - FRP																												
NGCD - Production																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CA5 / <i>CONTAMINATION AVOIDANCE (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
NGCD - Milestone B Acceleration																												
NGCD - EMD - Acceleration																												
** NTA DEFENSE - Threat Understanding																												
NTA DEFENSE - Systems Engineering																												
NTA DEFENSE - Test and Evaluation																												
NTA DEFENSE - Technology Assessments - GOTS																												
NTA DEFENSE - Strategic Coordination (NTA Library)																												
** NTA DETECT - System Engineering Modeling Tool																												
** GBTI - GBTI Equipment Sets																												
GBTI - Assays and reagents																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CA5 / <i>CONTAMINATION AVOIDANCE (EMD)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** CBRN DRS - LRIP	1	2014	1	2014
CBRN DRS - MOT&E	1	2014	1	2014
CBRN DRS - FRP/Deployment	2	2014	4	2020
** JBTDS - Capability Development Document	1	2014	3	2014
JBTDS - MS B Decision	1	2015	1	2015
JBTDS - EMD Contract Award	2	2015	2	2015
JBTDS - PDR	2	2015	2	2015
JBTDS - CDR	1	2016	1	2016
JBTDS - DT	4	2015	2	2017
JBTDS - Operational Assessment	2	2017	2	2017
JBTDS - Milestone C	4	2017	4	2017
JBTDS - PVT	3	2018	1	2019
JBTDS - OT	2	2019	3	2019
JBTDS - FRP Decision	1	2020	1	2020
JBTDS - IOC	2	2020	2	2020
** NGCD - Milestone A	2	2014	2	2014
NGCD - Prototype Build	1	2015	2	2015
NGCD - Production Qualification Test (PQT)	2	2015	1	2016
NGCD - Milestone C Accelerated	2	2016	2	2016
NGCD - LRIP	2	2016	3	2016
NGCD - Production Verification Test (PVT)	3	2016	1	2017
NGCD - IOT&E	2	2017	2	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CA5 / <i>CONTAMINATION AVOIDANCE (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
NGCD - FRP	3	2017	3	2017
NGCD - Production	3	2017	4	2019
NGCD - Milestone B Acceleration	2	2015	2	2015
NGCD - EMD - Acceleration	2	2015	2	2016
** NTA DEFENSE - Threat Understanding	1	2014	2	2017
NTA DEFENSE - Systems Engineering	1	2014	4	2017
NTA DEFENSE - Test and Evaluation	1	2014	4	2017
NTA DEFENSE - Technology Assessments - GOTS	1	2014	4	2015
NTA DEFENSE - Strategic Coordination (NTA Library)	1	2014	4	2020
** NTA DETECT - System Engineering Modeling Tool	1	2014	4	2014
** GBTI - GBTI Equipment Sets	2	2016	2	2016
GBTI - Assays and reagents	3	2016	3	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) CM5 / HOMELAND DEFENSE (EMD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
CM5: HOMELAND DEFENSE (EMD)	-	14.311	16.508	17.192	-	17.192	18.108	1.518	-	-	-	67.637
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

This project supports a comprehensive, integrated and layered Chemical Biological Radiological Nuclear (CBRN) protection and response capability for military installations and specialized military consequence management units both at home and abroad. Particular emphasis is placed on improving military-civilian interoperability in CBRN detection and response capabilities; providing tiered levels of CBRN protection and response capabilities to military installations; and tailored modular and integrated COTS solutions to consequence management units.

Included in this project are the following developmental efforts:

The Common Analytical Laboratory System capability (CALS) will be modular, scalable and adaptable to a variety of concept of operations (CONOPS) and environmental conditions. Currently, fielded systems have been designed independently by various agencies with the intent of meeting a specific units requirements. As a result, multiple mobile lab configurations exist with differing sustainment tails and lacking in commonality. The analytical detection package fielded will be fitted to the specific mission and CONOPS of the gaining unit and be able to detect and identify Chemical Warfare Agents (CWAs), Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs) and Biological Warfare Agents (BWAs). Users of the system will include the National Guard Bureau Civil Support Teams, the Army 20th Support Command, the Army Medical Laboratory, the Air Force, and the Navy.

The Special Purpose Unit - Chemical Biological Equipment (SPU CBE) program supports the evaluation and acquisition integrated chemical, biological, radiological, nuclear and explosive (CBRNE) rapid response capabilities for National Guard Bureau's (NGB) Weapons of Mass Destruction Civil Support Teams (WMD-CST) and Special Purpose Units - Chemical Biological Equipment (SPU-CBE) which consists of the CBRNE Enhanced Response Force Package (CERFP), the United States Marine Corps Chemical Biological Incident Response Force (CBIRF), United States Marine Corps Marine Expeditionary Force (MEF), the United States Army Reserve (USARC) Chemical Recon Platoons, Decon Platoons, Defense Support of Civil Authority CBRN Response Force (DCRF), and the 20th Support Command Nuclear Disablement (NDT) and CBRNE Teams, United States Air Force BAT, BEE, PAM, and Navy FDPMU. Key activities of this program include ongoing life cycle assessments for the portfolio of fielded commercial-off-the-shelf (COTS) CBRNE equipment, identification and evaluation of emerging technologies, prioritization and fielding of improved capabilities to meet established requirements, and the establishment of institutionalized training. The overall capability package includes hand held detection, protection, decontamination, situational awareness software assessment and sampling tools, The purpose of this program is to address legacy requirements gaps/deficiencies for WMD-CST's and SPU-CBE's where they exist through the streamlined acquisition of COTS/government-off-the-shelf (GOTS) capability upgrades that incorporate proven advancements in technology to satisfy mission performance standards.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 5		R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		Project (Number/Name) CM5 / <i>HOMELAND DEFENSE (EMD)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Title: 1) CALS - Tier III Component Testing			3.145	-	-
FY 2014 Accomplishments: Initiated and Completed Tier III Component testing Activities					
Title: 2) CALS - Subsystem Component Test and Evaluation			-	4.935	1.500
FY 2015 Plans: Initiate EMD sub-system DT/OT.					
FY 2016 Plans: Complete EMD sub-system DT/OT in preparation for Milestone C.					
Title: 3) CALS - System Level Prototype Variant Development and Manufacturing			4.568	6.502	-
FY 2014 Accomplishments: Completed preliminary design concepts and review for CALS variant prototypes.					
FY 2015 Plans: Initiate the procurement of System Level variant prototypes ensuring integration and connectivity between modules as a general system layout. Purchase parts materials, fabrication, processing, subassembly, final assembly, reworking modification, and installation of parts and equipment, power plants, electronic equipment, and other items (including government-Furnished equipment [GFE]), and the proving of such equipment and instruments for the specified system prototype (Module).					
Title: 4) CALS - System Level Test and Evaluation			-	-	6.342
FY 2016 Plans: System Level Developmental Test (DT), Logistics Demonstration and contract verification testing for field confirmatory and theater validation variants.					
Title: 5) CALS - System Integration Laboratory			0.375	0.561	0.800
Description: The System Integration Laboratory supports risk reduction activities by enabling the integration, evaluation and testing of stand alone component / subsystem functionality and interoperability prior to prototype production.					
FY 2014 Accomplishments: Continued system integration laboratory analysis and risk reduction activities.					
FY 2015 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CM5 / <i>HOMELAND DEFENSE (EMD)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Continued system integration laboratory analysis risk reduction and initiated activities to incorporate analysis of variant system configurations, capabilities, engineering controls.			
FY 2016 Plans: Continue system integration laboratory analysis risk reduction and activities to incorporate analysis of variant system configurations, capabilities, engineering controls, information assurance and DIACAP requirements.			
Title: 6) CALS - Support and Training Equipment		-	-
FY 2016 Plans: Procure systems and tools to facilitate operator training, evaluation and user demonstrations.			3.000
Title: 7) CALS - Safety Release Internal Review Board		-	-
FY 2016 Plans: Initiate the process for obtaining safety release for all CALS variants in preparation for Logistics Demonstration. Safety release for all equipment is required prior to utilizing active duty personnel for testing activities.			0.800
Title: 8) CALS - System Engineering and Program Management		3.777	4.259
FY 2014 Accomplishments: Continue System and Program Management Support to provide management and engineering, quality assurance, and design support in preparation of Critical Design Review, manufacture of prototypes, and testing.			4.750
FY 2015 Plans: Continue System and Program Management Support to provide management and engineering, quality assurance and design support in preparation of Critical Design Review, manufacture of prototypes, and testing.			
FY 2016 Plans: Continue System and Program Management Support to provide management and engineering, quality assurance and design support in preparation of Critical Design Review, manufacture of prototypes, and testing.			
Title: 9) SPU CBE		2.446	-
FY 2014 Accomplishments: Conducted Evaluation of CBRN Commercial Off-The-Shelf (COTS) product technology for integration into Special Purpose Unit mission profile.			-
Title: 10) SBIR/STTR		-	0.251
FY 2015 Plans:			-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015	
Appropriation/Budget Activity 0400 / 5				R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>				Project (Number/Name) CM5 / <i>HOMELAND DEFENSE (EMD)</i>			

B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
SBIR/STTR - FY15 - Small Business Innovative Research.												
Accomplishments/Planned Programs Subtotals										14.311	16.508	17.192

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• JS0004: <i>WMD - CIVIL SUPPORT TEAMS (WMD CST)</i>	13.866	13.292	5.069	-	5.069	-	-	-	-	-	32.227
• JS0005: <i>COMMON ANALYTICAL LABORATORY SYSTEM (CALS)</i>	-	-	-	-	-	17.794	41.181	64.778	63.907	Continuing	Continuing

Remarks

D. Acquisition Strategy
COMMON ANALYTICAL LABORATORY SYSTEM (CALS)

The Common Analytical Laboratory System (CALS) will follow an incremental approach leveraging COTS/ GOTS solutions designed to address known joint force capability requirements for Chemical, Biological, Radiological and Nuclear (CBRN) field confirmatory and theatre validation analysis which includes Toxic Industrial Chemicals (TICs), Toxic Industrial Materials (TIMs), Chemical Warfare Agents (CWAs), Biological Warfare Agents (BWAs). CALS will address situational awareness by utilizing efforts underway to the extent possible. CALS will accommodate these component requirements within a modular and scalable concept framework.

SPU CB EQUIPMENT (SPUCBE)

Evaluate advancements in commercial off the shelf (COTS)/government-off-the-shelf (GOTS) equipment against the current technology baseline of equipment fielded to Special Purpose Units. Establish a time phased modernization plan to integrate and incorporate proven advancements in commercially available technology into the Special Purpose Unit mission set based on highest priority capability requirements and availability of resources.

E. Performance Metrics
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CM5 / <i>HOMELAND DEFENSE (EMD)</i>
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CALS - CALS - HW S Engineering and Planning	Various	Various :	0.000	-		0.540	Mar 2015	-		-		-	-	0.540	-
CALS - HW Component Testing	Various	Various :	0.000	3.145	Dec 2013	-	Dec 2014	-		-		-	-	3.145	-
CALS - HW S Prototype System Manufacturing	Various	Various :	0.000	4.568	Mar 2014	6.502	Dec 2014	-		-		-	-	11.070	-
HW S - Training Equipment Sets	SS/FFP	TBD :	0.000	-		-		3.000	Jan 2016	-		3.000	-	3.000	-
** SPU CBE - HW S - CBRN Special Purpose Equipment	C/FP	TBD :	0.000	2.171	Jan 2014	-		-		-		-	-	2.171	-
Subtotal			0.000	9.884		7.042		3.000		-		3.000	-	19.926	-

Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CALS - ES S - CALS - Engineering Support System	C/FFP	Various :	0.000	2.574	Mar 2014	2.269	Mar 2015	3.150	Jan 2016	-		3.150	-	7.993	-
ES S - CALS - System Integration Laboratory Support	MIPR	Various :	0.000	0.375	Mar 2014	0.561	Mar 2015	0.800	Jan 2016	-		0.800	-	1.736	-
TD/D S - CALS - Safety Internal Review Board	MIPR	TBD :	0.000	-		-		0.800	Mar 2016	-		0.800	-	0.800	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.251		-		-		-	-	0.251	-
Subtotal			0.000	2.949		3.081		4.750		-		4.750	-	10.780	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015					
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)						Project (Number/Name) CM5 / HOMELAND DEFENSE (EMD)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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		
** CALS - DTE SB - CALS Subsystem Prototype/ Subsystem DT/OT	C/CPIF	TBD :	0.000	-		4.935	Mar 2015	1.500	Jan 2016	-		1.500	-	6.435	-		
DTE S - CALS - System DT and LOGDEMO	C/CPIF	TBD :	0.000	-		-		4.842	Jan 2016	-		4.842	-	4.842	-		
DTE SB - CALS - Operation Test Agencies	MIPR	TBD :	0.000	-		-		1.500	Jan 2015	-		1.500	-	1.500	-		
Subtotal			0.000	-		4.935		7.842		-		7.842	-	12.777	-		
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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		
** CALS - PM/MS HW - Program Office - Planning and Programming	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	1.203	Mar 2014	1.450	Mar 2015	1.600	Mar 2016	-		1.600	-	4.253	-		
** SPU CBE - PM/MS S - Program Management Office	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.275	Nov 2014	-		-		-		-	-	0.275	-		
Subtotal			0.000	1.478		1.450		1.600		-		1.600	-	4.528	-		
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals			0.000	14.311		16.508		17.192		-		17.192	-	48.011	-		
Remarks																	

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CM5 / <i>HOMELAND DEFENSE (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** CALS - Milestone B																												
CALS - Critical Design Review - (FC ACS, FC IS, TV IS)																												
CALS - Developmental Test - (FC ACS)																												
CALS - System Verification Review - (FC ACS)																												
CALS - Functional Configuration Audit (FC ACS)																												
CALS - Log Demo - (FC ACS)																												
CALS - Milestone C - (FC ACS)																												
CALS - Operation Test - (FC ACS)																												
CALS - Full Rate Production - (FC ACS)																												
CALS - Developmental Test - (FC IS)																												
CALS - Developmental Test - (TV IS)																												
CALS - System Verification Review - (FC IS, TV IS)																												
CALS - Functional Configuration Audit - (FC IS, TV IS)																												
CALS - Log Demo - (FC IS, TV IS)																												
CALS - Milestone C - (FC IS TV IS)																												
CALS - Operational Test - (FC IS, TV IS)																												
CALS - Full Rate Production - (FC IS, TV IS)																												
** SPU CBE - Conduct Evaluation of System Capabilities																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CM5 / <i>HOMELAND DEFENSE (EMD)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** CALS - Milestone B	2	2015	2	2015
CALS - Critical Design Review - (FC ACS, FC IS, TV IS)	3	2015	3	2015
CALS - Developmental Test - (FC ACS)	2	2015	3	2016
CALS - System Verification Review - (FC ACS)	2	2016	2	2016
CALS - Functional Configuration Audit (FC ACS)	2	2016	2	2016
CALS - Log Demo - (FC ACS)	3	2016	3	2016
CALS - Milestone C - (FC ACS)	1	2017	1	2017
CALS - Operation Test - (FC ACS)	3	2017	4	2017
CALS - Full Rate Production - (FC ACS)	2	2018	4	2020
CALS - Developmental Test - (FC IS)	2	2016	1	2017
CALS - Developmental Test - (TV IS)	3	2016	2	2017
CALS - System Verification Review - (FC IS, TV IS)	3	2017	3	2017
CALS - Functional Configuration Audit - (FC IS, TV IS)	3	2017	3	2017
CALS - Log Demo - (FC IS, TV IS)	3	2017	3	2017
CALS - Milestone C - (FC IS TV IS)	1	2018	1	2018
CALS - Operational Test - (FC IS, TV IS)	3	2018	4	2018
CALS - Full Rate Production - (FC IS, TV IS)	2	2019	4	2020
** SPU CBE - Conduct Evaluation of System Capabilities	3	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) CO5 / COLLECTIVE PROTECTION (EMD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
CO5: COLLECTIVE PROTECTION (EMD)	-	13.148	4.670	7.361	-	7.361	-	-	-	-	-	25.179
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

The system included in this project is the Joint Expeditionary Collective Protection (JECp).

JECp provides the Joint Expeditionary Forces a CP capability which is lightweight, compact, modular, and affordable. A family of systems is planned that will allow the application of CP to transportable soft-side shelters, enclosed spaces of opportunity, and in remote austere locations as a standalone resource. JECp will be capable of protecting personnel groups of varying size, unencumbered by Individual Protective Equipment (IPE), from the effects of CB agents, Toxic Industrial Materials (TIMs), radiological particles, heat, dust, and sand. The employment of JECp is a strategic deterrence against enemy use of CBR agents or TIMs, and will reduce the need for personnel and equipment decontamination.

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

	FY 2014	FY 2015	FY 2016
Title: 1) JECp - System Development and Demonstration	0.213	-	-
FY 2014 Accomplishments: Developed logistic products for the Family of Systems (FoS). Created design changes to the FoS to address failures from developmental testing (DT) and observations from the operational assessment.			
Title: 2) JECp - Low Rate Initial Production (LRIP)	9.751	3.045	4.842
FY 2014 Accomplishments: Manufactured additional LRIP systems, 3 tent kits at approximately \$69,000 each, 2 improved structure kits at approximately \$64,000 each, 3 standalone larges at approximately \$185,000 each, 4 single person airlocks at approximately \$34,000 each, and 3 multi-person airlocks at approximately \$65,000 each. Estimated total FY14 cost of LRIP systems is \$1,221,000 million. Refined logistic products for the family of systems. Conducted technical manual validation for the family of systems. Supported			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) CO5 / COLLECTIVE PROTECTION (EMD)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Government led production verification testing. Developed and manufactured 4 prototype passive systems at \$55,000 each. Continued development of the level III drawing package, technical data package, technical manuals, training package and other required logistic support products. FY 2015 Plans: Continue to develop level III drawing package, technical data package, technical manuals, training package and other required logistic support products. FY 2016 Plans: Finalize technical manuals, training package and all logistic support products in preparation for Full Rate Production (FRP)/ material release decision. Finalize level III drawing package. Conduct physical configuration audit and FRP manufacturing readiness assessment. Prepare for FRP.				
Title: 3) JECP - Developmental and Operational Testing FY 2014 Accomplishments: Conducted prototype/regression testing on any design changes resulting from failures during DT or observations from the Operational Assessment (OA). Conducted Government system level DT on LRIP systems including Collective Protection (CP) verification, entry/exit, post-field CP verification and a Reliability, Availability and Maintainability events in littoral and desert environments. FY 2015 Plans: Conduct a combined DT/ MOT&E I field chemical simulant challenge event on LRIP systems. Complete Government system level DT on LRIP systems. Conduct Logistics Demonstration. FY 2016 Plans: Conduct MOT&E II without a field chemical simulant challenge to test the operational capabilities of the system to support service specific missions.		3.184	1.572	2.519
Title: 4) SBIR/STTR FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.		-	0.053	-
Accomplishments/Planned Programs Subtotals		13.148	4.670	7.361

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015	
Appropriation/Budget Activity 0400 / 5				R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>				Project (Number/Name) CO5 / <i>COLLECTIVE PROTECTION (EMD)</i>			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• JP1111: <i>JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)</i>	4.000	15.898	5.864	-	5.864	14.381	14.037	26.020	25.418	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
JOINT EXPEDITIONARY COLLECTIVE PROTECTION (JECP)											
<p>Strategy based on evolutionary development, based on a family of systems approach. After MS B, awarded competitive Cost Plus Incentive Fee (CPIF) contract to Science Applications International Corporation (now Leidos) in 2008 to build prototypes subjected to robust engineering developmental testing and Operational Assessment during the System Development and Demonstration (SDD) phase. After MS C, awarded a Firm Fixed Price (FFP) option to Leidos in September 2013 for Low Rate Initial Production (LRIP) systems to support formal Developmental Testing (DT) and Multi-Service Operational Test & Evaluation (MOT&E) events. In addition, a Fixed Price Incentive Successive Target (FPIS) option was awarded to Leidos in January 2014 to perform non-recurring engineering (NRE) and logistic product development associated with the LRIP system configurations. Following a successful Full Rate Production (FRP) decision, award a FFP option with five one-year ordering periods. Full and open competition will be used with an updated system performance specification to award follow-on production contracts.</p>											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) CO5 / COLLECTIVE PROTECTION (EMD)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JECP - HW S - Prototype Development	C/CPIF	Leidos : Abingdon, MD	6.201	0.213	Dec 2013	-		-		-		-	-	6.414	-
HW S - Production Representative System	C/FPIF	Leidos : Abingdon, MD	4.911	2.577	Dec 2013	-		-		-		-	-	7.488	-
HW S - Non-recurring Engineering	C/FFP	Leidos : Abingdon, MD	0.000	1.834	Dec 2013	0.600	Nov 2014	1.049	Nov 2015	-		1.049	-	3.483	-
Subtotal			11.112	4.624		0.600		1.049		-		1.049	-	17.385	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JECP - ES S - Systems Engineering Oversight	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	0.000	0.681	Dec 2013	0.296	Nov 2014	0.742	Dec 2015	-		0.742	-	1.719	-
JECP - ES S - Systems Engineering IPT	MIPR	Various :	5.256	0.844	Dec 2013	0.402	Dec 2014	0.796	Dec 2015	-		0.796	-	7.298	-
JECP - ILS S - Integrated Logistics IPT	MIPR	Various :	2.783	1.036	Dec 2013	0.708	Dec 2014	0.599	Dec 2015	-		0.599	-	5.126	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.053		-		-		-	-	0.053	-
Subtotal			8.039	2.561		1.459		2.137		-		2.137	-	14.196	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JECP - OTHT SB - Test & Evaluation IPT	MIPR	Various :	5.785	0.501	Dec 2013	0.525	Nov 2014	0.584	Dec 2015	-		0.584	-	7.395	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)						Project (Number/Name) CO5 / COLLECTIVE PROTECTION (EMD)			
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
JECP - DTE S - Low Rate Initial Production Units Production Verification Testing	MIPR	Various :	0.110	2.280	Jan 2014	0.547	Dec 2014	-		-		-	-	2.937	-
JECP - OTE S - Low Rate Initial Production Multi-Service Operational Testing	MIPR	Various :	0.000	0.403	Jan 2014	0.500	Dec 2014	1.935	Dec 2015	-		1.935	-	2.838	-
Subtotal			5.895	3.184		1.572		2.519		-		2.519	-	13.170	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JECP - PM/MS S - Program Management Support	MIPR	Various :	5.545	2.779	Mar 2014	1.039	Dec 2014	1.656	Dec 2015	-		1.656	-	11.019	-
Subtotal			5.545	2.779		1.039		1.656		-		1.656	-	11.019	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			30.591	13.148		4.670		7.361		-		7.361	-	55.770	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CO5 / <i>COLLECTIVE PROTECTION (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** JECP - Production Verification Testing (PVT)																												
JECP - Multi-service Operational Test and Evaluation I																												
JECP - Multi-service Operational Test and Evaluation II																												
JECP - Full Rate Production Decision Review																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) CO5 / <i>COLLECTIVE PROTECTION (EMD)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JECP - Production Verification Testing (PVT)	3	2014	3	2015
JECP - Multi-service Operational Test and Evaluation I	3	2015	3	2015
JECP - Multi-service Operational Test and Evaluation II	2	2016	2	2016
JECP - Full Rate Production Decision Review	1	2017	1	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) DE5 / DECONTAMINATION SYSTEMS (EMD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DE5: DECONTAMINATION SYSTEMS (EMD)	-	7.519	11.146	16.744	-	16.744	15.854	18.871	7.609	6.676	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides System Development and Demonstration (SDD) for: (1) the Contaminated Human Remains Pouch (CHRP); (2) the Decontamination Family of Systems (DFoS); (3) Contamination Indicator Decontamination Assurance System (CIDAS); (4) General Purpose Decontaminant (GPD); (5) Joint Service Equipment Wipe (JSEW); (6) Joint Biological Aircraft Decontamination (JBAD) System; and (7) Major Defense Acquisition Program (MDAP). Experimentation and demonstration will be used in this phase to reduce risk and inform supporting materiel solutions, CONOPS and TTPs.

The Contaminated Human Remains Pouch (CHRP) program will provide the capability to protect personnel handling and processing human remains contaminated with Chemical, Biological, Radiological, or Nuclear (CBRN) contamination. The CHRP is a body bag designed to contain chemical, biological, or radiological contaminated fluids and gasses from contaminated remains. The CHRP will fulfill gaps as described in the Mortuary Affairs (MA) Initial Capabilities Document (ICD) for safe intra-theater handling and transport of contaminated human remains (CHR). The CHRP will provide protection by containing CHR during recovery and transport from the point of fatality to the MA Activity. The CHRP will contain fluid and vapor CBRN hazards associated with the CHR to reduce the spread of contamination and reduce the hazard to personnel handling the CHR and the environment. Successful development and procurement of the CHRP will provide Warfighters with the capability to safely handle, transport, and temporarily store or inter CHR in a theater of operations.

The Decontamination Family of Systems (DFoS) program facilitates the rapid transition of mature Science and Technology (S&T) research developments to existing Decontamination or Contamination Mitigation ICD Programs of Record and guides S&T community efforts toward meeting the needs of the Warfighter. DFoS will develop a Family of Systems (FoS), to include equipment, to improve decontamination processes, and decontaminant solutions to meet the capability gaps for decontaminating Non-Traditional Agents (NTA) and chemical and biological (CB) warfare agents from personnel, equipment, vehicle interiors/exterior, terrain, and fixed facilities.

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

General Purpose Decontaminant (GPD) is a liquid decontaminant that will provide thorough decontamination capabilities for tactical vehicles, shipboard surfaces, crew-served weapons, and individual/personal weapons in hostile and non-hostile environments that have been exposed to traditional and non-traditional CB contamination.

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 5		R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) DE5 / DECONTAMINATION SYSTEMS (EMD)		
The Joint Service Equipment Wipe (JSEW) is a decontamination wipe that will provide immediate/operational decontamination capabilities for sensitive and non-sensitive equipment in hostile and non-hostile environments that have been exposed to chemical agents/contamination and shall decontaminate Nerve and Blister agents from a starting liquid challenge of 10 g/m2 to less than or equal to 1 g/m2 and non-traditional agents from a starting liquid challenge of 5 g/m2 to less than or equal to 1 g/m2. In addition, the JSEW is intended to be a replacement for the Individual Equipment Decontamination Kit (M295). Follow on increments of JSEW may include biological agent capability and/or use on skin.					
The F-35 Joint Strike Fighter (JSF) Decontamination System MDAP project will develop an integrated decontamination containment system and decontaminant delivery system to support the JSF Live Fire Test and Evaluation (LFT&E) to satisfy specific F-35 decontamination requirements through aircraft-unique interfaces and demonstrate the aircraft's ability to meet CB decontamination and survivability requirements.					
The JBAD System will provide thorough biological decontamination of the interior and exterior of tactical and cargo aircraft. The JBAD System 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.					
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Title: 1) CHRP			4.376	-	-
FY 2014 Accomplishments: Conducted Developmental and Operational testing to support Capabilities Production Document (CPD). Designed and tested a CHRP transfer case variant to support the development of a capabilities and limitations report.					
Title: 2) MDAP Support JSF DECON SYSTEM			3.143	-	-
FY 2014 Accomplishments: Completed development, integration and technical support for the Joint Strike Fighter (JSF) Decontamination Sub-assemblies and conducted the System Functionality Demonstration. Performed system modifications and refurbishments and conducted a Limited Demonstration. Completed additional system modifications, integration and technical support in support of the JSF Decontamination System Integration Demonstration.					
Title: 3) MDAP Support JSF DECON SYSTEM			-	1.675	0.394
FY 2015 Plans: Conduct Joint Strike Fighter (JSF) Decontamination System Integration Demonstration and System modification and refurbishment in support of JSF Program Office Live Fire Test and Evaluation (LFT&E).					
FY 2016 Plans: Provide engineering and technical support to the JSF Program Office Live Fire Test and Evaluation (LFT&E).					
Title: 4) CIDAS			-	2.221	5.384

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 5		R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
FY 2015 Plans: Build large scale applicators for Developmental Testing (DT). Initiate DT to include indication level, decontaminant compatibility, detector compatibility, reliability, and natural environments testing. Conduct Preliminary and Critical Design Reviews.					
FY 2016 Plans: Continue DT to include indication level, decontaminant compatibility, detector compatibility, equipment compatibility, IPE compatibility, electromagnetic interference, coverage area, natural environmental factors, packaging, and limited shelf life testing. Conduct an Operational Assessment and Technical Manual Validation.					
Title: 5) CIDAS FY 2015 Plans: Award EMD contract to purchase 50 CIDAS test assets (25 small scale at \$1,000 each; 25 mid scale at \$1,000 each; 250 gallons of indicator at \$236 per gallon) for DT, engineering support for detailed designs and engineering changes, readiness assessments, technical reviews, training, test support, and development of integrated product support deliverables.			-	0.853	1.332
FY 2016 Plans: Purchase 800 CIDAS test assets (523 small scale applicators at approximately \$381 each; 15 mid scale applicators at \$2,885 each and 10 large scale applicators at \$6,300 each; 126 mid scale indicator kits at approximately \$922 each; and 126 large scale indicator kits at \$1844) for DT; fund engineering support for engineering changes, training, test support and development of integrated product support deliverables.					
Title: 6) GPD FY 2015 Plans: Conduct and complete the final phase of Developmental Testing (DT) to include the Technology Readiness Assessment (TRA), Manufacturing Readiness Assessment (MRA), Joint Integrated Logistics Assessment (JILA), System Verification Review (SVR), Production Readiness Review (PRR), and Logistics Demonstration.			-	3.792	2.434
FY 2016 Plans: Initiate and complete Operational Testing (to include MOT&E reporting, Log Demo & First Article Test), conduct and complete second phase of Joint Independent Logistics Assessment (JILA).					
Title: 7) GPD FY 2015 Plans:			-	0.500	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program									Date: February 2015		
Appropriation/Budget Activity 0400 / 5				R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) DE5 / DECONTAMINATION SYSTEMS (EMD)			
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016
Award base contract to purchase 10,000 gallons of GPD test assets (at \$30 per gallon) and data item deliverables for Multi-Service Operational Test and Evaluation (MOT&E).											
Title: 8) JSEW FY 2015 Plans: Complete DT; conduct and complete Joint Integrated Logistics Assessment (JILA), System Verification Review (SVR), Production Readiness Review (PRR); and initiate Multi-Service Operational Test and Evaluation (MOT&E).									-	1.747	-
Title: 9) JSEW FY 2015 Plans: Award contract option to purchase 960 JSEW test assets (at \$17 each) and data item deliverables for Multi-Service Operational Test and Evaluation (MOT&E), First Article Test (FAT), and Logistics Demonstration.									-	0.200	-
Title: 10) JBAD FY 2016 Plans: Award EMD Contract for DT assets (2 vendors, 2 systems from each vendor at approximately \$1,200,000 each).									-	-	4.824
Title: 11) JBAD FY 2016 Plans: Initiate developmental testing (DT) to include efficacy and compatibility testing.									-	-	2.376
Title: 12) SBIR/STTR FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.									-	0.158	-
Accomplishments/Planned Programs Subtotals									7.519	11.146	16.744
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• JD0050: DECONTAMINATION FAMILY OF SYSTEMS (DFoS)	-	3.450	7.254	-	7.254	10.037	12.621	20.817	15.874	Continuing	Continuing
• JD0063: CONTAMINATED HUMAN REMAINS POUCH (CHRP)	-	3.365	1.542	-	1.542	-	-	-	-	-	4.907
Remarks											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>
<p>D. Acquisition Strategy</p> <p>CONTAMINATED HUMAN REMAINS POUCH (CHRP)</p> <p>The CHRP Government design and manufacture acquisition strategy will leverage current Mortuary Affairs (MA) equipment, such as the Human Remains Pouch (HRP), to identify metrics and performance specifications necessary for the handling of non-contaminated human remains, and expand the performance to fill the identified capability gap for safe handling of contaminated human remains (CHR). CHRP will develop two Government designed systems to meet performance specifications and provide a fielded capability for safe intra-theater handling and transport of CHR. At MS C, an effective and suitable system will be chosen for entry into the Production and Deployment Phase from two candidate systems based on testing results and a cost-benefit analysis. Manufacturing and production will occur at Government facilities. The strategy includes an additional effort under a directed requirement to incorporate a CHRP variant into a system designed to provide a transport capability to return CHR to Continental United States (CONUS).</p> <p>The Government design strategy will emphasize meeting Key Performance Parameters (KPPs) using design attributes not offered by the commercial sector and materials with existing test data to provide Services two options at different cost and performance points. The CHRP will use EMD Phase testing to determine the capability of Government design candidates to meet the requirements outlined in the MA ICD and the CHRP CDD. At MS C, an effective and suitable system will be chosen for entry into the Production and Deployment Phase from two candidate systems based on testing results and a cost-benefit analysis with input from the user community.</p> <p>DECONTAMINATION FAMILY OF SYSTEMS (DFoS)</p> <p>The DFoS is utilizing an incremental acquisition strategy to transition various developmental technology efforts (Commercial-Off-The-Shelf (COTS), and DoD technology efforts) to meet high priority Warfighter capability gaps. DFoS will support Major Defense Acquisition Programs (MDAPs) and Programs of Record by guiding S&T efforts and transitioning mature technologies to meet program requirements.</p> <p>MAJOR DEFENSE ACQUISITION PROGRAM (MDAP)</p> <p>The JSF Decontamination System effort will utilize sole source contracting to leverage and integrate commercially available technologies to provide a decontamination delivery system for the Joint Strike Fighter program office in support of the JSF Live Fire Test and Evaluation (LFT&E).</p> <p>DFoS CONTAMINATION INDICATOR DECONTAMINATION ASSURANCE SYSTEM (DFoS CIDAS)</p> <p>The CIDAS program will follow an evolutionary acquisition strategy in consonance with the Joint Requirements Office (JRO)/User developed capability documents. Following MS A, collaborated with JSTO/DTRA 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 large scale applicator to</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>
<p>meet specific User requirements. Following MS B, use full and open competition to award a performance based contract with options for LRIP and FRP for indicator and small and mid scale applicator systems. Integrate and test contractor and Government designs in DT and operational testing.</p> <p>DFoS GENERAL PURPOSE DECONTAMINANT (DFoS GPD)</p> <p>Due to the maturity levels of the systems entering the Technology Development (TD) phase, the Milestone Decision Authority (MDA) issued an Acquisition Decision Memorandum (ADM) which approved GPD to by-pass Milestone (MS) B and enter directly to MS C Low Rate Initial Production (LRIP). During the TD Phase (which includes CP I, CP II), the GPD Program employed a Competitive Prototyping (CP) effort to facilitate the evaluation of Commercial Off The Shelf (COTS) technologies releasing an Request for Proposal (RFP) as a combined synopsis/solicitation for commercial and Non-Developmental Items (NDI), utilizing full and open competition. As the GPD program enters the final phase of Technology Development (Developmental Test), the program will continue to follow an evolutionary acquisition strategy. The production contract in support of MS C is a single award for LRIP with four option years for FRP, using Full and Open Competition in accordance with FAR Subpart 6.1. This strategy ensures that all prospective sources, with the capability of meeting the program requirements, have the opportunity to participate.</p> <p>DFoS JOINT SENSITIVE EQUIPMENT WIPE (DFoS JSEW)</p> <p>Due to the maturity levels of the systems entering the Technology Development (TD) phase, the Milestone Decision Authority (MDA) issued an Acquisition Decision Memorandum (ADM) which approved JSEW to pursue a Milestone (MS) A to MS C Low Rate Initial Production (LRIP) acquisition strategy. During the TD Phase (which includes CP I, CP II), the JSEW Program employed a Competitive Prototyping (CP) effort to facilitate the evaluation of Commercial Off The Shelf (COTS) technologies releasing an Request for Proposal (RFP) as a combined synopsis/solicitation for commercial and Non-Developmental Items (NDI), utilizing full and open competition. As the JSEW program enters the final phase of Technology Development (Developmental Test), the program will continue to follow an evolutionary acquisition strategy. The JSEW acquisition strategy to support upcoming JSEW contracting efforts for DT, LRIP, and FRP is a single contract award for DT, with options for LRIP and FRP, using Full and Open Competition in accordance with FAR Subpart 6.1. This strategy ensures that all prospective sources, with the capability of meeting the contract requirements, have the opportunity to participate.</p> <p>JOINT BIOLOGICAL AGENT DECONTAMINATION SYSTEM (JBAD)</p> <p>The JBAD System program will leverage the Joint Biological Agent Decontamination System Joint Capability Technology Demonstration to mature and deliver incremental capabilities to meet Air Mobility Command and US Transportation Command needs for interior and exterior decontamination of aircraft against biological agents. The JBAD will employ full and open competition and competitive prototyping during the Engineering Manufacturing and Development (EMD) phase.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) DE5 / DECONTAMINATION SYSTEMS (EMD)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CHRP - HW S - Design and Manufacture	MIPR	US Army Natick Soldier RD&E Center : Natick, MA	0.161	0.556	Dec 2013	-		-		-		-	Continuing	Continuing	-
** DFoS - HW SB - JSF Decontamination System Delivery System	SS/FFP	STERIS Corporation : Mentor, OH	0.319	0.478	Jun 2014	-		-		-		-	Continuing	Continuing	-
HW SB - JSF Decontamination System Shelter and Heater	SS/FFP	HDT Global : Fredericksburg, VA	0.418	0.505	Jun 2014	-		-		-		-	Continuing	Continuing	-
HW SB - JSF Decontamination System Liner	SS/FFP	Production Products Inc. : St Louis, MO	0.977	0.591	Jun 2014	-		-		-		-	Continuing	Continuing	-
** MDAP - HW SB - JSF Decontamination Delivery System	SS/FFP	STERIS Corporation : Mentor, OH	0.000	-		0.300	Jan 2015	-		-		-	Continuing	Continuing	-
HW SB - JSF Decontamination Shelter and Heater	SS/FFP	HDT Global : Fredericksburg, VA	0.000	-		0.332	Jan 2015	-		-		-	Continuing	Continuing	-
HW SB - JSF Decontamination System Liner #2	SS/FFP	Production Products Inc. : St Louis, MO	0.000	-		0.364	Jan 2015	-		-		-	Continuing	Continuing	-
** DFoS CIDAS - HW S - Test Assets	C/FPIF	TBD :	0.000	-		0.853	Feb 2015	0.757	Nov 2015	-		0.757	Continuing	Continuing	-
HW S - Large Scale Applicator	MIPR	TBD :	0.000	-		-		0.575	Nov 2015	-		0.575	Continuing	Continuing	-
** DFoS GPD - HW S - Test Assets	C/CPFF	TBD :	0.000	-		0.500	Apr 2015	-		-		-	Continuing	Continuing	-
** DFoS JSEW - HW S - Test Assets	C/FFP	TBD :	0.000	-		0.200	Dec 2014	-		-		-	Continuing	Continuing	-
** JBAD - HW S - Hardware and Engineering	C/FFP	TBD :	0.000	-		-		4.824	May 2016	-		4.824	Continuing	Continuing	-
Subtotal			1.875	2.130		2.549		6.156		-		6.156	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) DE5 / DECONTAMINATION SYSTEMS (EMD)
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Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CHRP - TD/D S - IPT and Technical Support	MIPR	Various :	0.353	0.811	Jan 2014	-		-		-		-	Continuing	Continuing	-
** DfOs - TD/D SB - IPT and Technical Support	MIPR	Various :	3.026	1.569	May 2014	-		-		-		-	Continuing	Continuing	-
** MDAP - TD/D SB - IPT and Technical Support	MIPR	Various :	0.000	-		0.334	Jan 2015	0.315	Oct 2015	-		0.315	Continuing	Continuing	-
** DfOs CIDAS - TD/D S - IPT and Technical Support	MIPR	Various :	0.000	-		0.730	Feb 2015	1.075	Nov 2015	-		1.075	Continuing	Continuing	-
** DfOs GPD - TD/D S - IPT and Technical Support	MIPR	Various :	0.000	-		0.778	Nov 2014	0.600	Oct 2015	-		0.600	Continuing	Continuing	-
** DfOs JSEW - TD/D S - IPT and Technical Support	MIPR	Various :	0.000	-		0.268	Nov 2014	-		-		-	Continuing	Continuing	-
** JBAD - TD/D S - IPT and Technical Support	MIPR	Various :	0.000	-		-		0.562	Apr 2016	-		0.562	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.158		-		-		-	Continuing	Continuing	-
Subtotal			3.379	2.380		2.268		2.552		-		2.552	-	-	-

Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CHRP - DTE S - Developmental and Operational Testing and Reporting	MIPR	Various :	0.000	2.686	Dec 2013	-		-		-		-	Continuing	Continuing	-
** DfOs CIDAS - DTE S - Live Agent / Lab Testing	MIPR	Various :	0.000	-		0.797	Feb 2015	2.949	Oct 2015	-		2.949	Continuing	Continuing	-
** DfOs GPD - OTE S - Operational Testing	MIPR	Various :	0.000	-		2.133	Nov 2014	1.305	Oct 2015	-		1.305	Continuing	Continuing	-
** DfOs JSEW - OTE S -	MIPR	Various :	0.000	-		1.080	Nov 2014	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>						Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>			
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JBAD - DTE S - Developmental Testing	MIPR	Various :	0.000	-		-		0.356	Aug 2016	-		0.356	Continuing	Continuing	-
Subtotal			0.000	2.686		4.010		4.610		-		4.610	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CHRP - PM/MS S - Program Management and Technical Support	MIPR	Various :	0.391	0.323	Sep 2014	-		-		-		-	Continuing	Continuing	-
** MDAP - PM/MS SB - Program Management and Technical Support	MIPR	Various :	0.000	-		0.345	Jan 2015	0.079	Oct 2015	-		0.079	Continuing	Continuing	-
** DFoS CIDAS - PM/MS S - Program Management and Technical Support	MIPR	Various :	0.000	-		0.694	Feb 2015	1.360	Oct 2015	-		1.360	Continuing	Continuing	-
** DFoS GPD - PM/MS S - Program Management and Technical Support	MIPR	Various :	0.000	-		0.881	Jan 2015	0.529	Oct 2015	-		0.529	Continuing	Continuing	-
** DFoS JSEW - PM/MS S - Program Management and Technical Support	MIPR	Various :	0.000	-		0.399	Jan 2015	-		-		-	Continuing	Continuing	-
** JBAD - PM/MS S - Program Management & Tech Support	MIPR	Various :	0.000	-		-		1.458	Apr 2016	-		1.458	Continuing	Continuing	-
Subtotal			0.391	0.323		2.319		3.426		-		3.426	-	-	-
Project Cost Totals			5.645	7.519		11.146		16.744		-		16.744	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program							Date: February 2015			
Appropriation/Budget Activity 0400 / 5			R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>			Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** CHRP - CDR																												
CHRP - DT																												
CHRP - OT																												
CHRP - CPD																												
CHRP - TEMP (MS C/FRP)																												
CHRP - MS C																												
CHRP - FRP																												
** MDAP - JSF Decontamination System Shelter and Liner Development, System Integration and System Functionality Demonstration																												
MDAP - JSF Decontamination System Shelter and Liner Modification, Repairs and Refurbishment and Limited Demonstration																												
MDAP - JSF Decontamination System Shelter and Liner Modification, Repairs and Refurbishment and System Integration Demonstration																												
MDAP - JSF LFT&E Support																												
** DFOS - CIDAS Technology Demonstrations																												
DFOS - CIDAS CDD																												
DFOS - CIDAS TEMP																												
DFOS - CIDAS MS B																												
DFOS - CIDAS PDR																												
DFOS - CIDAS CDR																												
DFOS - CIDAS DT																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 MS C/LRIP																												
DFOS - CIDAS LRIP Delivery																												
DFOS - CIDAS OT																												
DFOS - CIDAS FRP																												
DFOS - CPII Testing																												
DFOS - CDD																												
DFOS - System Requirements/Design Review																												
DFOS - TEMP																												
DFOS - Early User Evaluation (EUE)																												
DFOS - DT																												
DFOS - System Verification Review																												
DFOS - MRA Final Assessment																												
DFOS - CPD																												
DFOS - MS C/LRIP																												
DFOS - OT																												
DFOS - FRP																												
DFOS - IOC																												
DFOS - FOC																												
DFOS - CDD #2																												
DFOS - CPII Testing #2																												
DFOS - System Requirements/Design Review #2																												
DFOS - TEMP #2																												
DFOS - DT #2																												
DFOS - System Verification Review #2																												
DFOS - CPD #2																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 - MS C/LRIP #2																												
DFOS - OT #2																												
DFOS - FRP #2																												
DFOS - IOC #2																												
DFOS - FOC #2																												
** JBAD - IPR, Release RFP, Industry Day																												
JBAD - Limited DT																												
JBAD - Capability Development Document																												
JBAD - Request For Proposal Decision																												
JBAD - Release RFP																												
JBAD - MS B																												
JBAD - Contract Award																												
JBAD - DT																												
JBAD - Production Verification Testing																												
JBAD - CPD																												
JBAD - MS C/LRIP																												
JBAD - First Article/Production Qualification Testing																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** CHRP - CDR	2	2014	2	2014
CHRP - DT	2	2014	1	2015
CHRP - OT	3	2014	2	2015
CHRP - CPD	3	2014	2	2015
CHRP - TEMP (MS C/FRP)	2	2015	2	2015
CHRP - MS C	3	2015	3	2015
CHRP - FRP	3	2015	3	2017
** MDAP - JSF Decontamination System Shelter and Liner Development, System Integration and System Functionality Demonstration	1	2014	1	2014
MDAP - JSF Decontamination System Shelter and Liner Modification, Repairs and Refurbishment and Limited Demonstration	2	2014	4	2014
MDAP - JSF Decontamination System Shelter and Liner Modification, Repairs and Refurbishment and System Integration Demonstration	1	2015	4	2015
MDAP - JSF LFT&E Support	1	2016	4	2016
** DFOS - CIDAS Technology Demonstrations	1	2014	3	2014
DFOS - CIDAS CDD	4	2014	4	2014
DFOS - CIDAS TEMP	1	2015	1	2015
DFOS - CIDAS MS B	2	2015	2	2015
DFOS - CIDAS PDR	2	2015	2	2015
DFOS - CIDAS CDR	3	2015	3	2015
DFOS - CIDAS DT	4	2015	1	2017
DFOS - CIDAS MS C/LRIP	3	2017	3	2017
DFOS - CIDAS LRIP Delivery	4	2017	3	2018

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
DFOS - CIDAS OT	3	2018	4	2018
DFOS - CIDAS FRP	2	2019	2	2019
DFOS - CPII Testing	1	2014	2	2014
DFOS - CDD	3	2014	3	2014
DFOS - System Requirements/Design Review	4	2014	1	2015
DFOS - TEMP	4	2014	1	2015
DFOS - Early User Evaluation (EUE)	4	2014	1	2015
DFOS - DT	4	2014	3	2015
DFOS - System Verification Review	3	2015	3	2015
DFOS - MRA Final Assessment	3	2015	3	2015
DFOS - CPD	4	2015	4	2015
DFOS - MS C/LRIP	4	2015	4	2015
DFOS - OT	1	2016	2	2016
DFOS - FRP	4	2016	4	2016
DFOS - IOC	4	2017	4	2017
DFOS - FOC	2	2020	2	2020
DFOS - CDD #2	1	2014	1	2014
DFOS - CPII Testing #2	1	2014	2	2014
DFOS - System Requirements/Design Review #2	4	2014	1	2015
DFOS - TEMP #2	4	2014	1	2015
DFOS - DT #2	4	2014	2	2015
DFOS - System Verification Review #2	3	2015	3	2015
DFOS - CPD #2	4	2015	4	2015
DFOS - MS C/LRIP #2	4	2015	4	2015
DFOS - OT #2	4	2015	2	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) DE5 / <i>DECONTAMINATION SYSTEMS (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
DFOS - FRP #2	4	2016	4	2016
DFOS - IOC #2	3	2017	3	2017
DFOS - FOC #2	3	2019	3	2019
** JBAD - IPR, Release RFP, Industry Day	2	2015	3	2015
JBAD - Limited DT	2	2015	3	2015
JBAD - Capability Development Document	4	2015	4	2015
JBAD - Request For Proposal Decision	1	2016	1	2016
JBAD - Release RFP	2	2016	2	2016
JBAD - MS B	3	2016	3	2016
JBAD - Contract Award	3	2016	3	2016
JBAD - DT	4	2016	3	2017
JBAD - Production Verification Testing	2	2018	2	2019
JBAD - CPD	4	2019	4	2019
JBAD - MS C/LRIP	2	2020	2	2020
JBAD - First Article/Production Qualification Testing	4	2020	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) IP5 / INDIVIDUAL PROTECTION (EMD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
IP5: INDIVIDUAL PROTECTION (EMD)	-	24.989	15.435	19.439	-	19.439	14.262	11.524	11.610	1.799	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

Included in this program are:

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

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

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

The JSAM MPU-5 RW mask is being developed for use by pilots and aircrew in the majority of DoD RW aircraft in the United States Army (USA) except AH-64 users, USAF, USN, USMC, and United States Coast Guard (USCG). The JSAM RW will integrate with most BTN CB ensembles, normal aircrew flight equipment, and RW flight helmets. The system contains a removable face plate, allowing the user to fly "face free" in Mission Oriented Protective Posture (MOPP) 2 (garment and boots)

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>

and easily convert to MOPP 3 (garment, boots, and mask) when the threat level dictates, thereby reducing physiological burden and improving field of view. If threat level warrants, the user can install their face plate into an already donned hood and enter MOPP 4 without removing their flight helmet.

(2) The Joint Service General Purpose Mask (JSGPM) Advanced Respiratory Protection Initiative (ARPI) will address improved mask protection, filter protection against Toxic Industrial Chemicals (TIC)/Toxic Industrial Materials (TIM) and improved profile and breathing resistance; and wearability compatibility/integration. This will be accomplished through class-based analysis, Filtration Advanced Screening Test (FAST), desorption study, and advanced Chemical, Biological, Radiological, and Nuclear (CBRN) filtration efforts. Several technologies are being pursued by the Joint Science and Technology Office (JSTO), with two specific technologies being pursued in the FY14-16 timeframe. The JSGRPM ARPI effort will investigate alternative designs and modifications to ZZAT (Zirconium hydroxide, Zinc, Argentum (Silver), Triethylene di-amine (TEDA)) 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 APRI effort will also investigate various applications of nanofiber particulate media.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
Title: 1) JSAM SA FY 2016 Plans: Complete Design Verification Testing (DVT), including flight tests on the E-3 and P-3C aircraft. Conduct System Verification Review (SVR), Production Readiness Review (PRR), and Physical Configuration Audit (PCA). Initiate preliminary events leading to operational testing (OT), and initiate OT. Develop and finalize the Operational Test Agency (OTA) Milestone Assessment Report (OMAR), conduct the Logistics Demonstration, finalize the Technical Manual (TM) and complete the Joint Integrated Logistics Assessment (JILA).	-	-	5.690
Title: 2) JSAM TA FY 2016 Plans: Continue with comparative gate testing for the full and open contract and award contract to the JSAM TA selected vendor. Purchase 100 masks at an estimated unit cost of \$13,000.00 for use in Operational Tests (OT) and integration events. Conduct OT and integration events with JSAM TA platforms, and achieve Milestone C/Low Rate Initial Production decision.	-	-	6.110
Title: 3) JSAM JSF FY 2015 Plans: Complete Quantitative Fit Factor (QFF) testing, Simulant Agent Resistance Test Manikin (SMARTMAN) testing, Man in Simulant Test (MIST), Filter testing, Thermal Stress testing, and F-35 chemical/biological SDD flights. Conduct System Verification and	-	1.747	3.155

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) IP5 / INDIVIDUAL PROTECTION (EMD)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Production Readiness Reviews leading to a Low Rate Initial Production decision. Provide product development support to the JSF program office in support of the Chemical and Biological Live Fire Test and Evaluation (LFT&E).				
FY 2016 Plans: Conduct follow-on Developmental Testing (DT) and initiate LFT&E planning.				
Title: 4) JSAM SA FY 2014 Accomplishments: Drafted, staffed, and obtained approval for the Test and Evaluation Master Plan (TEMP) and Life Cycle Sustainment Plan (LCSP). Conducted a design review to close-out the preliminary design phase. Fabricated prototype tooling and built 85 Design Verification Testing (DVT) assets at a unit cost of \$1,900.00. Initiated DVT and continued early DT to verify a limited set of MM53 requirements. Completed Lifecycle Management Plan (LCMP), Systems Engineering Plan (SEP), Risk Management Plan (RMP), and System Safety Management Plan (SSMP). Conducted several studies using current Service aircrew to determine comfort levels and integration performance while wearing helmets and other equipment. Initiated the Joint Integrated Logistics Assessment (JILA) process and attained final approval of the JSAM Strategic Aircraft (SA) Critical Design Document (CDD). FY 2015 Plans: Complete DVT. Continue early DT and initiate system-level testing. Conduct the Critical Design Review (CDR) and Manufacturing Readiness Assessment (MRA), and complete the final design phase and Production Readiness Review (PRR). Initiate production tooling and build 265 assets (200 for DT and 65 for other users) at a unit cost of \$1,900.00 each. Complete draft Technical Manual.		5.775	5.142	-
Title: 5) JSAM RW FY 2014 Accomplishments: Continued airworthiness testing on US Army (USA), US Air Force (USAF), US Navy (USN), and US Marine Corps (USMC) aircraft platforms. Initiated developmental testing on USN/USMC helmet sighting systems and assessment of integration capabilities with Optimized Top Owl aircraft. Completed water survivability testing. Prepared documentation for LRIP contract award. Refurbished Production Qualification Test assets for use in USA and USAF Multi Service Operational Test and Evaluation (MOT&E). FY 2015 Plans: Conduct and complete MOT&E for USA and USAF. Initiate and complete USN aircraft integration testing. Continue airworthiness testing and obtain airworthiness releases for USA and USAF rotary wing aircraft. Conduct technical reviews in advance of Full Rate Production decision. Take receipt of the Technical Data Package. FY 2016 Plans:		5.965	2.000	4.484

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) IP5 / INDIVIDUAL PROTECTION (EMD)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Conduct and complete USN/USMC MOT&E and USN shipboard flight testing. Complete USN airworthiness testing and obtain airworthiness releases for the USN rotary wing aircraft.				
Title: 6) JSAM TA FY 2014 Accomplishments: Purchased 46 modified A/P22P-14(A)V3 test assets at \$12,346.00 each, completed flame resistance testing, and initiated Safe-to-Fly Certification activities for the F-22. Conducted performance envelope characterization, component level design review, released Request for Information (RFI) to industry, and received final approval of the JSAM Tactical Aircraft (TA) Capability Development Document (CDD). FY 2015 Plans: Continue testing the ECP respirator for both the USAF F-22 Readiness requirement and provide test data for risk reduction. Release Requests For Proposals (RFP) and conduct source selection. Purchase 50 assets from each vendor at an estimated unit cost of \$13,000.00 to conduct user evaluation and comparative gate testing. Initiate MS C decision preparation and documentation, and award production option to the JSAM TA selected candidate.		5.313	5.368	-
Title: 7) JSAM JSF FY 2014 Accomplishments: Conducted a CDR and CDR assessment, Test Readiness Review (TRR), JILA, initiated DT and conducted a Logistics Demonstration. Purchased 62 flight kits at a unit cost of \$12,654.00 and 21 ground kits at a unit cost of \$7,610.00.		5.258	-	-
Title: 8) JSGPM (ARPI) FY 2014 Accomplishments: Continued Bed Design Analysis for Cobalt-Zinc, zirconium hydroxide, Argentum (Silver), TEDA (triethylene diamine)(CoZZAT) technology. CoZZAT leverages an existing technology developed under a Defense Thread Reduction Agency (DTRA)/JSTO funded program with proven ability to outperform previous filtration capabilities in its power to remove traditional military blood and choking compounds, as well as acidic/acid-forming, toxic industrial chemicals (TIC) such as chlorine, hydrogen chlorine and sulfur dioxide. CoZZAT is a layered bed of carbon concept being developed to improve TIC and chemical warfare agent (CWA) protection capabilities. FY 2015 Plans: Continue and complete refinement of technical data and manufacturing process controls for the CoZZAT material.		2.036	0.992	-
Title: 9) JSGPM FY 2014 Accomplishments:		0.642	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 5				R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) IP5 / INDIVIDUAL PROTECTION (EMD)				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2014	FY 2015	FY 2016
Initiated National Institute for Occupational Safety and Health (NIOSH) certification for the M53 mask to create a M53A1. Awarded task order on prime contract to investigate ability of the M53 mask to obtain NIOSH certification for Full-Facepiece Air Purifying Respirators (APR) for use in Chemical, Biological, Radiological, and Nuclear (CBRN) agents.												
Title: 10) SBIR/STTR										-	0.186	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.												
Accomplishments/Planned Programs Subtotals										24.989	15.435	19.439
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost	
• JI0002: JS AIRCREW MASK (JSAM)	0.413	11.526	24.630	-	24.630	54.447	61.961	55.136	50.374	Continuing	Continuing	
• MA0401: CBRN UNIFORM INTEGRATED PROTECTION ENSEMBLE (UIPE)	15.772	6.948	11.101	-	11.101	11.101	11.101	14.000	16.000	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
JS AIRCREW MASK FIXED WING (JSAM FW)												
The overall JSAM acquisition approach is phased due to the complexity of interfacing with almost 200 aircraft types and models with different mission sets, Aviation Life Support Equipment (ALSE), cockpit layouts, priorities, etc. JSAM will pursue two materiel solutions for fixed wing aircraft via; the JSAM for Tactical Aircraft (TA) and JSAM for Strategic Aircraft (SA) programs. JSAM TA and SA must be compatible with current CB ensembles and provide flame protection and will replace all existing Pressure Breathing for Gravity (PBG) and non-PBG CB aircrew respirators. The JSAM TA (A/P22P-14A) utilizes a phased acquisition strategy to provide aircrew of all Services with individual head-eye-respiratory protection against Chemical-Biological (CB) warfare agents. The JSAM TA effort will test the Pressure Breathing for Gravity (PBG) Mask to aircraft platforms. The JSAM SA (Modified M53 (MM53)) effort will test and field a mask for aircrew positions not requiring PBG capabilities. This contract was awarded via sole source to Avon Protection Systems, Cadillac, Michigan to modify and field a commercially available mask (M53).												
JS AIRCREW MASK ROTARY WING (JSAM RW)												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>
<p>The respirator is being developed under a competitive Cost Plus Fixed Fee contract, which is also used by JSAM Apache and Apache Block III. A sole source Fixed Price Indefinite Delivery/Indefinite Quantity (IDIQ) will be awarded for LRIP and will include options for spare parts, Full Rate Production, and Apache Block III upgrades.</p> <p>JS AIRCREW MASK FIXED WING STRATEGIC AIRCRAFT (JSAM SA)</p> <p>The JSAM SA acquisition approach involves modifying the fielded M53 ground mask design in order to add Pressure Breathing for Altitude (PBA), up to 40,000 feet above sea-level, and middle ear equalization capabilities. The JSAM SA mask is intended to be fielded to the United States Air Force (USAF), United States Navy (USN), United States Marine Corps (USMC), United States Army (USA), and United States Coast Guard (USCG).</p> <p>The overall acquisition strategy is to initially produce and field the JSAM SA masks in four LRIP phases. This phased approach will allow the JSAM SA mask to be fielded to aircrew of the most applicable aircrafts in the shortest amount of time. At the end of each LRIP phase, the aircraft associated with each phase will have achieved an Initial Operating Capability (IOC) with the JSAM SA mask. The remaining aircrew, not given a JSAM SA mask during the LRIP phases, will receive their masks after FRP. At the end of FRP, the Services will have achieved their Full Operating Capability (FOC) with the mask. LRIP 1 will consist of fielding the JSAM SA mask to most of the USAF E-3 and USN P-3C aircrew. Based on technical difficulty and mission need, the JSAM SA program will work with the Services to determine which LRIP phase (i.e. 2, 3, or 4) will include the remaining aircraft.</p> <p>The overall test strategy involves four major phases. The first test phase consists of Design Verification Testing (DVT) which will evaluate developmental prototype masks prior to CDR. The second test phase is Developmental Testing (DT) to support Milestone C/LRIP. The third test phase is Operational Testing (OT) of LRIP assets to support IOC fielding to USAF E-3 and USN P-3C aircrew. The final test phase is combined DT/OT for the LRIPs 2, 3, and 4.</p> <p>The contract strategy consists of two sole-source contracts with Avon Protection Systems, the manufacturer of the base M53 mask. The first contract, which was awarded on 31 July 2013, covers all activities during Engineering, Manufacturing, and Development (EMD) phase. The second contract, which is planned to be awarded after Milestone C/LRIP, will cover the activities during the Production and Deployment (PD) phase including all LRIP and FRP builds.</p> <p>JS AIRCREW MASK FIXED WING TACTICAL AIRCRAFT (JSAM TA)</p> <p>The JSAM TA planned solution for the USAF F-22 Readiness requirement is an integration effort and an Engineering Change Proposal (ECP) to the Navy's A/P22P-14(A). The ECP will provide CB-protection capability to F-22 pilots while providing valuable test data to be used to evaluate potential candidates for the JSMA TA solution. The JSAM TA program plans to pursue a full-and-open competition for the production contract to cover Low Rate Initial Production (LRIP) and Full Rate Production (FRP). Comparative gate testing will be conducted to support the source selection process for the full and open competition. The Government plans to competitively award one, Firm Fixed Price (FFP) Incentive contract with an option for production. Subsequent integration efforts will be completed for each aircraft platform.</p> <p>JS AIRCREW MASK JOINT STRIKE FIGHTER (JSAM JSF)</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>
<p>JSAM-JSF is specifically designed for the F-35 (Joint Strike Fighter) to be incorporated within the JSF platform and fielded to US Services and international partners. JSAM-JSF is being developed concurrently with other JSF equipment including life support and pilot flight equipment. JSAM-JSF initially leveraged a JSAM-FW design and shared the same base contract with a Cost Plus Incentive Fee delivery order.</p> <p>JS GENERAL PURPOSE MASK (JSGPM)</p> <p>The JSGPM Advanced Respiratory Protection Initiative (ARPI) effort is using the M61 filter contracts awarded to 3M and Avon to develop improved filters for the JSGPM. There is a continual technology refreshment CLIN that allows for filter development tasks to be awarded under this contract. The tasks can be competed between the two awardees or award 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. There are multiple technologies being explored by DTRA, thus, this is a continual product improvement effort to enhance filtration. The JSGPM ARPI effort will investigate alternative designs and modifications to ZZAT (Zirconium hydroxide, Zinc, Argentum (Silver), Triethylene di-amine (TEDA)) 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.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>						Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>			
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSAM - HW S - JSAM-JSF Engineering and Manufacturing Contract	C/CPIF	GENTEX Corp. : Rancho Cucamonga, CA	0.000	-		0.300	Dec 2014	0.530	Jan 2016	-		0.530	Continuing	Continuing	-
HW S - JSAM SA Modified M53 - Design Modification and Development	SS/CPFF	AVON Protection Systems Inc. : Cadillac, MI	0.000	-		-		0.075	Aug 2016	-		0.075	Continuing	Continuing	-
JSAM RW - HW S - MBU-5 Engineering and Manufacturing Contract	C/CPFF	AVOX Systems Inc. : Lancaster, NY	2.278	1.452	Jan 2014	-		-		-		-	Continuing	Continuing	-
JSAM SA - HW S - Modified M53 - Design Modification and Development	SS/CPFF	AVON Protection Systems Inc. : Cadillac, MI	2.389	2.504	Feb 2014	0.624	Jan 2015	-		-		-	Continuing	Continuing	-
JSAM TA - HW C - AP22P-14(A) - Mask/Respirators/System Components	SS/FFP	Cam Lock Limited : Aldershot Hampshire, UK	0.322	1.661	Jun 2014	-		-		-		-	Continuing	Continuing	-
JSAM TA - HW S - Vendor A - Candidate 1	C/FPIF	TBD :	0.000	-		0.650	Jun 2015	-		-		-	Continuing	Continuing	-
JSAM TA - HW S - Vendor B - Candidate 2	C/FPIF	TBD :	0.000	-		0.650	Jun 2015	-		-		-	Continuing	Continuing	-
JSAM-JSF - HW S - Engineering and Manufacturing Contract	C/CPIF	GENTEX Corp. : Rancho Cucamonga, CA	2.768	3.100	Jan 2014	-		-		-		-	Continuing	Continuing	-
JSAM TA - HW S - Mask	C/FPIF	TBD :	0.000	-		-		1.300	Jan 2016	-		1.300	Continuing	Continuing	-
** JSGPM - HW C - NIOSH Certification	C/FFP	AVON Protection Systems Inc. : Cadillac, MI	0.000	0.642	Jul 2014	-		-		-		-	Continuing	Continuing	-
HW C - ZZAT Filters	C/CPFF	3M Canada : Brockville Ontario, CN	0.000	0.331	Aug 2014	-		-		-		-	Continuing	Continuing	-
Subtotal			7.757	9.690		2.224		1.905		-		1.905	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) IP5 / INDIVIDUAL PROTECTION (EMD)					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSAM - JSAM RW - ES S - MBU-5 Integrated Product Team/ Engineering/Technical Support	MIPR	Various :	1.526	2.376	Mar 2014	0.130	Dec 2014	0.681	Dec 2015	-		0.681	Continuing	Continuing	-
JSAM TA - ES S - Engineering Support	MIPR	Various :	0.000	-		-		1.350	Nov 2015	-		1.350	Continuing	Continuing	-
ES S - JSAM-JSF Engineering Support	MIPR	Various :	0.000	-		0.906	Jan 2015	0.800	Jan 2016	-		0.800	Continuing	Continuing	-
JSAM SA - ES S -MM53 - Engineering and IPT Support	MIPR	Various :	1.712	2.262	Jan 2014	2.084	Jan 2015	-		-		-	Continuing	Continuing	-
JSAM SA - TD/D S - Logistics Demonstration	MIPR	Various :	0.000	-		-		0.150	Oct 2015	-		0.150	Continuing	Continuing	-
JSAM TA - ES S - Engineering Support #2	MIPR	Various :	1.401	2.253	Feb 2014	0.914	Jan 2015	-		-		-	Continuing	Continuing	-
JSAM SA - ES S - Engineering and IPT Support	MIPR	Various :	0.000	-		-		2.269	Jan 2016	-		2.269	Continuing	Continuing	-
JSAM-JSF - ES S - Engineering Support	MIPR	Various :	0.901	1.285	Jan 2014	-		-		-		-	Continuing	Continuing	-
JSAM-JSF - ES S - USAF Technical/Engineering Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.100	Jun 2014	-		-		-		-	Continuing	Continuing	-
** JSGPM - TD/D SB - JSGPM Filter	MIPR	Various :	0.677	0.609	Dec 2013	0.317	Jan 2015	-		-		-	Continuing	Continuing	-
ES C - Filter	MIPR	Naval Research Lab (NRL) : Washington, DC	0.350	-		0.050	Jan 2015	-		-		-	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR- SBIR/STTR	PO	TBD :	0.000	-		0.186		-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>						Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			6.567	8.885		4.587		5.250		-		5.250	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSAM - JSAM RW - DTE S - MBU-5 Developmental Test and Evaluation	MIPR	Various :	2.134	1.614	Feb 2014	-		-		-		-	Continuing	Continuing	-
JSAM TA - OTHT C - Operational Testing and Integration	MIPR	Various :	0.000	-		-		2.700	Oct 2015	-		2.700	Continuing	Continuing	-
JSAM RW - OTE S - MOT&E	MIPR	Various :	0.000	-		1.582	Dec 2014	1.848	Dec 2015	-		1.848	Continuing	Continuing	-
JSAM SA - DTE S - MM53 - Developmental Testing	MIPR	Various :	0.034	1.010	Jan 2014	1.902	Jan 2015	-		-		-	Continuing	Continuing	-
JSAM SA - OTE S - Operational Testing	MIPR	Various :	0.000	-		-		1.375	Oct 2015	-		1.375	Continuing	Continuing	-
JSAM SA - DTE S - Developmental Testing	MIPR	Various :	0.000	-		-		0.669	Oct 2015	-		0.669	Continuing	Continuing	-
JSAM TA - DTE S - AP22P-14(A) - Developmental Testing	MIPR	Various :	0.152	1.157	Feb 2014	2.544	Jan 2015	-		-		-	Continuing	Continuing	-
JSAM JSF - OTE S - LFT&E	MIPR	Various :	0.000	-		0.200	Jan 2015	0.622	Jan 2016	-		0.622	Continuing	Continuing	-
JSAM JSF - DTE S - Follow-On DT	MIPR	Various :	0.000	-		-		0.200	Jan 2016	-		0.200	Continuing	Continuing	-
JSAM-JSF - DTE S - Developmental Testing	MIPR	Various :	0.607	0.772	Jan 2014	-		-		-		-	Continuing	Continuing	-
** JSGPM - DTE SB - JSGPM Filter Testing	MIPR	Various :	2.906	0.690	Dec 2013	0.433	Jan 2015	-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>						Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>			
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			5.833	5.243		6.661		7.414		-		7.414	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSAM - JSAM JSF - PM/MS C - Program Management and Technical Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	-		0.341	Jan 2015	1.003	Jan 2016	-		1.003	Continuing	Continuing	-
JSAM SA - PM/MS C - JSAM MM53 - Program Management and Technical Support	Various	Various :	0.210	-		0.921	Dec 2014	-		-		-	Continuing	Continuing	-
JSAM RW - PM/MS C - MBU-5 Program Management and Technical Support	Various	Various :	0.976	0.523	Mar 2014	0.288	Dec 2014	1.955	Dec 2015	-		1.955	Continuing	Continuing	-
JSAM TA - PM/MS S - Program and Technical Management	MIPR	Various :	0.000	-		-		0.760	Nov 2016	-		0.760	Continuing	Continuing	-
JSAM SA - PM/MS S - Program Management and Technical Support Services	MIPR	Various :	0.000	-		-		1.152	Jan 2016	-		1.152	Continuing	Continuing	-
JSAM TA - PM/MS C - JSAM AP22P-14(A) - Program Management and Technical Support	Various	Various :	0.733	0.242	Mar 2014	0.221	Dec 2015	-		-		-	Continuing	Continuing	-
** JSGPM - PM/MS C - Program Management and Technical Support	MIPR	Various :	0.650	0.406	Mar 2014	0.192	Jan 2015	-		-		-	Continuing	Continuing	-
Subtotal			2.569	1.171		1.963		4.870		-		4.870	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program											Date: February 2015			
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)					Project (Number/Name) IP5 / INDIVIDUAL PROTECTION (EMD)				
		Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		22.726	24.989		15.435		19.439		-		19.439	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** JSAM - Capability Development Document																												
JSAM - JSAM RW - Production Qualification Testing																												
JSAM - JSAM JSF Design Verification Testing																												
JSAM - JSAM TA - Safe to Fly Certification																												
JSAM - Critical Design Review (CDR)																												
JSAM - JSAM SA - MM53 Developmental Testing																												
JSAM - JSAM TA - Full and Open Comparative Gate Testing																												
JSAM - JSAM RW - USA/USAF Airworthiness Testing																												
JSAM - JSAM SA - MS C / Low Rate Initial Production																												
JSAM - JSAM TA - Aircraft Platform Integration/Operational Testing																												
JSAM - Test Readiness Review																												
JSAM - JSAM TA - AP22P(A) ECP Integration																												
JSAM - Developmental Testing																												
JSAM - JSAM RW - MS C/ Low Rate Initial Production (LRIP)																												
JSAM - JSAM SA - Operational Testing																												
JSAM - JSAM TA - MS C - Low Rate Initial Production (LRIP)																												
JSAM - JSAM SA - Initial Operational Capability																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
JSAM - JSAM RW - Multi Service Operational Test and Evaluation (MOT&E) USA/USAF																												
JSAM - JSAM TA - AP22P(A) Safe to Fly Certification																												
JSAM - LRIP Decision																												
JSAM - JSAM SA - LRIP 1																												
JSAM - LRIP Support																												
JSAM - JSAM RW - Multi Service Operational Test and Evaluation (MOT&E) USN/USMC																												
JSAM - Chemical and Biological (CB) Live Fire Test and Evaluation (LFTE)																												
JSAM - JSAM SA - LRIP 2																												
JSAM - JSAM TA - Initial Operational Capability																												
JSAM - JSAM SA - LRIP 3																												
JSAM - Safe-to-Fly Certification																												
JSAM - JSAM RW - USA IOC																												
JSAM - JSAM TA - Full Rate Production (FRP)																												
JSAM - JSAM RW - USAF IOC																												
JSAM - JSAM SA - LRIP 4																												
JSAM - JSAM RW - USN/USMC IOC																												
JSAM - JSAM SA - MS C / Full Rate Production																												
JSAM - JSAM RW - Full Rate Production (FRP)																												
JSAM - JSAM SA - MM53 Developmental Testing #2																												
JSAM - JSAM RW - USAF FOC																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
JSAM - JSAM SA - MM53 Operational Testing on E-3 and P-3																												
JSAM - JSAM SA - MM53 MS C LRIP																												
JSAM - JSAM SA - MM53 MS C IOC																												
JSAM - JSAM SA - MM53 MS C FRP																												
JSAM - JSAM-JSF- Critical Design Review (CDR)																												
JSAM - JSAM-JSF - Design Verification Testing (DVT)																												
JSAM - JSAM-JSF - Developmental Testing																												
JSAM - JSAM-JSF - Test Readiness Review																												
** JSGPM - Contract Award for NIOSH Certification																												
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 - Contract Award (ZZAT Filters)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JSAM - Capability Development Document	2	2014	2	2014
JSAM - JSAM RW - Production Qualification Testing	1	2014	3	2014
JSAM - JSAM JSF Design Verification Testing	1	2014	1	2014
JSAM - JSAM TA - Safe to Fly Certification	2	2015	1	2018
JSAM - Critical Design Review (CDR)	2	2014	2	2014
JSAM - JSAM SA - MM53 Developmental Testing	2	2014	3	2016
JSAM - JSAM TA - Full and Open Comparative Gate Testing	3	2015	2	2016
JSAM - JSAM RW - USA/USAF Airworthiness Testing	1	2014	4	2015
JSAM - JSAM SA - MS C / Low Rate Initial Production	4	2016	3	2019
JSAM - JSAM TA - Aircraft Platform Integration/Operational Testing	2	2016	3	2019
JSAM - Test Readiness Review	4	2014	4	2014
JSAM - JSAM TA - AP22P(A) ECP Integration	1	2014	4	2015
JSAM - Developmental Testing	4	2014	4	2015
JSAM - JSAM RW - MS C/ Low Rate Initial Production (LRIP)	1	2015	4	2017
JSAM - JSAM SA - Operational Testing	4	2016	2	2017
JSAM - JSAM TA - MS C - Low Rate Initial Production (LRIP)	2	2016	3	2019
JSAM - JSAM SA - Initial Operational Capability	2	2017	2	2017
JSAM - JSAM RW - Multi Service Operational Test and Evaluation (MOT&E) USA/USAF	2	2015	3	2015
JSAM - JSAM TA - AP22P(A) Safe to Fly Certification	3	2014	4	2015
JSAM - LRIP Decision	3	2015	3	2015
JSAM - JSAM SA - LRIP 1	4	2016	2	2017
JSAM - LRIP Support	4	2015	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program				Date: February 2015	
Appropriation/Budget Activity 0400 / 5		R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>	
		Start		End	
Events		Quarter	Year	Quarter	Year
JSAM - JSAM RW - Multi Service Operational Test and Evaluation (MOT&E) USN/USMC		1	2016	2	2017
JSAM - Chemical and Biological (CB) Live Fire Test and Evaluation (LFTE)		2	2017	4	2017
JSAM - JSAM SA - LRIP 2		4	2017	1	2018
JSAM - JSAM TA - Initial Operational Capability		4	2018	4	2018
JSAM - JSAM SA - LRIP 3		3	2018	4	2018
JSAM - Safe-to-Fly Certification		3	2014	4	2015
JSAM - JSAM RW - USA IOC		1	2017	1	2017
JSAM - JSAM TA - Full Rate Production (FRP)		3	2019	4	2020
JSAM - JSAM RW - USAF IOC		4	2016	4	2016
JSAM - JSAM SA - LRIP 4		2	2019	3	2019
JSAM - JSAM RW - USN/USMC IOC		4	2018	4	2018
JSAM - JSAM SA - MS C / Full Rate Production		3	2019	4	2020
JSAM - JSAM RW - Full Rate Production (FRP)		4	2017	4	2020
JSAM - JSAM SA - MM53 Developmental Testing #2		2	2014	3	2016
JSAM - JSAM RW - USAF FOC		4	2016	4	2016
JSAM - JSAM SA - MM53 Operational Testing on E-3 and P-3		1	2017	2	2017
JSAM - JSAM SA - MM53 MS C LRIP		4	2016	3	2019
JSAM - JSAM SA - MM53 MS C IOC		2	2017	2	2017
JSAM - JSAM SA - MM53 MS C FRP		3	2019	4	2020
JSAM - JSAM-JSF- Critical Design Review (CDR)		2	2014	2	2014
JSAM - JSAM-JSF - Design Verification Testing (DVT)		1	2014	3	2014
JSAM - JSAM-JSF - Developmental Testing		4	2014	2	2015
JSAM - JSAM-JSF - Test Readiness Review		4	2014	4	2014
** JSGPM - Contract Award for NIOSH Certification		4	2014	4	2014
JSGPM - Bed Design Analysis (CoZZAT)		1	2014	2	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IP5 / <i>INDIVIDUAL PROTECTION (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
JSGPM - TD Contract Award (CoZZAT)	2	2015	2	2015
JSGPM - Prototype Development (CoZZAT)	2	2015	2	2016
JSGPM - Product Qualification Testing (CoZZAT)	2	2016	1	2017
JSGPM - ECP Production (CoZZAT)	2	2017	2	2017
JSGPM - Bed Design Analysis (MOF)	2	2016	4	2016
JSGPM - Prototype Development (MOF)	3	2016	1	2018
JSGPM - Prototype Testing (MOF)	2	2018	1	2019
JSGPM - Contract Award (ZZAT Filters)	4	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) IS5 / INFORMATION SYSTEMS (EMD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
IS5: INFORMATION SYSTEMS (EMD)	-	9.155	10.340	19.960	-	19.960	23.747	22.976	24.353	25.736	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

Efforts included in this project are: (1) Joint Effects Model (JEM); (2) the Joint Warning and Reporting Network (JWARN); (3) 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

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) IS5 / INFORMATION SYSTEMS (EMD)
unclassified, secret, top secret, and mission partner IT Systems without increasing system operator requirement, i.e.: sensor to COP via one communication loop. As a result, sensors will then be able to communicate with JWARN on the same network, regardless of classification.		
The Biosurveillance Portal (BSP) is a web-based enterprise environment that will facilitate collaboration, communication, and information sharing in support of the detection, management, and mitigation of man-made and naturally occurring biological events. BSP bridges the communication gaps in the biosurveillance domain to provide a central access point for biosurveillance information and situational awareness for DoD, interagency and allied partners supporting the early identification and response to biological events.		
BSP provides an integrated suite of web-based components designed to support public health officers, environmental officers, clinicians, physicians, and CBRN personnel as they maintain their situational awareness of local, regional, and global biological threats to the force. BSP does not duplicate existing DoD capabilities, but rather leverages existing tools and technologies to provide users across multiple organizations and disciplines with a centralized "one-stop shop" for all of their biosurveillance resources.		
As software-intensive systems, JEM, JWARN, and BSP have no separately identifiable unit production components. JEM and JWARN are designated as ACAT III programs and unit cost calculations including Program Acquisition Unit Cost/Average Procurement Unit Cost (PAUC/APUC) and Operations and Sustainment (O&S) average annual per unit costs are not applicable. Expect BSP to be similarly designated.		
The Software Support Activity (SSA) is a Chem-Bio Defense user developmental support and service organization to facilitate net-centric interoperability of systems in acquisition for the Warfighter. The SSA provides the CBRN Warfighter with Joint Service solutions for Integrated Architectures, Data Management/Modeling, Information Assurance (IA), Interoperability Certifications, Verification, Validation and Accreditation (VV&A) to support interoperable and integrated net-centric, service-oriented solutions for CBRN systems. The SSA emphasizes development of reference implementations to guide Government and industry system and software developers to ensure that their products meet common interoperability standards. The latest technologies/products include the definition of a Common CBRN Sensor Integration Standard (CCSI) and the CBRN Data Model. These technologies and direct enablers for the development of CBRN integrated sensor networks and the dissemination of CBRN information across all users. The SSA directly supports Chemical and Biological Defense Program (CBDP) initiatives by providing common service oriented architectures and frameworks for the collection and dissemination of Bio-Surveillance and other critical CBRN information.		
B. Accomplishments/Planned Programs (\$ in Millions)		
Title: 1) JEM Increment 2 Developmental Test and Evaluation		
FY 2014 Accomplishments: Performed Government assessment of competitive prototypes to assist in contracting technical assessment and down select decision. Perform Government Development Test of JEM Increment 2 capabilities to support FY15 Operational Test (OT) and Fielding Decision (FD)		
FY 2015 Plans:		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) IS5 / INFORMATION SYSTEMS (EMD)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Conduct Government Development Test of the software deliveries. Conduct independent Verification, Validation, and Accreditation of software models to support OT.				
FY 2016 Plans: Continue Government Development Test of software deliveries.				
Title: 2) JEM Increment 2 Program Development		5.927	4.594	1.005
FY 2014 Accomplishments: Awarded competitive prototyping down-select option and initiated JEM Increment 2 software baseline.				
FY 2015 Plans: Develop JEM Increment 2 software development and perform integration into Command and Control (C2) systems.				
FY 2016 Plans: Continue development of JEM Increment 2 software and perform integration into Command and Control (C2) systems.				
Title: 3) JEM Increment 2 Program Management		0.721	0.747	0.833
FY 2014 Accomplishments: Performed program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Complete development of Requirements Definition Package 1 (RDP-1). Successfully complete Milestone B (MSB) decision and Build Decision 1 (BD1) for JEM Increment 2.				
FY 2015 Plans: Perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Continue 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. Complete development of Requirements Definition Package 3 (RDP-3), which defines requirements for C2 systems integration of the JEM software. Complete Build Decision 2 (BD2) for JEM Increment 2.				
FY 2016 Plans: Complete Fielding Decision and IOC of Stand Alone capabilities of JEM Increment 2. Continue to perform program/financial management, costing, contracting, scheduling and acquisition oversight support for JEM Increment 2. Continue development and execution of Build Decision 4 (BD4) for JEM Increment 2 while working within the agile development process, to include performing a Joint Integrated Logistics Assessment (JILA) and Logistics' Demonstration (LOG DEMO) in order to deploy JEM Increment 2 to the services. Complete development of Requirements Definition Package 3 (RDP-3), which defines requirements				

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IS5 / <i>INFORMATION SYSTEMS (EMD)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
for C2 systems integration of the JEM software. Complete fielding decision and IOC of C2 systems capabilities of JEM Increment 2.				
Title: 4) JEM Increment 2 Operational Test and Evaluation FY 2015 Plans: Conduct lab based Operational Test (OT) and limited scope service-specific Initial Operational Test & Evaluation (IOT&E) which will allow for Initial Operational Capability (IOC) of JEM Increment 2 as a standalone to be deployed to the services. FY 2016 Plans: Continue lab based OT and limited scope service specific IOT&E to support fielding of software with additional capability. Conduct Service C2 Follow-on Test and Evaluation (FOT&E) which will allow for IOC of JEM Increment 2 on service C2 systems.		-	1.050	1.101
Title: 5) JWARN IT BOX Program Management Support FY 2015 Plans: Provide program/financial management, costing, contracting, scheduling and acquisition oversight for JWARN Increment 2. Continue development and execution of Build Decisions (BDs) for JWARN Increment 2 while working within the Agile development process, to include performing a Joint Integrated Logistics Assessment (JILA) and Logistics' Demonstration (LOG DEMO) in preparation for test and deployment of JWARN Increment 2 to the services. FY 2016 Plans: Continue program/financial management, costing, contracting, scheduling and acquisition oversight for JWARN Increment 2. Continue development and execution of Build Decisions (BDs) for JWARN Increment 2 while working within the Agile development process, to include performing a Joint Integrated Logistics Assessment (JILA) and Logistics' Demonstration (LOG DEMO) in preparation for test and deployment of JWARN Increment 2 to the services.		-	0.351	0.574
Title: 6) JWARN Inc. 2 - Program Development FY 2015 Plans: Initiate JWARN Increment 2 software development and perform integration into Command and Control (C2) systems. FY 2016 Plans: Continue JWARN Increment 2 software development and perform integration into Command and Control (C2) systems. Initiate integration of CBRN sensor/detector data/input with JWARN software baseline.		-	0.115	2.686
Title: 7) JWARN - Developmental Test and Evaluation FY 2015 Plans:		-	0.101	0.257

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 5		R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		Project (Number/Name) IS5 / <i>INFORMATION SYSTEMS (EMD)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Initiate Government development test and evaluation of software deliveries in preparation for Multiservice Operational Test and Evaluation (MOT&E) which will allow for Initial Operational Capability of JWARN Increment 2 to be deployed to the services. FY 2016 Plans: Continue Government development test and evaluation of software deliveries in preparation for Multiservice Operational Test and Evaluation (MOT&E) which will allow for Initial Operational Capability of JWARN Increment 2 to be deployed to the services.					
Title: 8) JWARN - Operational Test and Evaluation FY 2016 Plans: Conduct Multiservice Operational Test and Evaluation (MOT&E) which will allow for Initial Operational Capability (IOC) of JWARN Increment 2 to be deployed to the services.			-	-	0.789
Title: 9) BSP Product Development FY 2016 Plans: Plan to development and integration of BSP capabilities for inclusion in Capability Releases. This will included architecture development, system design, key system tools, third party developed models, access to external data sources, information assurance, and host platform design.			-	-	7.137
Title: 10) BSP Developmental Test and Evaluation FY 2016 Plans: Joint and Service Developmental Testing of BSP Capability Releases as required in accordance with the BSP Test and Evaluation Master Plan (TEMP).			-	-	0.998
Title: 11) BSP Program Management Support FY 2016 Plans: Will provide support for the management of all aspects of BSP development and testing. Tasks will included, planning, budgeting, execution oversight, risk management, user feedback, scheduling, and administration.			-	-	0.867
Title: 12) BSP Operational Testing and Evaluation FY 2016 Plans: Will support the Operational Testing of BSP in a realistic operational environment prior to fielding decision to determine system suitability and supportability. Support will consist of test support personnel as well as engineering, and operational support.			-	-	1.135
Title: 13) SSA Policies, Standards and Guidelines FY 2014 Accomplishments:			0.208	0.203	0.211

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) IS5 / INFORMATION SYSTEMS (EMD)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Updated acquisition documentation for CBRN IT systems based on changes in policy, procedures, and guidelines. Continue surveillance of Federal Information Security Management Act (FISMA) and DoD Acquisition policies necessary to maintain certification on deployed service platforms. Provide M&S strategic and accreditation support. FY 2015 Plans: Provide updates to acquisition documentation for CBRN IT systems based on changes in policy, procedures, and guidelines. Perform surveillance of Federal Information Security Management Act (FISMA) and DoD Acquisition policies necessary to maintain certification on deployed service platforms. Provide M&S strategic and accreditation support. FY 2016 Plans: Continue updates to acquisition documentation for CBRN IT systems based on changes in policy, procedures, and guidelines. Perform surveillance of Federal Information Security Management Act (FISMA) and DoD Acquisition policies necessary to maintain certification on deployed service platforms. Provide M&S strategic and accreditation support.				
Title: 14) SSA Integrated Architecture FY 2014 Accomplishments: Performed required modifications to the Integrated Architecture on host platforms and document the infrastructure and technical standards. Conduct Net-Centric Assessments for programs. Reviewed and update the Common CBRN Interface standards on operational systems, including a CCSI. FY 2015 Plans: Modify the Integrated Architecture on host platforms and document the infrastructure and technical standards. Conduct Net-Centric Assessments for programs. Review and update the Common CBRN Interface standards on operational systems, including a CCSI. FY 2016 Plans: Continue to perform required modifications to the Integrated Architecture on host platforms and document the infrastructure and technical standards. Conduct Net-Centric Assessments for programs. Review and update the Common CBRN Interface standards on operational systems, including a CCSI.		0.251	0.240	0.247
Title: 15) SSA Enterprise Support and Services FY 2014 Accomplishments: Supported processes and services for Architectures, Data, Information Assurance, Modeling and Simulation, Science and Technology, and Standards and Policy. Modify support processes and services necessary to maintain relevancy in accordance with DoD standards, policies, and guidelines. FY 2015 Plans:		0.163	0.147	0.177

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) IS5 / INFORMATION SYSTEMS (EMD)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Support processes and services for Architectures, Data, Information Assurance, Modeling and Simulation, Science and Technology, and Standards and Policy. Modify support processes and services necessary to maintain relevancy in accordance with DoD standards, policies, and guidelines. FY 2016 Plans: Continue to support processes and services for Architectures, Data, Information Assurance, Modeling and Simulation, Science and Technology, and Standards and Policy. Modify support processes and services necessary to maintain relevancy in accordance with DoD standards, policies, and guidelines.				
Title: 16) SSA Chemical, Biological, Radiological, Nuclear (CBRN) Data Model FY 2014 Accomplishments: Developed periodic CBRN data model and define the structure and content of information exchange (XML schemas) that support interoperability between CBD programs. FY 2015 Plans: Develop and update CBRN data model and define the structure and content of information exchange "Extensible Markup Language"(XML) schemas that support interoperability between CBD programs. FY 2016 Plans: Continue to develop and update CBRN data model and define the structure and content of information exchange "Extensible Markup Language"(XML) schemas that support interoperability between CBD programs.		0.183	0.167	0.198
Title: 17) SSA Information Assurance FY 2014 Accomplishments: Employed Information Systems Security Engineering efforts to develop or modify the IA component of a system architecture to ensure it is in compliance with the IA component of the Global Information Grid architecture, and makes maximum use of enterprise IA capabilities and services. FY 2015 Plans: Employ Information Systems Security Engineering efforts to develop or modify the IA component of a system architecture to ensure it is in compliance with the IA component of the Global Information Grid architecture, and makes maximum use of enterprise IA capabilities and services. FY 2016 Plans:		0.444	0.477	0.456

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IS5 / <i>INFORMATION SYSTEMS (EMD)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Continue to employ Information Systems Security Engineering efforts to develop or modify the IA component of a system architecture to ensure it is in compliance with the IA component of the Global Information Grid architecture, and makes maximum use of enterprise IA capabilities and services.			
Title: 18) SSA Policy and Standards Repository		0.366	0.357
FY 2014 Accomplishments: Provided standards, formats, templates, training, and best practices to support practical compliance with laws, regulations, and policy for acquisition, certification, and sustainment of net-centric, interoperable, and spectrum dependent systems and devices.			
FY 2015 Plans: Provide standards, formats, templates, training, and best practices to support practical compliance with laws, regulations, and policy for acquisition, certification, and sustainment of net-centric, interoperable, and spectrum dependent systems and devices.			
FY 2016 Plans: Continue to provide standards, formats, templates, training, and best practices to support practical compliance with laws, regulations, and policy for acquisition, certification, and sustainment of net-centric, interoperable, and spectrum dependent systems and devices.			
Title: 19) SSA Technology Transition Support		0.345	0.351
FY 2014 Accomplishments: Provided Technology Transition support services (common components and services) for CBD programs.			
FY 2015 Plans: Perform Technology Transition support services (common components and services) for CBD programs.			
FY 2016 Plans: Continue to perform Technology Transition support services (common components and services) for CBD programs.			
Title: 20) SBIR/STTR		-	0.135
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.			-
Accomplishments/Planned Programs Subtotals		9.155	10.340
			19.960

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IS5 / <i>INFORMATION SYSTEMS (EMD)</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• IS7: <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	6.442	4.091	7.703	-	7.703	9.557	12.407	13.519	12.767	Continuing	Continuing
• G47101: <i>JOINT WARNING & REPORTING NETWORK (JWARN)</i>	1.112	0.766	-	-	-	4.589	1.522	0.533	0.479	Continuing	Continuing
• JC0208: <i>JOINT EFFECTS MODEL (JEM)</i>	-	1.141	3.316	-	3.316	5.069	3.086	3.031	2.728	Continuing	Continuing
• JS5230: <i>SOFTWARE SUPPORT ACTIVITY (SSA)</i>	0.100	-	0.100	-	0.100	0.100	0.100	0.100	0.090	Continuing	Continuing

Remarks

D. Acquisition Strategy

JOINT EFFECTS MODEL (JEM)

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

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

The current contractor for JEM 2.0 will provide all capabilities defined in the Requirement Definition Package 1 (RDP-1) document produced by the Joint Requirements Office (JRO). 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 FY18 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 FY18 will be responsible 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 four separate JEM Requirement Definition Packages (RDPs). RDP-1 contains the baseline capabilities for software and was released in June of 2014. RDP-2 will be released after the completion of RDP-1. This RDP will incorporate emerging capabilities that the Joint Science and Technology Office determines has reached a sufficient enough maturity for incorporation into JEM, such as ability to model new agents. Requirements to integrate baseline capabilities into a version that can be fielded on service C2 systems will be released in RDP-3. RDP-3 will be released following RDP-1 but prior to RDP-2, to rapidly allow baseline capabilities to be incorporated into C2 systems. RDP-4 is a notional package

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IS5 / <i>INFORMATION SYSTEMS (EMD)</i>
<p>that would allow the Science and Technology community a venue to use the JEM program to develop a version of the product for S&T use. Capabilities that are only required for the Science and Technology community and not for operational users would be implemented in RDP-4. Capabilities in RDP-4 would not be required to go to Operational Test, as they would not be fielded to operational users.</p> <p>RDP 1 - Baseline Capabilities: There are 5 planned Capability Drops (CD) within RDP 1. RDP 2 - Emerging Capabilities: There are 5 planned Capability Drops (CD) within RDP 2. RDP 3 - C2 Integration: There are 8 planned Capability Drops (CD) within RDP 3 tied to all the various Strategic and Service C2 Systems RDP 4 - Analytical Support: There are 2 planned Capability Drops (CD) within RDP 4.</p> <p>After an over-arching MS B with the MDA, each RDP will have an associated Build Decision. Each CD will have an associated fielding decision.</p> <p>JOINT WARNING & REPORTING NETWORK (JWARN)</p> <p>JWARN Increment 2 utilizes the JROC's "IT Box" construct for software requirements management and development. The intent is to provide the next generation of capability with current and future technologies, as stated in the IS ICD, in less time and away from an incremental delivery approach. This effort is being executed under a Cost-Plus-Award Term Incentive structure to gain maximum benefit to the Government in maintaining the fielded baseline and future software capability development and was awarded under a full and open competition Request for Proposal (RFP). The JWARN Program will procure a Sensor Connectivity Capability (SCC) (hardware materiel solution) in order to facilitate the transfer of CBRN sensor information from legacy CBRN sensors to DoD networks. This solution will be external to the CBRN Sensors and Service-identified network transmission device(s).</p> <p>BIOSURVEILLANCE PORTAL (BSP)</p> <p>BSP 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.</p> <p>SOFTWARE SUPPORT ACTIVITY (SSA)</p> <p>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). Phase 1a identifies CBDP programs that deal with data or software, and have an IT component. 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. Phase 2 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.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
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<u>E. Performance Metrics</u> N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) IS5 / INFORMATION SYSTEMS (EMD)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JEM - SW SB - JEM Increment 2 - Hazard Prediction Model Development and Integration	C/CPAF	General Dynamics Information Technologies : Fairfax, VA	0.000	5.927	Apr 2014	4.594	Apr 2015	1.005	Apr 2016	-		1.005	Continuing	Continuing	-
** JWARN - SW S - JWARN Inc. 2 - Software Development	C/CPAF	Northrop Grumman Corp. : Winter Park, FL	0.000	-		0.109	Feb 2015	2.686	Feb 2016	-		2.686	Continuing	Continuing	-
** BSP - SW S - BSP software	Various	TBD :	0.000	-		-		7.137	Mar 2016	-		7.137	Continuing	Continuing	-
** SSA - SW S - CBRN Data Model	C/CPAF	Various :	4.867	0.812	Mar 2014	0.592	Mar 2015	0.615	Mar 2015	-		0.615	Continuing	Continuing	-
Subtotal			4.867	6.739		5.295		11.443		-		11.443	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** SSA - ES S - Support Costs	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	6.724	0.497	Nov 2013	0.616	Nov 2014	0.582	Nov 2015	-		0.582	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR- SBIR/STTR	PO	TBD :	0.000	-		0.135		-		-		-	Continuing	Continuing	-
Subtotal			6.724	0.497		0.751		0.582		-		0.582	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
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Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JEM - DTE SB - JEM Increment 2 - Hazard Prediction Model Development Test	MIPR	Naval Surface Warfare Center (NSWC) - Dahlgren Center : Dahlgren, VA	6.813	0.547	Nov 2013	1.305	Nov 2014	0.677	Nov 2015	-		0.677	Continuing	Continuing	-
OTHT C - JEM Inc. 2 - OT&E Hazard Prediction Modeling software	MIPR	Navy Operational Test and Eval Force (OPTEVFOR) : Norfolk, VA	0.000	-		1.050	Nov 2014	1.101	Nov 2015	-		1.101	Continuing	Continuing	-
** JWARN - OTE S - JWARN Inc. 2 - MOT&E	MIPR	Army Test and Evaluation Command (ATEC) : Aberdeen Proving Ground, MD	0.000	-		0.101	Nov 2014	1.046	Nov 2015	-		1.046	Continuing	Continuing	-
** BSP - DTE S - BSP Software	MIPR	Various :	0.000	-		-		0.998	Dec 2015	-		0.998	Continuing	Continuing	-
OTE S - BSP Software - MOT&E	MIPR	Various :	0.000	-		-		1.135	Dec 2015	-		1.135	Continuing	Continuing	-
** SSA - DTE S - Test and Evaluation	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.272	0.446	Nov 2013	0.477	Nov 2014	0.461	Nov 2015	-		0.461	Continuing	Continuing	-
Subtotal			9.085	0.993		2.933		5.418		-		5.418	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JEM - PM/MS S - Program Office - Planning and Programming	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	4.922	0.721	Nov 2013	0.747	Nov 2014	0.833	Nov 2015	-		0.833	Continuing	Continuing	-
** JWARN - PM/MS S - JWARN Increment 2	MIPR	Space and Naval Warfare (SPAWAR)	0.000	-		0.357	Nov 2014	0.574	Nov 2015	-		0.574	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Program Management Support		Systems Center : San Diego, CA													
** BSP - PM/MS S - BSP Program Management	Various	Various :	0.000	-		-		0.867	Dec 2015	-		0.867	Continuing	Continuing	-
** SSA - PM/MS S - Management Services	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.221	0.205	Nov 2013	0.257	Nov 2014	0.243	Nov 2015	-		0.243	Continuing	Continuing	-
Subtotal			7.143	0.926		1.361		2.517		-		2.517	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	27.819	9.155		10.340		19.960		-		19.960	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IS5 / <i>INFORMATION SYSTEMS (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** JEM INC. 2 - Baseline Capability Technology Development																												
JEM INC. 2 - RDP 1																												
JEM INC. 2 - MS B																												
JEM INC. 2 - BD 1																												
JEM INC. 2 - RDP 2																												
JEM INC. 2 - BD 2																												
JEM INC. 2 - FD 1																												
JEM INC. 2 - RDP 3																												
JEM INC. 2 - IOC Standalone																												
JEM INC. 2 - BD 3																												
JEM INC. 2 - FD 2																												
JEM INC. 2 - RDP 4																												
JEM INC. 2 - FD 3																												
JEM INC. 2 - FD 4																												
JEM INC. 2 - C2 Integration Development Test																												
JEM INC. 2 - Gov't DT / IT / V&V																												
** JWARN INC. 2 - Information System Initial Capability Document																												
JWARN INC. 2 - Baseline Preliminary Design Review (Software)																												
JWARN INC. 2 - Baseline Critical Design Review (Software)																												
JWARN INC. 2 - RDP 1																												
JWARN INC. 2 - RDP 2																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program																	Date: February 2015											
Appropriation/Budget Activity									R-1 Program Element (Number/Name)								Project (Number/Name)											
0400 / 5									PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)								IS5 / INFORMATION SYSTEMS (EMD)											
	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
JWARN INC. 2 - TEMP (Software)																												
JWARN INC. 2 - MS B																												
JWARN INC. 2 - BD 1																												
JWARN INC. 2 - BD 2																												
JWARN INC. 2 - Initial Multi-Service Operational Testing (MOT&E)																												
JWARN INC. 2 - Initial Full-Rate Production/ Full Deployment Decision																												
JWARN INC. 2 - RDP 3																												
JWARN INC. 2 - Initial Operational Capability (JWARN Standalone Web)																												
JWARN INC. 2 - FD 1																												
JWARN INC. 2 - IOC for RDP 1																												
JWARN INC. 2 - BD 3																												
JWARN INC. 2 - FD 2																												
JWARN INC. 2 - IOC for RDP 2																												
JWARN INC. 2 - FD 3																												
JWARN INC. 2 - IOC for RDP 3																												
JWARN INC. 2 - Full Operational Capability (C2 Host System Dependent)																												
JWARN INC. 2 - Gov't DT / IT / UFEs / OAs / FOTs																												
** BSP - MS B																												
BSP - TEMP																												
BSP - Capability Drop 1																												
BSP - Capability Drop 2																												
BSP - Capability Drop 3																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program																	Date: February 2015											
Appropriation/Budget Activity										R-1 Program Element (Number/Name)								Project (Number/Name)										
0400 / 5										PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)								IS5 / INFORMATION SYSTEMS (EMD)										
	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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 - Capability Drop 4																												
BSP - Operational Test and Evaluation - Capability Drops																												
BSP - IOC																												
** SSA - Provide Integration and Test, M&S, VV&A Certification and Accreditation																												
SSA - Provide CM Services for Common User Products and Services																												
SSA - Provide Net-Centric Assessment and assist programs with implementation of policy																												
SSA - Develop and provide CBRN Data Model implementation guidance, including reference implementations																												
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing																												
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.																												
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IS5 / <i>INFORMATION SYSTEMS (EMD)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JEM INC. 2 - Baseline Capability Technology Development	2	2014	4	2014
JEM INC. 2 - RDP 1	2	2014	2	2014
JEM INC. 2 - MS B	4	2014	4	2014
JEM INC. 2 - BD 1	1	2015	1	2015
JEM INC. 2 - RDP 2	1	2015	1	2015
JEM INC. 2 - BD 2	2	2015	2	2015
JEM INC. 2 - FD 1	4	2015	4	2015
JEM INC. 2 - RDP 3	4	2015	4	2015
JEM INC. 2 - IOC Standalone	1	2016	1	2016
JEM INC. 2 - BD 3	2	2016	2	2016
JEM INC. 2 - FD 2	4	2016	4	2016
JEM INC. 2 - RDP 4	1	2017	1	2017
JEM INC. 2 - FD 3	4	2017	4	2017
JEM INC. 2 - FD 4	4	2018	4	2018
JEM INC. 2 - C2 Integration Development Test	1	2016	2	2020
JEM INC. 2 - Gov't DT / IT / V&V	3	2014	4	2020
** JWARN INC. 2 - Information System Initial Capability Document	3	2014	3	2014
JWARN INC. 2 - Baseline Preliminary Design Review (Software)	3	2014	3	2014
JWARN INC. 2 - Baseline Critical Design Review (Software)	3	2014	1	2015
JWARN INC. 2 - RDP 1	2	2015	2	2015
JWARN INC. 2 - RDP 2	2	2015	2	2015
JWARN INC. 2 - TEMP (Software)	3	2015	3	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) IS5 / <i>INFORMATION SYSTEMS (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
JWARN INC. 2 - MS B	3	2015	3	2015
JWARN INC. 2 - BD 1	3	2015	3	2015
JWARN INC. 2 - BD 2	1	2016	1	2016
JWARN INC. 2 - Initial Multi-Service Operational Testing (MOT&E)	4	2015	2	2016
JWARN INC. 2 - Initial Full-Rate Production/Full Deployment Decision	2	2016	4	2016
JWARN INC. 2 - RDP 3	3	2016	3	2016
JWARN INC. 2 - Initial Operational Capability (JWARN Standalone Web)	4	2016	2	2017
JWARN INC. 2 - FD 1	4	2016	4	2016
JWARN INC. 2 - IOC for RDP 1	1	2017	1	2017
JWARN INC. 2 - BD 3	2	2017	2	2017
JWARN INC. 2 - FD 2	4	2017	4	2017
JWARN INC. 2 - IOC for RDP 2	4	2017	4	2017
JWARN INC. 2 - FD 3	4	2018	4	2018
JWARN INC. 2 - IOC for RDP 3	2	2019	2	2019
JWARN INC. 2 - Full Operational Capability (C2 Host System Dependent)	3	2018	3	2020
JWARN INC. 2 - Gov't DT / IT / UFEs / OAs / FOTs	3	2015	4	2020
** BSP - MS B	2	2015	3	2015
BSP - TEMP	3	2015	1	2016
BSP - Capability Drop 1	2	2016	2	2016
BSP - Capability Drop 2	4	2016	4	2016
BSP - Capability Drop 3	2	2017	2	2017
BSP - Capability Drop 4	4	2017	4	2017
BSP - Operational Test and Evaluation - Capability Drops	2	2016	4	2017
BSP - IOC	2	2018	3	2018
** SSA - Provide Integration and Test, M&S, VV&A Certification and Accreditation	1	2014	4	2018

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

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Events	Start		End	
	Quarter	Year	Quarter	Year
SSA - Provide CM Services for Common User Products and Services	1	2014	4	2020
SSA - Provide Net-Centric Assessment and assist programs with implementation of policy	1	2014	4	2020
SSA - Develop and provide CBRN Data Model implementation guidance, including reference implementations	1	2014	4	2020
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing	1	2014	4	2020
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.	1	2014	4	2020
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface	1	2014	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MB5: MEDICAL BIOLOGICAL DEFENSE (EMD)	-	253.748	179.497	117.881	-	117.881	170.122	209.182	215.905	208.482	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

The Advanced Development and Manufacturing (ADM) capability (formerly the Medical Countermeasures Advanced Development and Manufacturing (MCMI) program) provides core and drug development services to include the establishment, commissioning, validation, and attainment of Current Good Manufacturing Practice (cGMP)/ Current Good Laboratory Practice (cGLP) for a MCM ADM capability for the Department of Defense (DoD).

The ADM effort is being executed in two phases. Phase 1 is for the establishment, commissioning, and validation of the ADM capability. This project funds the establishment of the ADM capability in Alachua, Florida. Two ADM cGMP suites, capable of operating at Bio Surety Level (BSL) 3 will be established during the base contract period. There are contract options to incrementally increase capacity. Upon attainment of cGMP capability Phase 2 begins. During Phase 2, the contractor team will support and maintain the ADM capability in a state of readiness to support MCM development (to include cGMP manufacturing) and assist in training personnel in its use. The second phase includes transition and integration of new technologies to support MCM FDA required development activities. Phase 1 and 2 contract was awarded in March 2013 to Nanotherapeutics, Inc., Alachua, FL. The ADM capability sustainment costs during Phase 2 will originate from Government MCM programs using this capability.

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

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

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<p>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. EID Tx is pursuing influenza indication as the first step in the development of a broad spectrum antiviral drug 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. This drug 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 SDD phase. Ongoing EID Tx drug development will be leveraged 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.</p> <p>The Hemorrhagic Fever Virus (HFV) MCS Acquisition Program develops medical countermeasures (MCMs), using high threat, extremely lethal Biological Warfare Agents (BWAs) of the Filoviridae family agents (Ebola) as a model system. Medical countermeasures will be advanced through the Food and Drug Administration (FDA) licensure/approval via the FDA 'Animal Rule', which allows for the demonstration of efficacy in relevant animal model(s) when human testing is not ethically feasible. HFV will also conduct animal model development and refinement as needed to support the pivotal animal efficacy testing required under the FDA 'Animal Rule'. Completion of Phase I trials, animal model development, and manufacturing scale up were the focus of the ACD&P phase. FDA approval for Filovirus therapeutics are expected following completion of the SDD phase. HFV will also support the Ebola outbreak by performing Phase 2 clinical trials in Africa.</p> <p>The NGDS is an evolutionary acquisition family of systems to provide increments of capability over time across many echelons of the Combat Health Support System. The mission of the NGDS is to provide Chemical, biological and radiological (CBR) threat, and infectious disease identification and FDA-cleared diagnostics to inform individual patient treatment and CBR situational awareness and disease surveillance. NGDS Increment 1 will significantly improve diagnostic capabilities for deployable combat health support units (role 3) while also improving operational suitability and affordability. The term "Role" is used to describe the stratification of the four tiers in which medical support is organized, on a progressive basis, to conduct treatment, evacuation, resupply, and functions essential to the maintenance of the health of the force. Role 3 support is normally provided at Division or Service equivalent level and includes specialist laboratory resources. NGDS Increment 2 will compliment NGDS Increment 1 by addressing biological pathogens and toxins, diagnostics for chemical and radiological exposures, and to provide capability to lower echelons of care.</p> <p>The DoD funds the development of vaccines that are directed against validated biological warfare (BW) weapons to include bacteria, viruses, and toxins of biological origin. Effective medical countermeasures to negate the threat of these BW agents are urgently needed. Vaccines have been identified as the most efficient countermeasure against the validated threat of BW weapons. Products under development in this budget item include Recombinant Botulinum A/B and Plague vaccines. Efforts to be conducted during the Engineering Manufacturing Development (EMD) Phase include the development of large scale manufacturing process and validation of that process, nonclinical studies, demonstration of manufacturing consistency, and expanded clinical human safety studies. The results of these efforts, and those conducted during the EMD phase, will be used to submit a Biologic License Application (BLA) to the Food and Drug Administration (FDA) for product licensure. To evaluate vaccine effectiveness, pivotal animal studies will be conducted concurrently with the Phase 3 clinical trial to satisfy the requirements of the FDA's "Animal Rule". The DoD anticipates that the FDA will approve these products using the Animal Rule, which allows for the demonstration of efficacy in relevant animal model(s). Upon FDA licensure, the product will transition to full-scale licensed production.</p>		

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The DoD also has the mission to maintain Investigational New Drug (IND) vaccines in Good Manufacturing Practice (GMP) storage and to conduct the periodic potency and sterility testing of these materials to support submissions to the FDA. These IND vaccines will be used to provide additional levels of protection to laboratory workers in the Special Immunizations Program (SIP) conducting research on these diseases.					
FY 2015 funding includes \$169.5 million of base funding and \$10.0 million of Ebola emergency funding.					
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Title: 1) ADM - Establish Manufacturing Suites & Capability FY 2014 Accomplishments: Finalized the establishment of two modular manufacturing suites to biosurety level three (3) standards. Conducted verification and validation of the manufacturing suites to include process equipment. Continued ADM capability staffing with Contractor personnel. Finalized the procurement, installation and testing of equipment.			13.990	-	-
Title: 2) ADM - Equipment Procurement and Installation. FY 2014 Accomplishments: Finalized the procurement, installation and testing of equipment.			24.238	-	-
Title: 3) ADM - Program Management FY 2014 Accomplishments: Provided strategic planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight and technical support.			8.079	-	-
Title: 4) BSV FY 2014 Accomplishments: Initiated and completed purchase of Commercial Off the Shelf Detectors for the Assessment of Environmental Detectors (AED) Leg of the JUPITR ATD.			5.513	-	-
Title: 5) BSV FY 2014 Accomplishments: Initiated management and Logistic Support to AED leg of JUPITR ATD.			3.500	-	-
Title: 6) BSV FY 2014 Accomplishments: Initiated management and travel efforts in support of the Bio Defense Tactical Force			0.100	-	-
Title: 7) CRP			2.960	2.738	1.918

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<i>FY 2014 Accomplishments:</i> Continued development/expansion/scale-up of biological select agents reference materials to known and emerging threats. <i>FY 2015 Plans:</i> Continue development/expansion of biological select agents reference materials to known and emerging threats. <i>FY 2016 Plans:</i> Continue development/expansion of biological select agents reference materials to known and emerging threats.					
<i>Title:</i> 8) CRP <i>FY 2014 Accomplishments:</i> Continued development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems. <i>FY 2015 Plans:</i> Continue development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems. <i>FY 2016 Plans:</i> Continue development of immunoassays and nucleic acid based genomic assays to support fielded and developmental systems.			7.170	1.590	1.370
<i>Title:</i> 9) CRP <i>FY 2014 Accomplishments:</i> Continued Quality Assurance/Quality Control testing to encompass the transition and fielding of biological detection assays. <i>FY 2015 Plans:</i> Continue QA/QC testing to encompass the transition and fielding of biological detection assays. <i>FY 2016 Plans:</i> Continue QA/QC testing to encompass the transition and fielding of biological detection assays.			1.111	1.070	0.865
<i>Title:</i> 10) CRP <i>FY 2014 Accomplishments:</i> Continued to maintain yearly accreditation audits such as ISO 9001,17025, and Guide 34 certifications. Conducted quality actions throughout to maintain the quality managed systems. <i>FY 2015 Plans:</i> Continue to maintain yearly accreditation audits such as ISO 9001, 17025, and Guide 34 certifications. Continue quality actions throughout to maintain the quality managed systems. <i>FY 2016 Plans:</i>			0.870	1.290	1.064

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continue to maintain yearly accreditation audits such as ISO 9001, 17025, and Guide 34 certifications. Continue quality actions throughout to maintain the quality managed systems.				
Title: 11) CRP FY 2014 Accomplishments: Continued development of prototypes/information for strains contained in Unified Culture Collection. FY 2015 Plans: Continue development of prototypes/information for strains contained in Unified Culture Collection. FY 2016 Plans: Continue development of prototypes/information for strains contained in Unified Culture Collection.		1.525	2.384	1.779
Title: 12) EID TX FY 2014 Accomplishments: Continued FDA required Phase 3 global Clinical trials in support of FDA approval of the influenza indication. Clinical trials were and will continue to be conducted in the United States, the Commonwealth of Puerto Rico, and 21 foreign countries. FY 2015 Plans: Complete FDA required Phase 3 global Clinical trials in support of influenza indication.		70.426	13.897	-
Title: 13) EID TX FY 2014 Accomplishments: Completed efficacy testing of patient viral samples for the EID Tx-Flu Phase 3 trial in support of FDA approval for influenza indication.		7.546	-	-
Title: 14) EID TX FY 2014 Accomplishments: Completed FDA required 38 patient renal study to determine renal toxicity levels.		1.051	-	-
Title: 15) EID TX FY 2014 Accomplishments: Initiated the manufacturing of FDA required, drug product, registration batches.		10.000	-	-
Title: 16) EID TX FY 2014 Accomplishments:		2.600	-	-

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continued working with Ministries of Health (an FDA equivalent) for the 21 non-US countries that have clinical trial sites supporting EID Tx-Flu's Phase 3 Clinical Study.					
Title: 17) EID TX FY 2014 Accomplishments: Continued analysis of data for all FDA required clinical trials, including the 1,716 patient Phase 3 clinical study. FY 2015 Plans: Continue analysis of data for all FDA required clinical trials, including the 1,716 patient Phase 3 clinical study. Develop FDA clinical study reports. FY 2016 Plans: Complete analysis of data for all FDA required clinical trials, including the 1,716 patient Phase 3 clinical study. Develop and deliver FDA clinical study reports.			3.960	8.871	15.841
Title: 18) EID TX FY 2014 Accomplishments: Initiated EID Tx New Indication (NI) Filovirus Proof of Concept Studies (POC) for Broad Spectrum testing of anti-viral therapeutics.			4.000	-	-
Title: 19) EID TX FY 2015 Plans: Prepare NDA submission for FDA review and approval. FY 2016 Plans: Deliver NDA for FDA approval, and answer any FDA questions.			-	5.816	1.231
Title: 20) EID TX FY 2016 Plans: Initiate Dose Range and Response studies using 72 Non-Human Primates (NHPs) in support of FDA approval for EID Tx-NI for Bio-Warfare Agent (BWA) threats using the animal rule.			-	-	3.920
Title: 21) EID TX FY 2016 Plans: Initiate Delay Time to Treat studies using 72 NHPs in support of FDA approval for EID Tx-NI BWA threats using the animal rule.			-	-	1.639
Title: 22) HFV FY 2014 Accomplishments:			7.283	24.892	25.736

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Initiated manufacturing activities in preparation for Post Milestone B activities.					
FY 2015 Plans: Initiate and complete pilot animal efficacy studies via the aerosol route of challenge under Good Laboratory Practices (GLP) conditions in a Bio Safety Level (BSL) 4. Initiate pivotal aerosol efficacy studies in a BSL 4, under GLP conditions.					
FY 2016 Plans: Continue pivotal animal efficacy studies via aerosol and parenteral routes of challenge in non-human primates. Continue Phase II clinical trials.					
Title: 23) HFV			-	14.174	17.475
FY 2015 Plans: Initiate alternate route of administration feasibility studies, and Delayed Time to Treat studies for the Ebola MCM.					
FY 2016 Plans: Continue studies to further characterize the therapeutic window of the Ebola MCM under Good Laboratory Practice (GLP) conditions in a Bio Safety Level (BSL) 4.					
Title: 24) HFV			-	10.000	-
FY 2015 Plans: Ebola Response (Title X) funded effort. Perform Phase 2 clinical trials in Africa for TEKMIIRA (TKM-Ebola). Phase 2 clinical trials will be conducted using the TKM-Ebola product targeting the Guinea Variant using its LNP 1 formulation.					
Title: 25) NGDS Increment 2			-	-	3.600
FY 2016 Plans: Initiate clinical trials for CBR multiplex lateral flow immunoassays					
Title: 26) NGDS Increment 2			-	-	0.400
FY 2016 Plans: Purchase lateral flow immunoassays to support clinical trials.					
Title: 27) NGDS Increment 2			-	-	4.000
FY 2016 Plans: Initiate system development and demonstration for CBR NGDS Inc 2 diagnostic platform instrument.					
Title: 28) VAC BOT - Recombinant Botulinum Vaccine			20.000	26.447	8.268
FY 2014 Accomplishments:					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continued technology transfer of the manufacturing process and initiate the production of consistency lots for serotypes A & B. FY 2015 Plans: Complete technology transfers of the manufacturing process for serotypes A & B; develop analytical comparability studies to correlate new drug substances with those manufactured at the previous Contractor Manufacturing Organization (CMO). FY 2016 Plans: Execute the manufacturing of consistency lots for serotypes A & B at the new CMO.				
Title: 29) VAC BOT - Recombinant Botulinum Vaccine FY 2014 Accomplishments: Delayed phase three clinical trial execution due to termination of manufacturing efforts by previous drug substance's CMO. Completed pivotal non human primate efficacy study. Continued requirements for safeguarding biological select agents and toxins. FY 2015 Plans: Validate manufacturing processes for both serotypes at the new CMO facility. Initiate consistency lot manufacturing of drug substances intended for utilization in the Phase 3 Clinical Trial. Continued requirements for safeguarding biological select agents and toxins. FY 2016 Plans: Continue non-clinical comparability studies to bridge newly manufactured drug substance and product that was made at the previous CMO prior to technology transfer. Continue to monitor requirements for safeguarding biological select agents and toxins. Initiate efforts for the development of the Chemistry Manufacturing and Controls (CMC) submission to the FDA.		4.811	16.115	6.232
Title: 30) VAC BOT FY 2014 Accomplishments: Continued to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. FY 2015 Plans: Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. FY 2016 Plans:		22.490	10.000	2.274

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support.					
<p>Title: 31) VAC PLG</p> <p>FY 2014 Accomplishments: Completed non-clinical, FDA-required passive transfer studies. Initiated animal efficacy studies to demonstrate vaccine effectiveness according to the Capability Development Document (CDD) requirement levels. Continued requirement for safeguarding select agents and toxins.</p> <p>FY 2015 Plans: Continue Animal efficacy studies. Initiate pivotal animal efficacy and duration studies. Initiate reproductive toxicity testing. Continue requirements for safeguarding biological select agents and toxins.</p> <p>FY 2016 Plans: Complete Animal efficacy studies. Continue pivotal animal efficacy and duration studies. Continue reproductive toxicity testing. Continue requirements for safeguarding biological select agents and toxins.</p>			6.397	11.200	7.000
<p>Title: 32) VAC PLG</p> <p>FY 2014 Accomplishments: Prepared all manufacturing and Fill/Finish documentation required by the FDA for permission to proceed to Phase 3 Clinical Trial.</p> <p>FY 2015 Plans: Initiate preparation for Phase 3 clinical trial to evaluate expanded safety and efficacy in thousands of volunteers. Conduct Milestone C/LRIP.</p> <p>FY 2016 Plans: Initiate in-life portion of Phase 3 clinical trial to evaluate expanded safety and efficacy. Initiate Protective Capacity Assay using pooled human sera from Phase 3 clinical trial.</p>			9.859	16.864	3.798
<p>Title: 33) VAC PLG</p> <p>FY 2014 Accomplishments: Completed consistency lot production and testing.</p> <p>FY 2015 Plans: Prepare and submit IND for consistency lot production and testing and Protective Capacity Assay (PCA) results to the FDA for approval or guidance.</p> <p>FY 2016 Plans:</p>			2.334	2.000	1.500

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B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Complete and finalize adjustments to production, Fill/Finish operations and PCA results after receipt of FDA guidance.					
Title: 34) VAC PLG FY 2014 Accomplishments: Continued to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. FY 2015 Plans: Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support. FY 2016 Plans: Continue to provide strategic/tactical planning, government systems engineering, program/financial management, costing, technology assessment, contracting, scheduling, acquisition oversight, and technical support.			9.498	6.150	5.200
Title: 35) VAC SIP FY 2014 Accomplishments: Continued storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. FY 2015 Plans: Continue storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program. FY 2016 Plans: Continue storage, distribution, potency testing, and biosurety compliance activities in support of the Special Immunization Program.			2.437	1.581	2.771
Title: 36) SBIR/STTR FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.			-	2.418	-
Accomplishments/Planned Programs Subtotals			253.748	179.497	117.881

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• MB7: MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)	0.493	13.414	11.801	-	11.801	10.420	3.137	13.943	12.496	Continuing	Continuing
• JM8788: NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)	-	12.518	5.300	-	5.300	9.798	15.412	16.014	11.900	Continuing	Continuing
• JX0005: DOD BIOLOGICAL VACCINE PROCUREMENT (VACCINES)	0.185	6.412	0.185	-	0.185	0.185	0.185	3.848	10.882	Continuing	Continuing
• JX0210: CRITICAL REAGENTS PROGRAM (CRP)	-	2.564	1.005	-	1.005	1.005	1.005	1.005	1.005	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
ADVANCED DEVELOPMENT & MANUFACTURING (ADM)											
The ADM capability awarded a competitive ten (10) year [two base years with four 2 year options] Cost Plus Fixed fee (CPFF) contract to Nanotherapeutics, Inc., Alachua, Florida.											
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). Lessons learned from the ATD will be transitioned to the programs of record associated with the CBDP (such as NGDS, TDS & CALS). The acquisition strategy will address the materiel solutions identified out of the multiple Biosurveillance (BSV) related Analysis of Alternatives (AoA's).											
CRITICAL REAGENTS PROGRAM (CRP)											
The Critical Reagents Program's (CRP) strategy establishes a core research and development capability to develop biological threat agent reference materials (antigens, nucleic acids, and antibodies) and detection and diagnostic assays for biothreat agent detection that shall be used across multiple detection and diagnostic platforms. In addition, this strategy includes a formal, validated advanced development process for transitioning new assays into production and subsequent integration with the appropriate detection/diagnostic platform.											

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<p>EMERGING INFECTIOUS DISEASES - THERAPUTIC (EID TX)</p> <p>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. Following successful FDA approval of the drug against influenza in 3QFY16, EID Tx will utilize an incremental approach to label extensions of this broad spectrum therapeutic. The development strategy for additional label extensions of the antiviral drug consists of detailed characterization of antiviral activities of the broad-spectrum compound against multiple virus families using cell-based and animal model systems. Using the results of the cell-based assays efficacy assessment of the drug against high-priority viruses of biodefense concern will be performed using small animal studies. The results of the proof of concept studies will determine the best candidate to move forward for the Label Extension (LE) starting in FY15.</p> <p>HEMORRHAGIC FEVER VIRUS (HFV)</p> <p>The acquisition strategy uses an evaluation of a drug candidate against the lethal Ebola Zaire viruses. Following a successful Milestone B and entry into SDD phase, the program will conduct expanded human clinical safety studies, definitive animal efficacy, and toxicology studies, required for FDA approval. The performer will submit a New Drug Application for the Ebola Zaire therapeutic during the SDD 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.</p> <p>NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)</p> <p>The term "Role" is used to describe the stratification of the four tiers in which medical support is organized, on a progressive basis, to conduct treatment, evaluation, resupply, and functions essential to the maintenance of the health of the force. Role 3 support is normally provided at Division or Service equivalent level and includes specialist laboratory resources. The NGDS Inc 1 program has a streamlined MS A to MS C - Limited Deployment acquisition strategy. The NGDS Inc 1 is intended to replace the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17. NGDS Increment 2 (NGDS Inc 2) will complement NGDS Inc 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.</p> <p>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.</p> <p>MB7 funds will support development, testing, and FDA approval of additional assays after system fielding.</p> <p>BOTULINUM VACCINE (VAC BOT)</p>		

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<p>The Prime System Contractor (Dynport Vaccine Company/DVC LLC, Frederick MD) will function as the FDA regulatory sponsor and will perform all ancillary, regulatory, quality assurance, and data management as required by the FDA. The current budget supports development through FDA licensure of a recombinant bivalent (A and B) botulinum vaccine. Other serotypes will be developed through an evolutionary approach, as funding becomes available. The Advanced Component Development and Prototypes (ACD&P) phase included the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine was evaluated for safety and immunogenicity in a small human clinical trial (Phase 1). During the Engineering Manufacturing Development (EMD) Phase, the prime contractor stabilized the vaccine formulation, validated the manufacturing process and testing protocols, optimized the delivery systems and manufactured consistency lots. Phase 2 clinical trials were performed and provided additional safety data. The remaining efforts to be conducted during the SDD phase include the Phase 3 clinical trial to demonstrate safety in an expanded volunteer population and evaluation of efficacy in pivotal animal studies to satisfy FDA requirements for the Animal Rule. The Low rate Initial Production (LRIP) decision will be conducted after the manufacturing process has been validated and consistency lots have been produced. A Biologics License Application is submitted to the FDA will all clinical, nonclinical, and manufacturing data. The FDA grants licensure to products that are determined to be safe and efficacious.</p> <p>PLAGUE VACCINE (VAC PLG)</p> <p>The Advanced Component Development and Prototypes (ACD&P) phase included the manufacture of candidate current Good Manufacturing Practices (cGMP) lots, animal safety testing, and initial clinical trials. During this phase, the vaccine was evaluated for safety and immunogenicity in a small human clinical trial (Phase 1). In order to reduce technical program risk in the Plague vaccine program, the program office conducted competitive prototyping between a US vaccine candidate and a United Kingdom vaccine candidate. During the 2008 Resource Allocation Decision, the US Plague Vaccine candidate was selected for development through licensure under a Prime System Contract. The Prime System Contractor (Dynport Vaccine Company/DVC LLC, Frederick MD) currently functions as the FDA regulatory sponsor and performs all ancillary, regulatory, quality assurance, and data management as required by the FDA. A Project Arrangement is in place with the United Kingdom and Canada. During the Engineering Manufacturing Development (EMD) Phase, the prime contractor stabilized the vaccine formulation, validated the manufacturing process and testing protocols, optimized the delivery systems and manufactured consistency lots. Phase 2 clinical trials were performed and provided additional safety data. The remaining efforts to be conducted during the EMD phase include the Phase 3 clinical trial to demonstrate safety in an expanded volunteer population and evaluation of efficacy and duration of protection in pivotal animal studies to satisfy FDA requirements for the Animal Rule. The Low Rate Initial Production (LRIP) decision will be conducted after the manufacturing process has been validated and consistency lots have been produced. A Biologics License Application will be submitted to the FDA with all clinical, nonclinical, and manufacturing data. The FDA grants licensure to products that are determined to be safe and efficacious. Currently, the Phase 3 clinical trial has been delayed about 12-14 months due to new guidance from the FDA that all documentation concerning vaccine production (large scale engineering and consistency lot manufacturing) and formulation and Fill/Finish (vialing) must be completed and approved prior to the start of the Phase 3 clinical trial. This was normally done concurrently with the Phase 3 clinical trial.</p> <p>SPECIAL IMMUNIZATION PROGRAM (VAC SIP)</p> <p>The SIP effort is to store IND vaccines used to potentially provide additional protection to laboratory workers performing research on the infectious agents for Tularemia, Eastern Equine Encephalitis (EEE), Western Equine Encephalitis (WEE), Venezuelan Equine Encephalitis (VEE), and Q-Fever. Efforts include Good Manufacturing</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
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Practices (GMP) storage and periodic potency testing to support the FDA regulated Investigational New Drug (IND) reporting requirements. This Department of Defense program supports the Federal interagency with this effort, as well as academic and industry partners.		
<u>E. Performance Metrics</u> N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MB5 / <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** ADM - HW S - Establish ADM capability	C/CPFF	Nanotherapeutics. Inc. : Alachua, FL	56.383	13.990	Apr 2014	-		-		-		-	Continuing	Continuing	-
ADM - HW SB - Procure, Install and Test Equipment	C/CPFF	Nanotherapeutics. Inc. : Alachua, FL	38.488	24.238	Apr 2014	-		-		-		-	Continuing	Continuing	-
** BSV - HW SB - Purchase COTS Detectors for JUPITR Assessment Env. Detectors	MIPR	Defense Logistics Agency : Philadelphia, PA	0.000	5.513	Feb 2014	-		-		-		-	Continuing	Continuing	-
** CRP - HW C - Scale-up of Select Biological Threat Agent Reference Materials	MIPR	Various :	11.370	2.920	Jun 2014	2.879	Jun 2015	2.141	Jun 2016	-		2.141	Continuing	Continuing	-
CRP - HW C - Development of Select Biological Threat Agent Reference Materials and Assays	MIPR	Various :	3.526	6.901	Jun 2014	1.980	Jun 2015	1.195	Jun 2016	-		1.195	Continuing	Continuing	-
** EID TX - SW SB - TMT EID FLU	C/CPFF	MediVector Inc. : Boston, MA	56.869	88.946	Jan 2014	22.087	Dec 2014	9.366	Dec 2015	-		9.366	Continuing	Continuing	-
EID TX - SW SB - T705 Broad Spectrum Capability Development	C/CPFF	Defense Science & Technology Lab (DSTL) : Salisbury Wiltshire, UK	1.139	0.059	Nov 2014	-		-		-		-	Continuing	Continuing	-
EID TX - SW SB - T705 Broad Spectrum Capability Development #2	C/CPFF	University of Pittsburgh : Pittsburgh, PA	0.423	0.145	May 2014	-		-		-		-	Continuing	Continuing	-
EID TX - SW GFPR - T705 Broad Spectrum Capability Development	C/CPIF	TBD :	0.000	-		-		7.800	Dec 2015	-		7.800	Continuing	Continuing	-
** HFV - HFV - HW S - Pivotal Animal Efficacy Studies	C/CPIF	Tekmira Pharmaceuticals Corp. : Vancouver British Columbia, CN	0.000	2.500	Apr 2014	20.431	Jan 2015	18.094	Jan 2016	-		18.094	Continuing	Continuing	-
HW S - OGA Marburg Development	MIPR	Various :	0.000	-		-		3.906	Jan 2016	-		3.906	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) MB5 / MEDICAL BIOLOGICAL DEFENSE (EMD)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
HW S - Ebola Response Phase 2 clinical trials for TKM-Ebola targeting Guinea Variant	C/CPIF	Tekmira Pharmaceuticals Corp. : Vancouver British Columbia, CN	0.000	-		9.834	Feb 2015	-		-		-	Continuing	Continuing	-
** NGDS - HW C - Complete assay optimization for multiplex lateral flow immunoassay to support clinical trials	MIPR	TBD :	0.000	-		-		3.500	Jun 2016	-		3.500	Continuing	Continuing	-
** VAC BOT - HW S - Manufacturing, Validation and Consistency Lot Production	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	5.115	Mar 2014	14.551	Dec 2014	1.400	Dec 2015	-		1.400	Continuing	Continuing	-
HW S - Manufacturing Tech Transfer	MIPR	Battelle Memorial Institute : Columbus, OH	0.000	5.686	May 2014	4.200	Dec 2014	3.450	Jan 2016	-		3.450	Continuing	Continuing	-
** VAC PLG - HW S - Manufacturing, Validation, and Consistency Lot Production	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	7.855	Mar 2014	14.403	Dec 2014	3.400	Dec 2015	-		3.400	Continuing	Continuing	-
HW S - - Manufacturing Validation	MIPR	Battelle Memorial Institute : Columbus, OH	0.000	0.200	Mar 2014	-		-		-		-	Continuing	Continuing	-
Subtotal			168.198	164.068		90.365		54.252		-		54.252	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** BSV - ILS SB - Logistical Support to COTS AED as part of JUPITR ATD	MIPR	Various :	0.000	3.100	Mar 2014	-		-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) MB5 / MEDICAL BIOLOGICAL DEFENSE (EMD)					
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
ES C - Bio Defense Tactical Force support	Various	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.100	Jan 2014	-		-		-		-	Continuing	Continuing	-
** CRP - ES C - Select Biological Threat Agent Reference Material Support	MIPR	Various :	3.038	0.848	Jun 2014	0.928	Jun 2015	0.785	Jun 2016	-		0.785	Continuing	Continuing	-
CRP - ES C - Select Biological Threat Agent Reference Material Regulatory/Quality Assurance (QA) Support	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	1.197	0.328	Jun 2014	0.408	Jun 2015	0.318	Jun 2016	-		0.318	Continuing	Continuing	-
** NGDS - ES C - Studies and WIPT Support	MIPR	Various :	0.000	-		-		0.350	Jun 2016	-		0.350	Continuing	Continuing	-
** VAC BOT - TD/D C - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	11.978	4.145	Dec 2013	5.000	Dec 2014	3.000	Dec 2015	-		3.000	Continuing	Continuing	-
** VAC PLG - TD/D C - Regulatory Integration (Environmental and FDA Documentation) and Delivery System	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	11.978	4.145	Mar 2014	2.000	Dec 2014	1.500	Dec 2015	-		1.500	Continuing	Continuing	-
** VAC SIP - VAC SIP - Storage and Distribution of Vaccines	SS/FP	Fisher BioServices : Rockville, MD	0.000	0.326	Jan 2014	0.314	Dec 2014	0.350	Dec 2015	-		0.350	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		2.418		-		-		-	Continuing	Continuing	-
Subtotal			28.191	12.992		11.068		6.303		-		6.303	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) MB5 / MEDICAL BIOLOGICAL DEFENSE (EMD)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** EID TX - EID TX - SW SB - T705 Broad Spectrum Capability Development	PO	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	1.633	4.000	Sep 2014	-		-		-		-	Continuing	Continuing	-
** HFV - OTHT C - BSL4 Non-Clinical Animal Efficacy Studies	C/CPIF	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.000	-		10.000	Jan 2015	10.031	Jan 2016	-		10.031	Continuing	Continuing	-
** NGDS - OTHT C - Complete pre-clinical trials and initiate clinical trials for a multiplex lateral flow immunoassay diagnostic	MIPR	TBD :	0.000	-		-		2.668	Jun 2016	-		2.668	Continuing	Continuing	-
** VAC BOT - DTE C - VAC BOT - Clinical Trials - Nonclinical Studies	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	64.765	2.334	Dec 2014	15.811	Dec 2014	4.150	Dec 2015	-		4.150	Continuing	Continuing	-
** VAC PLG - DTE C - PLG - Clinical Trials/Non-Clinical Studies	C/CPAF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	64.765	3.000	Mar 2014	15.811	Dec 2014	8.298	Dec 2015	-		8.298	Continuing	Continuing	-
** VAC SIP - OTHT C - Potency Testing of Vaccines	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	4.165	1.836	Mar 2014	0.987	Dec 2014	2.136	Dec 2015	-		2.136	Continuing	Continuing	-
Subtotal			135.328	11.170		42.609		27.283		-		27.283	-	-	-
Remarks															
USAMRIID will conduct testing acting as a sub-contractor to TEKMIRA. TEKMIRA will receive USAMRIID test data and write the final report.															

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) MB5 / MEDICAL BIOLOGICAL DEFENSE (EMD)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** ADM - PM/MS S - Program Management	Various	Various :	11.768	8.079	Nov 2013	-		-		-		-	Continuing	Continuing	-
** BSV - PM/MS S - Management Support to Commercial Off the Shelf AED as part of JUPITR ATD	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	0.400	Mar 2014	-		-		-		-	Continuing	Continuing	-
** CRP - PM/MS C - Product Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	2.019	0.820	Mar 2014	0.897	Mar 2015	0.755	Mar 2016	-		0.755	Continuing	Continuing	-
CRP - PM/MS C - Product Management Support	SS/FFP	Goldbelt Raven LLC. : Frederick, MD	6.611	1.469	Jun 2014	1.543	Jun 2015	1.384	Jun 2016	-		1.384	Continuing	Continuing	-
CRP - PM/MS C - Chem Bio Medical Systems Office	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.543	0.350	Jun 2014	0.437	Jun 2015	0.418	Jun 2016	-		0.418	Continuing	Continuing	-
** EID TX - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	2.507	-		1.517	Sep 2015	1.398	Sep 2016	-		1.398	Continuing	Continuing	-
EID TX - PM/MS SB - Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	1.382	2.154	Sep 2014	2.097	Jan 2015	2.160	Jan 2016	-		2.160	Continuing	Continuing	-
EID TX - PM/MS SB - Management Support #2	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.914	Sep 2014	0.578	Sep 2015	0.533	Sep 2016	-		0.533	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MB5 / <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
EID TX - PM/MS C - Contractor Systems Engineering/ Program Management Support	C/FP	TAURI GROUP LLC THE : Alexandria, VA	3.443	1.335	Feb 2014	1.129	Dec 2014	1.162	Dec 2015	-		1.162	Continuing	Continuing	-
EID TX - PM/MS C - Contractor Systems Engineering/ Program Management Support #2	C/FP	Various :	0.000	2.030	Aug 2014	1.176	Aug 2015	0.212	Aug 2016	-		0.212	Continuing	Continuing	-
** HFV - PM/MS SB - Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	-		2.081	Sep 2015	2.951	Sep 2016	-		2.951	Continuing	Continuing	-
HFV - PM/MS SB - Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	-		0.793	Sep 2015	1.124	Sep 2016	-		1.124	Continuing	Continuing	-
PM/MS SB - Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Belvoir, VA	0.000	0.965	Sep 2014	0.994	Jan 2015	1.024	Jan 2016	-		1.024	Continuing	Continuing	-
PM/MS C - Contractor Systems Engineering/ Program Management Support	C/FP	Various :	0.000	0.553	Aug 2014	0.728	Aug 2015	0.908	Aug 2016	-		0.908	Continuing	Continuing	-
PM/MS C - Contractor Systems Engineering/ Program Management Support #2	C/FP	Patricio Enterprises : Inc., Woodbridge, VA	0.000	1.364	Dec 2013	1.756	Aug 2015	2.160	Aug 2016	-		2.160	Continuing	Continuing	-
PM/MS C - Contractor/ Systems Engineering/ Program Management Support	C/FP	Noblis Inc. : Falls Church, VA	0.000	0.970	Dec 2013	1.247	Aug 2015	1.532	Aug 2016	-		1.532	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MB5 / <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
PM/MS C - Contractor Systems Engineering/ Program Management Support #3	C/FP	TASC : INC., Andover, MA	0.000	0.931	Dec 2013	1.202	Aug 2015	1.481	Aug 2016	-		1.481	Continuing	Continuing	-
** NGDS - PM/MS S - Product Management Support	Allot	TBD :	0.000	-		-		0.732	Dec 2015	-		0.732	Continuing	Continuing	-
PM/MS SB - Product Management Systems Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	-		-		0.750	Jun 2016	-		0.750	Continuing	Continuing	-
** VAC BOT - PM/MS C - JPM Chem/Bio Medical Systems (JPM CBMS), Fort Detrick, MD	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	7.848	2.386	Mar 2014	3.000	Dec 2014	2.500	Dec 2015	-		2.500	Continuing	Continuing	-
VAC BOT - PM/MS S - Joint Vaccine Acquisition Program Management	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	30.990	22.490	Dec 2014	10.000	Dec 2014	2.274	Dec 2015	-		2.274	Continuing	Continuing	-
VAC BOT - PM/MS S - Contractor Systems Engineering/Program Management Support	SS/FFP	Goldbelt Raven LLC. : Frederick, MD	5.560	5.145	Mar 2014	-		-		-		-	Continuing	Continuing	-
** VAC PLG - PM/MS S - Joint Vaccine Acquisition Program Management Office	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	7.848	7.888	Mar 2014	1.600	Dec 2014	1.700	Dec 2015	-		1.700	Continuing	Continuing	-
VAC PLG - PM/MS S - Program Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	30.990	5.000	Mar 2014	2.400	Dec 2014	2.600	Dec 2015	-		2.600	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) MB5 / MEDICAL BIOLOGICAL DEFENSE (EMD)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** VAC SIP - PM/MS SB - Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.469	0.275	Mar 2014	0.280	Mar 2015	0.285	Mar 2016	-		0.285	Continuing	Continuing	-
Subtotal			112.978	65.518		35.455		30.043		-		30.043	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			444.695	253.748		179.497		117.881		-		117.881	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MB5 / <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** ADM - Facility Operations Feasibility Plan																												
ADM - Procure Equipment																												
ADM - Establish ADM Capability																												
ADM - Commissioning and Validation																												
ADM - Qualification And Commissioning Report																												
** BSV - JUPITR ATD																												
BSV - JUPITR ATD Op Demo																												
BSV - Biological Identification Capability Sets (BICS) Exercises																												
BSV - Assessment of Environmental Detectors (AED)																												
BSV - Residual Purchase - Additional Systems																												
BSV - Transition of purchase of residual end items																												
** CRP - Expand Select Biological Threat Agent Reference Materials																												
CRP - Development of Assays																												
CRP - Development and Implementation of Quality Initiatives, Validation Program, and Systems Engineering, QA/QC testing																												
CRP - ISO certification																												
CRP - Enabling early warning tools and information exchange																												
CRP - Surveillance capabilities																												
** EID TX - EID TX-Flu Conduct Phase 2 Bridging Safety Study																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MB5 / <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
EID TX - EID TX-Flu Phase 3 Clinical Trials required for FDA approval																												
EID TX - EID TX-Flu Manufacture FDA Required Registration Batches																												
EID TX - EID TX-Flu Prepare and Submit NDA Package to FDA																												
EID TX - EID TX-Flu MS C Decision																												
EID TX - EID TX-LE Milestone B																												
EID TX - EID TX-LE Initiate and Complete Dose Ranging and Schedule Studies																												
** HFV - Ebola Milestone B Decision																												
HFV - Pivotal Animal Efficacy Studies for HFV MCMs																												
HFV - Ebola Phase 3 Expanded Safety Clinical Trial																												
** NGDS - NGDS TD Phase																												
NGDS - NGDS EMD Phase																												
NGDS - FDA clearance for additional assays, Integration, Connectivity																												
** VAC BOT - Non-Clinical Testing (Pivotal Efficacy)																												
VAC BOT - Technology Transfer to New CMO/ Manufacturing & Production of Consistency Lots																												
VAC BOT - Phase 3 Clinical Trial (A/B)																												
VAC BOT - Milestone C/LRIP																												
** VAC PLG - Consistency Lot Production																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MB5 / <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
VAC PLG - FDA Required Passive Transfer Studies																												
VAC PLG - Non-Clinical Studies Pivotal Animal Efficacy																												
VAC PLG - Milestone C/LRIP																												
VAC PLG - Phase 3 Clinical Trial/IND Submission for Consistency Lot Production																												
VAC PLG - Biological Licensure Application (BLA) Submission																												
VAC PLG - FDA Licensure																												
** VAC SIP - Storage, distribution, potency testing, biosurety compliance activities																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MB5 / <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** ADM - Facility Operations Feasibility Plan	1	2014	2	2014
ADM - Procure Equipment	1	2014	1	2015
ADM - Establish ADM Capability	1	2014	2	2015
ADM - Commissioning and Validation	1	2014	2	2015
ADM - Qualification And Commissioning Report	2	2015	2	2015
** BSV - JUPITR ATD	1	2014	4	2017
BSV - JUPITR ATD Op Demo	3	2015	4	2015
BSV - Biological Identification Capability Sets (BICS) Exercises	1	2014	3	2015
BSV - Assessment of Environmental Detectors (AED)	1	2014	3	2014
BSV - Residual Purchase - Additional Systems	2	2016	2	2016
BSV - Transition of purchase of residual end items	4	2015	4	2017
** CRP - Expand Select Biological Threat Agent Reference Materials	1	2014	2	2017
CRP - Development of Assays	1	2014	2	2017
CRP - Development and Implementation of Quality Initiatives, Validation Program, and Systems Engineering, QA/QC testing	1	2014	2	2017
CRP - ISO certification	1	2014	4	2017
CRP - Enabling early warning tools and information exchange	1	2014	4	2017
CRP - Surveillance capabilities	1	2014	4	2017
** EID TX - EID TX-Flu Conduct Phase 2 Bridging Safety Study	1	2014	2	2014
EID TX - EID TX-Flu Phase 3 Clinical Trials required for FDA approval	1	2014	3	2015
EID TX - EID TX-Flu Manufacture FDA Required Registration Batches	4	2014	4	2015
EID TX - EID TX-Flu Prepare and Submit NDA Package to FDA	2	2015	3	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MB5 / <i>MEDICAL BIOLOGICAL DEFENSE (EMD)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
EID TX - EID TX-Flu MS C Decision	3	2016	3	2016
EID TX - EID TX-LE Milestone B	4	2015	4	2015
EID TX - EID TX-LE Initiate and Complete Dose Ranging and Schedule Studies	1	2016	4	2016
** HFV - Ebola Milestone B Decision	2	2015	2	2015
HFV - Pivotal Animal Efficacy Studies for HFV MCMs	1	2015	3	2017
HFV - Ebola Phase 3 Expanded Safety Clinical Trial	1	2017	4	2018
** NGDS - NGDS TD Phase	4	2014	2	2016
NGDS - NGDS EMD Phase	2	2016	3	2018
NGDS - FDA clearance for additional assays, Integration, Connectivity	3	2016	3	2016
** VAC BOT - Non-Clinical Testing (Pivotal Efficacy)	1	2014	3	2020
VAC BOT - Technology Transfer to New CMO/Manufacturing & Production of Consistency Lots	2	2014	2	2017
VAC BOT - Phase 3 Clinical Trial (A/B)	3	2018	3	2020
VAC BOT - Milestone C/LRIP	4	2017	4	2017
** VAC PLG - Consistency Lot Production	1	2014	1	2015
VAC PLG - FDA Required Passive Transfer Studies	1	2014	4	2014
VAC PLG - Non-Clinical Studies Pivotal Animal Efficacy	1	2015	3	2016
VAC PLG - Milestone C/LRIP	2	2015	2	2015
VAC PLG - Phase 3 Clinical Trial/IND Submission for Consistency Lot Production	2	2016	2	2018
VAC PLG - Biological Licensure Application (BLA) Submission	2	2018	2	2018
VAC PLG - FDA Licensure	1	2019	1	2019
** VAC SIP - Storage, distribution, potency testing, biosurety compliance activities	1	2014	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) MC5 / MEDICAL CHEMICAL DEFENSE (EMD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MC5: MEDICAL CHEMICAL DEFENSE (EMD)	-	40.973	48.529	42.913	-	42.913	49.322	38.153	25.158	6.371	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for the development of medical materiel and other medical equipment items necessary to provide an effective capability for medical defense against chemical warfare agent threats facing U.S. forces in the field. This project supports efforts in the System Development and Demonstration (SDD) phase of the acquisition strategy for prophylactic, pre-treatment, and therapeutic drugs and diagnostic medical devices for the protection, treatment, detection, and medical management of chemical warfare agent exposures. Project funds research and development of safety studies, manufacturing scale-up, process validation, drug interaction, performance test, and submission of the Food and Drug Administration (FDA) drug licensure application(s). This program currently funds: (1) Bioscavenger (BSCAV), a new capability, to be used as a prophylaxis against nerve agents; (2) Advanced Anticonvulsant System (AAS), which consists of the drug midazolam in an autoinjector, to be used as an enhanced treatment for nerve agent induced seizures and will be a replacement for the currently fielded Convulsant Antidote for Nerve Agent (CANA) autoinjector, which uses diazepam; and (3) Improved Nerve Agent Treatment System (INATS) an enhanced nerve agent treatment regimen consisting of an improved oxime to replace the current fielded oxime 2-pralidoxime chloride (2-PAM), a centrally acting therapeutic to increase survival, and studies to generate data to support use of pyridostigmine bromide (PB), as a pretreatment for nerve agents in addition to soman.

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

	FY 2014	FY 2015	FY 2016
Title: 1) AAS	1.000	-	-
FY 2014 Accomplishments: Completed activities associated with resubmission of the NDA prior to FDA licensure.			
Title: 2) AAS	4.704	-	-
FY 2014 Accomplishments: Initiated and completed market research of alternative autoinjector manufacturers and reverse engineering of the currently fielded autoinjector.			
Title: 3) BSCAV	11.972	-	-
FY 2014 Accomplishments: Continued and completed re-establishment of a manufacturing line.			
Title: 4) BSCAV	16.776	-	-
FY 2014 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 5		R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		Project (Number/Name) MC5 / <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Initiated and completed medium scale technology transfer manufacturing runs.					
Title: 5) BSCAV FY 2014 Accomplishments: Initiated storage and stability testing of purified product. FY 2015 Plans: Continue storage and stability testing of purified product. FY 2016 Plans: Continue storage and stability testing of purified product.			2.818	2.000	2.050
Title: 6) BSCAV FY 2015 Plans: Initiated engineering and scale-up manufacturing runs. FY 2016 Plans: Complete engineering and scale-up manufacturing runs.			-	11.048	5.000
Title: 7) BSCAV FY 2015 Plans: Initiate pilot nonclinical toxicity and pharmacokinetic (PK) and efficacy studies. FY 2016 Plans: Complete pilot nonclinical toxicity and pharmacokinetic (PK) and efficacy studies.			-	9.312	5.195
Title: 8) BSCAV FY 2015 Plans: Initiate Current Good Manufacturing Practice (cGMP) manufacturing for clinical and nonclinical studies. FY 2016 Plans: Continue cGMP manufacturing for clinical and nonclinical studies.			-	10.829	6.543
Title: 9) BSCAV FY 2015 Plans: Initiate phase 1 clinical pharmacokinetic (PK) and safety studies. FY 2016 Plans:			-	9.522	7.285

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 5		R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>		Project (Number/Name) MC5 / <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Complete phase 1 clinical pharmacokinetic (PK) and safety studies.					
Title: 10) BSCAV FY 2016 Plans: Initiate Phase 2 clinical and safety studies.			-	-	5.542
Title: 11) INATS FY 2014 Accomplishments: Initiated nonclinical studies to expand indications for the currently fielded pyridostigmine bromide (PB) component of the INATS system of systems. FY 2015 Plans: Continue nonclinical studies to expand indications for pyridostigmine bromide (PB). FY 2016 Plans: Continue nonclinical studies to expand indications for pyridostigmine bromide (PB).			3.703	0.840	1.450
Title: 12) INATS FY 2015 Plans: Initiate and complete centrally-acting formulation development.			-	3.295	-
Title: 13) INATS FY 2015 Plans: Initiate nonclinical studies to evaluate the efficacy of centrally-acting therapeutics with fielded oxime FY 2016 Plans: Complete nonclinical studies to evaluate the efficacy of centrally-acting therapeutics with fielded oxime.			-	0.995	2.703
Title: 14) INATS FY 2016 Plans: Initiate and complete pilot scale development of oxime bulk drug substance (BDS) and final drug product (FDP).			-	-	4.326
Title: 15) INATS FY 2016 Plans: Initiate oxime current Good Manufacturing Practice (cGMP) efforts and manufacture of clinical trial material.			-	-	2.819
Title: 16) SBIR/STTR			-	0.688	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program							Date: February 2015		
Appropriation/Budget Activity 0400 / 5				R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>			Project (Number/Name) MC5 / <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>		

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2014	FY 2015	FY 2016
<i>FY 2015 Plans:</i> SBIR/STTR - FY15 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	40.973	48.529	42.913

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• JM6677: <i>ADVANCED ANTICONVULSANT SYSTEM (AAS)</i>	-	2.500	11.133	-	11.133	-	-	-	-	-	13.633
Remarks											
D. Acquisition Strategy											
ADVANCED ANTICONVULSANT SYSTEM (AAS)											
<p>The Advanced Anticonvulsant System, consists of Midazolam in an autoinjector for treatment of nerve agent induced seizures. Midazolam, injected intramuscularly, will treat traditional nerve agent and non-traditional agent-induced seizures and prevent subsequent neurological damage. Midazolam is more water-soluble than diazepam (the currently fielded medication to control nerve agent-induced seizures) and terminates nerve agent-induced seizures more quickly than diazepam. AAS will not eliminate the need for other protective and therapeutic systems.</p> <p>A contractor shall be responsible for conducting activities associated with drug development in a manner consistent with eventual approval by the Food and Drug Administration (FDA). The contractor shall sponsor the drug to the FDA and hold all approvals and/or licenses. During the System Development and Demonstration (SDD) Phase, large scale manufacturing, Phase 2 human clinical safety studies and definitive animal efficacy studies will be conducted. FDA approval of the countermeasure is an exit criterion for the SDD phase. During the Production and Deployment Phase, sufficient quantities of product to meet Initial Operational Capability will be purchased. Subsequent purchases will be made by the Defense Logistics Agency. Any post-marketing surveillance requested by the FDA will be the responsibility of the contractor.</p> <p>In addition, the program will assess the viability of establishing an alternative manufacturing capability for currently fielded autoinjectors used for therapeutic treatment and medical management of chemical warfare agent exposures.</p> <p>BIOSCAVENGER (BSCAV)</p>											

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MC5 / <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>
<p>Used a serial evaluation of candidates to achieve competitive prototyping in the Technology Development Phase which culminated in a down-select decision. The Bioscavenger program issued a Request For Proposal (RFP) to select the best value for the government for a prophylaxis to support an initial limited user group. During the System Development and Demonstration (SDD) phase the program will continue to exercise management oversight with system integration support of a commercial partner to ensure that manufacturing of the product is in accordance with Food and Drug Administration (FDA) regulations and guidelines. The RFP for product manufacturing includes options for transition to the Medical Countermeasures Initiative (MCM) Advanced Development and Manufacturing (ADM) capability. Prior to FDA licensure, a commercial partner will perform a Phase 2 human clinical safety study, definitive animal efficacy studies, and toxicology studies. The system integrator will also develop and manufacture a product formulation and delivery system and will submit a New Drug Application and seek FDA approval. The SDD phase will culminate in FDA licensure of the Bioscavenger. During the Production and Deployment phase, the Bioscavenger program, in conjunction with a commercial partner, will pursue full rate production and conduct any FDA-mandated post-marketing surveillance studies. Concurrently the Bioscavenger program will conduct an analysis of alternative manufacturing technologies, investigate additional product indications, and pursue an expanded force prophylaxis once alternate technologies have matured.</p> <p>IMPROVED NERVE AGENT TREATMENT SYSTEM (INATS)</p> <p>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.</p> <p>INATS' evolutionary Acquisition Strategy, recently expanded by the Joint Program Executive Office, Chemical and Biological Defense (JPEO-CBD) 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 Milestone B and C reviews for the oxime and CA developments, and decision reviews for PB expansion beyond the combined-development Technology Maturation and Risk Reduction (TM&RR) Phase will be conducted. In the TMRR 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 continue as system integrator with integration support from commercial partners to ensure that INATS development and manufacture is in accordance with Food and Drug Administration (FDA) regulations and guidelines; the commercial integration 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 system integrator, with a commercial partner, will pursue full-rate and stockpile production and will conduct any FDA mandated post-marketing surveillance studies; the system integrator will transfer contracting/logistical responsibilities to the Defense Logistics Agency (DLA) while remaining to monitor program performance through disposal as the life-cycle manager.</p>		

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) MC5 / MEDICAL CHEMICAL DEFENSE (EMD)
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) MC5 / MEDICAL CHEMICAL DEFENSE (EMD)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** AAS - SW C - Resubmission of NDA	C/CPIF	Meridian Medical Technologies Inc. : Columbia, MD	0.000	0.830	Jun 2014	-		-		-		-	Continuing	Continuing	-
HW S - Alternative Autoinjector	PO	Battelle Memorial Institute : Columbus, OH	0.000	4.154	Jun 2014	-		-		-		-	Continuing	Continuing	-
** BSCAV - BSCAV - HW C - Re-establish manufacturing line	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	14.200	10.450	Dec 2013	-		-		-		-	Continuing	Continuing	-
BSCAV - HW S - cGMP Manufacturing and Process Validation	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	14.643	Mar 2014	9.740	Feb 2015	6.440	Feb 2016	-		6.440	Continuing	Continuing	-
BSCAV - SW S - Engineering and Scale up Manufacturing	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	-		9.650	Mar 2015	4.100	Mar 2016	-		4.100	Continuing	Continuing	-
** INATS - INATS - HW C - Pilot Scale Development of Drug Product	PO	TBD :	0.000	-		-		3.983	Jan 2016	-		3.983	Continuing	Continuing	-
INATS - HW C - cGMP Efforts and Manufacture of Material	PO	TBD :	0.000	-		-		3.040	Apr 2016	-		3.040	Continuing	Continuing	-
INATS - HW S - Centrally Acting Formulation Development	PO	Battelle Memorial Institute : Columbus, OH	0.000	-		2.625	Dec 2014	-		-		-	Continuing	Continuing	-
Subtotal			14.200	30.077		22.015		17.563		-		17.563	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** INATS - INATS - ILS S - Regulatory Support	PO	Battelle Memorial Institute : Columbus, OH	0.000	0.224	Jun 2014	0.205	Jun 2015	0.245	Jun 2016	-		0.245	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>						Project (Number/Name) MC5 / <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.688		-		-		-	Continuing	Continuing	-
Subtotal			0.000	0.224		0.893		0.245		-		0.245	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** BSCAV - BSCAV - OTH S - Stability Testing	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	1.400	1.430	Jan 2014	1.754	Jan 2015	1.920	Jan 2016	-		1.920	Continuing	Continuing	-
BSCAV - OTH S - Phase 1 PK and Safety Studies	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	-		8.807	Mar 2015	5.940	Mar 2016	-		5.940	Continuing	Continuing	-
BSCAV - OTH S - Phase 2 Clinical Trial	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	-		-		4.235	Dec 2015	-		4.235	Continuing	Continuing	-
BSCAV - OTH S - Pilot Nonclinical PK Efficacy Studies	C/CPFF	DynPort Vaccine Company (DVC) LLC. : Frederick, MD	0.000	-		8.360	Jan 2015	4.250	Dec 2015	-		4.250	Continuing	Continuing	-
** INATS - INATS - DTE S - Nonclinical Studies for PB	PO	Battelle Memorial Institute : Columbus, OH	0.000	3.194	Jan 2014	0.700	Jan 2015	0.910	Jan 2016	-		0.910	Continuing	Continuing	-
INATS - DTE S - Centrally Acting Nonclinical Studies - Oxime / 2-PAM	PO	Battelle Memorial Institute : Columbus, OH	0.000	-		0.650	Dec 2014	1.960	Dec 2015	-		1.960	Continuing	Continuing	-
Subtotal			1.400	4.624		20.271		19.215		-		19.215	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) MC5 / MEDICAL CHEMICAL DEFENSE (EMD)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** AAS - PM/MS C - Medical Countermeasure Systems (MCS)	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	1.377	0.350	Dec 2013	-		-		-		-	Continuing	Continuing	-
PM/MS S - Program Management Support	PO	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.370	Sep 2014	-		-		-		-	Continuing	Continuing	-
** BSCAV - BSCAV - PM/MS S - MCS Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.701	1.347	Mar 2014	1.100	Mar 2015	1.300	Mar 2016	-		1.300	Continuing	Continuing	-
BSCAV - PM/MS S - Product Management Support	C/FFP	Various :	0.730	1.440	Jun 2014	1.460	Jun 2015	1.470	Jun 2016	-		1.470	Continuing	Continuing	-
BSCAV - PM/MS S - Product Management Support #2	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.215	0.581	Mar 2014	0.440	Mar 2015	0.460	Mar 2016	-		0.460	Continuing	Continuing	-
BSCAV - PM/MS C - Program Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.150	1.675	Sep 2014	1.400	Sep 2015	1.500	Sep 2016	-		1.500	Continuing	Continuing	-
** INATS - INATS - PM/MS S - Product Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	0.145	Dec 2013	0.155	Dec 2014	0.160	Dec 2015	-		0.160	Continuing	Continuing	-
INATS - PM/MS S - Program Management Support	Allot	JPEO Chem/Bio Defense (JPEO-CBD) : Aberdeen Proving Ground, MD	0.000	0.140	Sep 2014	0.330	Sep 2015	0.480	Sep 2016	-		0.480	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015		
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>				Project (Number/Name) MC5 / <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>				

Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
INATS - PM/MS S - Product Management Support	C/FFP	Various :	0.000	-		0.465	Jun 2015	0.520	Jun 2016	-		0.520	Continuing	Continuing	-
Subtotal			3.173	6.048		5.350		5.890		-		5.890	-	-	-

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.773	40.973	48.529	42.913	-	42.913	-	-	-

Remarks

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

Date: February 2015

Appropriation/Budget Activity

0400 / 5

R-1 Program Element (Number/Name)

PE 0604384BP / CHEMICAL/BIOLOGICAL
DEFENSE (EMD)

Project (Number/Name)

MC5 / MEDICAL CHEMICAL DEFENSE
(EMD)

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** AAS - New Drug Application (NDA) Preparation and Submission																												
AAS - Alternative autoinjector source development																												
** BSCAV - Establish Manufacturing Line and Complete Medium Scale Manufacturing Runs																												
BSCAV - Storage and Stability Testing of Purified Product																												
BSCAV - Engineering and Scale up Manufacturing																												
BSCAV - Manufacturing & Process Qualification at Small Scale																												
BSCAV - Nonclinical Toxicity PK and LD50 Studies																												
BSCAV - cGMP Manufacturing																												
BSCAV - Phase 1 Pilot PK and Clinical Studies																												
BSCAV - Milestone C																												
BSCAV - Phase 2 Clinical Trial																												
BSCAV - Conduct PK and efficacy bridging studies																												
** INATS - Pre SDD Review																												
INATS - Milestone B																												
INATS - Centrally Acting Formulation Development																												
INATS - Nonclinical Studies - Centrally Acting																												
INATS - PB Studies																												
INATS - Development of BDS/FDP - Oxime																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program																					Date: February 2015											
Appropriation/Budget Activity 0400 / 5										R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)										Project (Number/Name) MC5 / MEDICAL CHEMICAL DEFENSE (EMD)												
					FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
					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 - Manufacture of Clinical Trial Material					[REDACTED]																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) MC5 / <i>MEDICAL CHEMICAL DEFENSE (EMD)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** AAS - New Drug Application (NDA) Preparation and Submission	1	2014	4	2014
AAS - Alternative autoinjector source development	2	2014	4	2014
** BSCAV - Establish Manufacturing Line and Complete Medium Scale Manufacturing Runs	1	2014	4	2014
BSCAV - Storage and Stability Testing of Purified Product	1	2014	4	2017
BSCAV - Engineering and Scale up Manufacturing	2	2014	4	2015
BSCAV - Manufacturing & Process Qualification at Small Scale	3	2014	1	2017
BSCAV - Nonclinical Toxicity PK and LD50 Studies	1	2015	1	2017
BSCAV - cGMP Manufacturing	1	2015	3	2018
BSCAV - Phase 1 Pilot PK and Clinical Studies	2	2015	1	2017
BSCAV - Milestone C	3	2018	3	2018
BSCAV - Phase 2 Clinical Trial	1	2016	1	2019
BSCAV - Conduct PK and efficacy bridging studies	1	2014	1	2014
** INATS - Pre SDD Review	3	2015	3	2015
INATS - Milestone B	1	2016	1	2016
INATS - Centrally Acting Formulation Development	1	2015	4	2015
INATS - Nonclinical Studies - Centrally Acting	1	2015	3	2016
INATS - PB Studies	3	2014	2	2017
INATS - Development of BDS/FDP - Oxime	2	2016	4	2016
INATS - Manufacture of Clinical Trial Material	4	2016	2	2017

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) TE5 / TEST & EVALUATION (EMD)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
TE5: TEST & EVALUATION (EMD)	-	22.867	9.176	6.053	-	6.053	6.255	6.493	6.311	6.310	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 four groups to include: (1) Sense Laboratory (Chemical); (2) Sense Laboratory ((Biological); (3) Sense (Field); and (4) Individual Protection, Collective Protection and Decontamination (Shield and Sustain).

(1) Sense Laboratory (Chemical) : The products for this area are the Dynamic Test Chamber (DTC) for chemical point sensors, and Non-Traditional Agent Defense Test System (NTADTS). The DTC provides a new capability for testing chemical point detection systems against chemical warfare agents in various environmental conditions. The NTADTS provides a new capability to conduct chemical defense testing against current and emerging threats. The NTADTS supports testing of Decontamination, Collective Protection, Individual Protection, and Contamination Avoidance products. 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).

(2) Sense Laboratory (Biological): The product for this area is the Whole System Live Agent Test (WSLAT) Chamber. The WSLAT Chamber supports testing of all biological point detection systems in production configuration in biological live agent Biological Safety Level 3 (BSL-3) environments. The CBD acquisition programs supported are the Joint Biological Tactical Detection System (JBTDTS) and the Joint USFK Point and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD).

(3) Sense (Field): The product for this area is a fully instrumented simulant Test Grid. The Test Grid effort provides a fully instrumented grid for chemical and biological simulant field test capabilities that integrate referee systems; dissemination equipment; cloud tracking equipment; meteorological equipment; and test 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).

(4) Individual Protection, Collective Protection and Decontamination (Shield and Sustain): IPEMS provides an articulated robotic mannequin that simulates Warfighters activities and includes under ensemble agent sensing capability for evaluating IPE against chemical warfare agents. IPEMS consists of an articulated robotic mannequin, exposure chamber, control room, and real time under-ensemble sensor system. The individual protective equipment CBD programs supported include: Uniform Integrated Protection Ensemble Increment 1 (UIPE 1), UIPE Increment 2, Joint Service Aircrew Mask Fixed Wing (JSAM FW) and Rotary Wing (JSAM RW), and the Joint Service General Purpose Mask (JSGPM).

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)	Project (Number/Name) TE5 / TEST & EVALUATION (EMD)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Title: 1) PD TESS - Dynamic Test Chamber (DTC) FY 2014 Accomplishments: Supported pre-validation of chamber. FY 2015 Plans: Initiate validation of chamber. FY 2016 Plans: Validate chamber. Initiate upgrade for Next Generation Chemical Detector (NGCD) use.		1.612	0.463	1.211
Title: 2) PD TESS - Non-Traditional Agent Defense Test System (NTADTS) FY 2014 Accomplishments: Continued verification and test system commissioning. FY 2015 Plans: Complete test system validation. Transition test system to the Chemical and Biological (CB) Test and Evaluation (T&E) community. FY 2016 Plans: Transition additional validated test subsystems to the CB T&E community.		6.888	4.272	2.502
Title: 3) PD TESS - Test Grid FY 2014 Accomplishments: Completed component verification. Initiated transition planning of Test Grid capabilities. FY 2015 Plans: Complete validation and transition initial capability. Initiate test capability upgrade. FY 2016 Plans: Complete verification and validation of test capability upgrade IOC and transition of capabilities to CB T&E community.		12.017	4.316	2.340
Title: 4) PD TESS - Joint Biological Tactical Detection System Test Infrastructure FY 2014 Accomplishments: Conducted validation activities on the Whole System Live Agent (WSLAT) Chamber for modifications supporting JBTDS Test Infrastructure.		0.836	-	-
Title: 5) PD TESS Management Services FY 2014 Accomplishments:		1.514	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program							Date: February 2015		
Appropriation/Budget Activity 0400 / 5				R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>			Project (Number/Name) TE5 / <i>TEST & EVALUATION (EMD)</i>		

B. Accomplishments/Planned Programs (\$ in Millions)				FY 2014	FY 2015	FY 2016
Continued to provide headquarters-level program/financial management, technology assessment, contracting, acquisition oversight and technical support.						
Title: 6) SBIR/STTR				-	0.125	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.						
Accomplishments/Planned Programs Subtotals				22.867	9.176	6.053

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u> <u>Base</u>	<u>FY 2016</u> <u>OCO</u>	<u>FY 2016</u> <u>Total</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• TE7: <i>TEST & EVALUATION (OP SYS DEV)</i>	3.646	5.984	4.091	-	4.091	5.107	5.169	5.376	5.461	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
TEST EQUIPMENT, STRATEGY & SUPPORT (PD TESS)											
TESS efforts are supported through competitive contract actions, academia, and other Government agencies. Infrastructure solutions will leverage commercially available systems to provide state-of-the-art capabilities that address current and future CBDP test and evaluation needs.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) TE5 / <i>TEST & EVALUATION (EMD)</i>
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Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 - DTC Fabrication/ Installation	MIPR	Johns Hopkins University - Applied Physics Lab : Laurel, MD	3.974	0.550	Mar 2014	0.300	Mar 2015	0.600	Mar 2016	-		0.600	Continuing	Continuing	-
Test Infrastructure - HW S - Test Grid Instrumentation/Data Network	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	3.095	1.797	Mar 2014	0.600	Mar 2015	0.650	Mar 2016	-		0.650	Continuing	Continuing	-
Test Infrastructure - HW S - Test Grid Instrumentation Data Network	C/CPFF	ITT Information Systems : Alexandria, VA	18.942	8.359	Mar 2014	2.070	Mar 2015	1.050	Mar 2015	-		1.050	Continuing	Continuing	-
Test Infrastructure - HWS - NTA Defense Test System Design/Fabrication/ Installation	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.740	-		0.700	Mar 2015	-		-		-	Continuing	Continuing	-
Test Infrastructure - HW S - NTA Defense Test System Design, Fabrication, Install	C/CPFF	MRIGlobal : Kansas City, MO	3.900	5.766	Mar 2014	-		-		-		-	Continuing	Continuing	-
Test Infrastructure - HW S - Test Grid	MIPR	Various :	0.000	0.504	Mar 2014	0.124	Mar 2015	-		-		-	Continuing	Continuing	-
Test Infrastructure - SW GFPR - DTC Fabrication/ Installation	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.000	0.350	Mar 2014	-		0.200	Mar 2016	-		0.200	Continuing	Continuing	-
Test Infrastructure - HW S - NTADTS Support	MIPR	Various :	0.000	-		2.066	Mar 2015	1.800	Mar 2016	-		1.800	Continuing	Continuing	-
Test Infrastructure - HW S - DTC - Engineering Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.100	Mar 2014	-		-		-		-	Continuing	Continuing	-
Test Infrastructure - HW S - JBTDS TI - Engineering Support	MIPR	Dugway Proving Ground (DPG) : Dugway, UT	0.262	0.300	Mar 2014	-		-		-		-	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 5						R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)				Project (Number/Name) TE5 / TEST & EVALUATION (EMD)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
HW S - JBTDS TI - Engineering Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.239	0.110	Mar 2014	-		-		-		-	Continuing	Continuing	-
HW S - JBTDS TI - Engineering Support	MIPR	Various :	0.000	0.310	Mar 2014	-		-		-		-	Continuing	Continuing	-
Subtotal			31.152	18.146		5.860		4.300		-		4.300	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 - ES S - Integrated Product Team (IPT) Support	MIPR	Various :	11.464	2.807	Dec 2013	1.376	Dec 2014	0.400	Dec 2015	-		0.400	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.125		-		-		-	Continuing	Continuing	-
Subtotal			11.464	2.807		1.501		0.400		-		0.400	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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 - PM/MS S - Program Management/ Systems Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	3.934	1.914	Dec 2013	1.815	Dec 2014	1.353	Dec 2015	-		1.353	Continuing	Continuing	-
Subtotal			3.934	1.914		1.815		1.353		-		1.353	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program											Date: February 2015			
Appropriation/Budget Activity 0400 / 5					R-1 Program Element (Number/Name) PE 0604384BP / CHEMICAL/BIOLOGICAL DEFENSE (EMD)					Project (Number/Name) TE5 / TEST & EVALUATION (EMD)				
		Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals		46.550	22.867		9.176		6.053		-		6.053	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) TE5 / <i>TEST & EVALUATION (EMD)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** PD TESS - DTC - Pre-Validation/Validation																												
PD TESS - NTADTS - Design/Fabrication/Installation																												
PD TESS - NTA Defense Test System (NTADTS) Facility Upgrades for Next Class of Agents																												
PD TESS - Test Grid - Validate and Transition Initial Capability/Conduct Upgrades																												
PD TESS - Test Grid - IOC																												
PD TESS - Test Grid - FOC																												
PD TESS - WSLAT Chamber Design/Fabrication/Validation for JBTDTS TI																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 5	R-1 Program Element (Number/Name) PE 0604384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (EMD)</i>	Project (Number/Name) TE5 / <i>TEST & EVALUATION (EMD)</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** PD TESS - DTC - Pre-Validation/Validation	1	2014	2	2016
PD TESS - NTADTS - Design/Fabrication/Installation	1	2014	2	2015
PD TESS - NTA Defense Test System (NTADTS) Facility Upgrades for Next Class of Agents	3	2015	4	2020
PD TESS - Test Grid - Validate and Transition Initial Capability/Conduct Upgrades	1	2014	4	2018
PD TESS - Test Grid - IOC	3	2015	4	2016
PD TESS - Test Grid - FOC	2	2018	4	2018
PD TESS - WSLAT Chamber Design/Fabrication/Validation for JBTDS TI	1	2014	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support</i>					R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	92.253	105.927	102.264	-	102.264	108.292	108.880	109.369	111.101	Continuing	Continuing
DT6: <i>JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)</i>	-	4.602	4.868	4.744	-	4.744	5.116	5.254	5.254	5.325	Continuing	Continuing
DW6: <i>MAJOR RANGE AND TEST FACILITY BASE (MRTFB)</i>	-	52.667	56.166	51.878	-	51.878	52.475	52.190	52.212	53.039	Continuing	Continuing
LS6: <i>LABORATORY SUPPORT</i>	-	0.731	12.132	10.120	-	10.120	12.305	12.533	12.768	12.948	Continuing	Continuing
MS6: <i>RDT&E MGT SUPPORT</i>	-	31.258	28.782	31.411	-	31.411	34.462	34.885	35.116	35.654	Continuing	Continuing
O49: <i>JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM</i>	-	2.995	3.979	4.111	-	4.111	3.934	4.018	4.019	4.135	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Budget Activity includes research, development, testing and evaluation management support for the Department of Defense (DoD) Chemical and Biological Defense Program (CBDP).

Program Element 0605384BP supports Joint Doctrine and Training (Project DT6), sustains the technical test capability at West Desert Test Center (WDTC) (Project DW6); sustains the core Department of Defense (DoD) Science and Technology (S&T) laboratory infrastructure (Project LS6), provides for program management and financial management support (Project MS6), and supports the Joint Concept Development and Experimentation (JCDE) program (Project O49).

The Joint Training and Doctrine Support (DT6) project funds development of Joint Doctrine and Tactics, Techniques, and Procedures (TTPs) for developing CB defense systems. This project also funds CB modeling and simulation to support the Warfighter.

The Major Range and Test Facility Base (MRTFB) is a set of test installations, facilities, and ranges which are regarded as "national assets". These assets are sized, operated, and maintained primarily for DoD test and evaluation missions. However, the MRTFB facilities and ranges are also available to commercial and other users on a reimbursable basis. WDTC is designated as the primary element of the MRTFB to primarily conduct CB Defense test and evaluation. The DW6 Project provides operating funds to WDTC to ensure that DoD test customers are only charged direct costs of testing and that overhead expenses are centrally funded. It finances the required institutional test operating costs. Institutional test operating costs include institutional civilian and contractor labor; repair and maintenance of test instrumentation, equipment, and facilities; and replacement of test equipment.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support</i>		R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>
<p>The Laboratory Support (LS6) project funds laboratory infrastructure to maintain and enhance DoD infrastructure capabilities to counter an expanding threat space, exploit advances in technology; and develop and transition CB defense equipment and countermeasures to the Warfighter.</p> <p>The management support (MS6) project, provides management support for the DoD CBDP to allow program overview and integration of overall medical and non-medical programs by the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (ASD(NCB)), through the Deputy Assistant Secretary of Defense for Chemical Biological Defense Programs (DATSD(CBD)); funds management by the Defense Threat Reduction Agency (DTRA); Development, coordination, and approval of joint CBRND requirements, management of multi-service and joint CBRND doctrine, tactics, techniques and procedures; training, leader development, education, exercises, and development of the CBDP Program Objective Memorandum (POM) by the Joint Requirements Office; Joint RDA planning, input to the Annual Report to Congress and Program Objective Memorandum (POM) development by the Program Analysis and Integration Office (PAIO); review of Joint plans and the consolidated CB Defense POM Strategy by Army in its Executive Agent role.</p> <p>The management support project also funds the Test and Evaluation (T&E) Executive mission to establish test infrastructure investment strategy and adequate testing for Developmental Testing (DT) and Operational Testing (OT) of Department of Defense (DoD) Chemical Biological Defense (CBD) systems and components throughout the systems' acquisition life cycle, as required in the RDA Plan under the Joint Test Infrastructure Working Group (JTIWG) program. The JTIWG program funds T&E Early Involvement, test threat planning, Fielded Equipment Assessments, T&E studies, and T&E Standards planning and development to support testing the CBD systems for all services to include radiological, nuclear, medical T&E efforts.</p> <p>The Joint Concept Development and Experimentation (O49) project funds the planning, conduct, evaluation, and reporting on Joint tests (for other than developmental hardware) and accomplishment of operational research assessments in support of requirements received from the Services and the Combatant Commanders for already fielded equipment and systems.</p> <p>This Budget Activity also funds Program Element 0605502BP, which supports the Small Business Innovative Research (SBIR) program. The overall objective of the Chemical and Biological Defense (CBD) SBIR program is to improve the transition or transfer of innovative CBD technologies between DoD components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a CB environment using passive and active means as deterrents. These technologies include CB detection; information assessment (identification, modeling, and intelligence); contamination avoidance; and protection of both individual soldiers and equipment.</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program					Date: February 2015
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I</i> BA 6: <i>RDT&E Management Support</i>			R-1 Program Element (Number/Name) PE 0605384BP <i>I</i> <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>		
B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	89.346	105.944	108.472	-	108.472
Current President's Budget	92.253	105.927	102.264	-	102.264
Total Adjustments	2.907	-0.017	-6.208	-	-6.208
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.256	-			
• SBIR/STTR Transfer	-1.349	-			
• Other Adjustments	-	-0.017	-6.208	-	-6.208
 <u>Change Summary Explanation</u>					
Funding: N/A					
Schedule: N/A					
Technical: N/A					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605384BP / CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)				Project (Number/Name) DT6 / JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DT6: JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)	-	4.602	4.868	4.744	-	4.744	5.116	5.254	5.254	5.325	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The activities of this project directly support the Joint Service CB defense program; in particular, the development of Joint Chemical, Biological, Radiological, and Nuclear (CBRN) defense capability requirements and the improvement of CBRN defense related doctrine, education, training, and awareness at the Joint and Service levels. This effort provides for: (1) Development, coordination, and integration of Joint CBRN defense capability requirements; (2) Development/revision of medical and non-medical CBRN defense Multi-Service Tactics, Techniques, and Procedures (MTTP) and development/revision of Joint Doctrine and Tactics, Techniques, and Procedures (JTTP); (3) The CBDP Joint Senior Leader Course (JSLC); (4) Assistance in correcting training and doctrine deficiencies covered in the lessons learned process, combat operations, capability development studies and Department of Defense Inspector General (DODIG) and Government Accountability Office (GAO) reports and; (5) Support of current and planned CBRN defense studies, analysis, training, exercises, and war games; determine overlaps, duplication, and shortfalls; and build and execute programs to correct shortfalls in all aspects of CBRN defense across all DoD mission areas.

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

	FY 2014	FY 2015	FY 2016
Title: 1) JRO DT	4.602	4.815	4.744
<p>Description: The purpose of this requirement is to provide technical and subject matter expert (SME) support in the areas of: related Chemical, Biological, Radiological, and Nuclear Defense (CBRND)/Countering Weapons of Mass Destruction (CWMD); Joint and Multi-Service doctrine development; Joint and Service training, leadership development, education, and exercises.</p> <p>Specifically, support is needed to:</p> <ol style="list-style-type: none"> 1. Conduct technical reviews of Joint and Multi-service CBRN Defense/CWMD doctrinal materials and develop CBRND/CWMD related Multi-Service Tactics, Techniques, and Procedures (MTTP) manuals. 2. Plan and conduct CBRN defense/CWMD Joint Professional Military Education (JPME). 3. Provide CBRN defense/CWMD planning, execution and SME support to Combatant Command (CCMD) and Joint Task Force (JTF) level exercises. 4. Conduct staff and leader CBRN defense/CWMD training for CCMD and JTF level commands. <p>Provides support to the National Defense University (NDU) Center for the Study of Weapons of Mass Destruction (WMD) to support their efforts as the Chairman's focal point for CWMD JPME.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>	Project (Number/Name) DT6 / <i>JOINT DOCTRINE AND TRAINING SUPPORT (RDT&E MGT SUPPORT)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p><i>FY 2014 Accomplishments:</i> Provided support to Joint and Multi-service doctrine development. This includes preparation of various Joint publications which then inform Multi-Service Tactics, Techniques, and Procedures (MTTPs). JRO supported COCOM scenario development and controller/evaluator training by providing Subject Matter Experts (SMEs) to exercises. JRO supported training efforts at various Joint Senior Leadership schools.</p> <p><i>FY 2015 Plans:</i> Continue to support Joint and Multi-service doctrine development. This includes preparation of various Joint publications which then inform MTTPs. JRO will continue to support COCOM scenario development and controller/evaluator training by providing SMEs to exercises. JRO will continue to support training efforts at various Joint Senior Leadership schools.</p> <p><i>FY 2016 Plans:</i> Continue to support Joint and Multi-service doctrine development. This includes preparation of various Joint publications which then inform MTTPs. JRO will continue to support COCOM scenario development and controller/evaluator training by providing SMEs to exercises. JRO will continue to support training efforts at various Joint Senior Leadership schools.</p>			
<i>Title:</i> 2) SBIR/STTR		-	0.053
<p><i>FY 2015 Plans:</i> SBIR/STTR - FY15 - Small Business Innovative Research.</p>			-
Accomplishments/Planned Programs Subtotals		4.602	4.868
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			
E. Performance Metrics			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605384BP / CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)				Project (Number/Name) DW6 / MAJOR RANGE AND TEST FACILITY BASE (MRTFB)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
DW6: MAJOR RANGE AND TEST FACILITY BASE (MRTFB)	-	52.667	56.166	51.878	-	51.878	52.475	52.190	52.212	53.039	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project provides the technical and operational capability for testing Department of Defense (DoD) Chemical and Biological (CB) defense materiel, equipment, and systems from concept through production at West Desert Test Center (WDTC), a Major Range and Test Facility Base (MRTFB) located at Dugway Proving Ground (DPG). Project provides overhead (institutional) funding required to operate WDTC in compliance with Section 232 of the National Defense Authorization Act (NDAA) for FY03 (Public Law 107-314 - December 2002).

WDTC is the reliance center for all DoD CB defense testing and provides the United States' only combined range, chamber, toxic chemical lab, and bio-safety level-3 (BSL-3) test facility. Total institutional test operating costs are to be provided by the OSD Chemical and Biological Defense Program IAW Program Budget Decision 250 (1996).

WDTC uses state-of-the-art chemical and life sciences test facilities and test chambers to perform CB defense testing of protective gear, decontamination systems, detectors, equipment, and non-materiel CB defense solutions while maintaining safety, security, and surety of chemical agents and biological pathogens. WDTC also provides a fully instrumented outdoor range capability for testing with simulants that can be correlated to the laboratory testing with live agents to ensure reliable and repeatable data is generated to support acquisition decisions of CB defense equipment.

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

	FY 2014	FY 2015	FY 2016
Title: 1) WDTC, MRTFB	35.103	34.849	30.555
FY 2014 Accomplishments: Maintained WDTC technical test capability and operations to include institutional civilian labor costs. These civilian personnel ensured the safe and efficient operations of the MRTFB and included safety, security, resource management, surety operations, range control, environmental oversight, workload management, and training. This represented the civilian labor and MRTFB operating costs required to support operations, which could not be directly tied to a single test customer.			
FY 2015 Plans: Maintains WDTC technical test capability and operations to include institutional civilian labor costs. These civilian personnel ensure the safe and efficient operations of the MRTFB and include safety, security, resource management, surety operations,			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 6		R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>		Project (Number/Name) DW6 / <i>MAJOR RANGE AND TEST FACILITY BASE (MRTFB)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
range control, environmental oversight, workload management, and training. This represents the civilian labor and MRTFB operating costs required to support operations, which cannot be directly tied to a single test customer. FY 2016 Plans: Maintains WDTC technical test capability and operations to include institutional civilian labor costs. These civilian personnel ensure the safe and efficient operations of the MRTFB and include safety, security, resource management, surety operations, range control, environmental oversight, workload management, and training. This represents the civilian labor and MRTFB operating costs required to support operations, which cannot be directly tied to a single test customer.					
Title: 2) WDTC, MRTFB FY 2014 Accomplishments: Provided for ongoing sustainment of existing test instrumentation and equipment at WDTC, in support of their operations. Supported annual service contracts for equipment operation, diagnostics, and calibration, as well as routine life-cycle and use-related replacement of existing field, administrative, and analytical instrumentation components and systems. FY 2015 Plans: Provides for ongoing sustainment of existing test instrumentation and equipment at WDTC, in support of their operations. Supports annual service contracts for equipment operation, diagnostics, and calibration, as well as routine life-cycle and use-related replacement of existing field, administrative, and analytical instrumentation components and systems. FY 2016 Plans: Provides for ongoing sustainment of existing test instrumentation and equipment at WDTC, in support of their operations. Supports annual service contracts for equipment operation, diagnostics, and calibration, as well as routine life-cycle and use-related replacement of existing field, administrative, and analytical instrumentation components and systems.			9.060	11.757	12.504
Title: 3) WDTC, MRTFB FY 2014 Accomplishments: Provided WDTC with a dedicated and specially trained, 24-hour, support staff who operated and maintained all critical control systems, such as, highly complex heating, ventilation, and air conditioning (HVAC) systems and decontamination systems within WDTC's Material Test Facility (MTF), Combined Chemical Test Facility (CCTF), and Life Sciences Test Facility (LSTF) Complex. FY 2015 Plans: Provides WDTC with a dedicated and specially trained, 24-hour, support staff who operate and maintain all critical control systems, such as, highly complex HVAC systems and decontamination systems within WDTC's MTF, CCTF, and LSTF Complex. FY 2016 Plans:			1.918	1.937	1.956

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 6		R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>		Project (Number/Name) DW6 / <i>MAJOR RANGE AND TEST FACILITY BASE (MRTFB)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Provides WDTC with a dedicated and specially trained, 24-hour, support staff who operate and maintain all critical control systems, such as, HVAC systems and decontamination systems within WDTC's MTF, CCTF, and LSTF Complex.					
Title: 4) WDTC, MRTFB			5.758	5.838	5.870
FY 2014 Accomplishments: Supported the WDTC defense mission by funding contractor labor overhead costs. This is the institutional cost of providing contractual effort to this MRTFB including chemical and biological analysis, field support, planning, and report documentation.					
FY 2015 Plans: Supports the WDTC defense mission by funding contractor labor overhead costs. This is the institutional cost of providing contractual effort to this MRTFB including chemical and biological analysis, field support, planning, and report documentation.					
FY 2016 Plans: Supports the WDTC defense mission by funding contractor labor overhead costs. This is the institutional cost of providing contractual effort to this MRTFB including chemical and biological analysis, field support, planning, and report documentation.					
Title: 5) NTA TEST			0.828	0.972	0.993
FY 2014 Accomplishments: Maintained current synthesis capability (personnel expertise and existing instrumentation) and analytical processes and methods developed through FY13. Limited technology transfers between DPG and Edgewood Chemical Biological Center (ECBC). This capability is critical to facilitate successful transition between Science and Technology (S&T) and Test and Evaluation (T&E) for Non Traditional Agent (NTA) and evolving threats.					
FY 2015 Plans: Continues to maintain synthesis capability (personnel expertise and existing instrumentation) and analytical processes and methods developed through FY13. Limited technology transfers between DPG and ECBC. This capability is critical to facilitate successful transition between S&T and T&E for NTA and evolving threats.					
FY 2016 Plans: Supports the verification and validation efforts of infrastructure improvements for programs of record testing. Continues to maintain synthesis capability in other than Class 1 compounds. Continues to support the readiness of test infrastructure, instrumentation, and equipment along with applying current test procedures for other than Class 1 compounds.					
Title: 6) SBIR/STTR			-	0.813	-
FY 2015 Plans:					

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PE 0605384BP: *CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT S...*
Chemical and Biological Defense Program

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605384BP / CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)				Project (Number/Name) LS6 / LABORATORY SUPPORT			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
LS6: LABORATORY SUPPORT	-	0.731	12.132	10.120	-	10.120	12.305	12.533	12.768	12.948	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
A. Mission Description and Budget Item Justification												
This project (LS6) provides for the sustainment and modernization of the DoD laboratory infrastructure capabilities to counter an expanding threat space, exploit advances in technology, and develop and transition chemical and biological (CB) defense equipment and countermeasures to the Warfighter. This laboratory infrastructure project upgrades key systems to the current state-of-the-art capabilities. Key systems include: gas filters, mechanical/electrical, fume hoods and duct work and structural systems. Also provides for the initial equipment outfitting of new facilities. This project will ensure that the necessary surety operations can be conducted effectively and safely in support of Chemical and Biological Defense Program (CBDP) RDTE programs. As a force multiplier, this project will provide more robust capabilities to the CBDP and ensure continuity of operations and environmental compliance.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2014	FY 2015	FY 2016	
Title: 1) LABINF - Edgewood Chemical Biological Center Surety Facility Sustainment									0.731	10.724	8.949	
FY 2014 Accomplishments: Performed general facility sustainment in key surety facilities. Included general safety, structural, exterior, interior, and utility sustainment.												
FY 2015 Plans: Perform general facility sustainment and modernization in key surety facilities that support the Chemical Biological Defense Program (CBDP). Provides for gas filter maintenance and changeout, sustainment of critical laboratory systems (fume hoods, exhaust systems, control systems, electrical/mechanical systems, plumbing, emergency backup power), and modernization of key chemical and biological surety laboratories.												
FY 2016 Plans: Perform general facility sustainment and modernization in key surety facilities that support the Chemical Biological Defense Program (CBDP). Provides for gas filter maintenance and changeout, sustainment of critical laboratory systems (fume hoods, exhaust systems, control systems, electrical/mechanical systems, plumbing, emergency backup power), and modernization of key chemical and biological surety laboratories.												
Title: 2) LABINF - USAMRIID/USAMRICD Infrastructure Support									-	1.247	1.171	
FY 2015 Plans:												

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>	Project (Number/Name) LS6 / <i>LABORATORY SUPPORT</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Provide laboratory infrastructure support to laboratory operations, facilities sustainment, and regulatory compliance for critical chemical biological defense activities at the U.S. Army Medical Research Institute for Infectious Diseases and the U.S. Army Medical Research Institute for Chemical Defense.			
FY 2016 Plans: Provide laboratory infrastructure support to laboratory operations, facilities sustainment, and regulatory compliance for critical chemical biological defense activities at the U.S. Army Medical Research Institute for Infectious Diseases and the U.S. Army Medical Research Institute for Chemical Defense.			
Title: 3) SBIR/STTR		-	0.161
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.			-
Accomplishments/Planned Programs Subtotals		0.731	12.132
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			
E. Performance Metrics			
N/A			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605384BP / CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)				Project (Number/Name) MS6 / RDT&E MGT SUPPORT			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MS6: RDT&E MGT SUPPORT	-	31.258	28.782	31.411	-	31.411	34.462	34.885	35.116	35.654	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides management support for the DoD Chemical and Biological Defense Program (CBDP). It includes program oversight and integration of overall non-CBRN Defense Equipment (non-CDE) and CBRN Defense Equipment (CDE) programs by the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs (ASD(NCB)) and defense programs through the Deputy Assistant Secretary of Defense for Chemical and Biological Defense (DASD(CBD)). Funds execution management is provided by DTRA.

The project also provides for the development, coordination and integration of Joint Chemical, Biological, Radiological and Nuclear (CBRN) defense capability requirements, including assistance and support to the Combatant Commanders (COCOMs) and Services to improve CBRN defense related doctrine, education, training, and awareness by the Joint Requirements Office (JRO); preparation of Joint Capability Integration and Development System (JCIDS) documents in accordance with Chairman of The Joint Chiefs of Staff Instruction CJCSI 3170.01H dated 10 January 2012; Joint CBRN Defense Research, Development, and Acquisition (RDA) planning; input to the CBD Annual Report to Congress; and program guidance development by the Program Analysis and Integration Office (PAIO).

The project includes programming support for the Joint Service CB Information System (JSCBIS) which serves as a budgetary and informational database for the DoD CBDP. Also included within the project is financial management services to include fund distribution, execution reporting, and fiscal financial statements.

This project also supports the Chemical, Biological, Radiological and Nuclear Defense (CBRND) Test and Evaluation (T&E) Executive, who is responsible for the planning, balancing, and oversight of test infrastructure and test technology requirements to support Developmental Testing (DT) and Operational Testing (OT) of DoD CBRND systems, as outlined in the RDA Plan. The CBRND T&E Executive oversees the Enterprise processes to develop and sustain standardized T&E methodologies and validated instrumentation and infrastructure to ensure the adequacy of test for CBRND systems in alignment with acquisition milestones and associated decision points. The Joint Test Infrastructure Working Group (JTIWG) program funds T&E Early Involvement; test threat planning; T&E studies; and T&E standards planning and development to support CBRND testing for all Services to include medical T&E efforts.

The CBRND T&E Executive directly supports OSD T&E oversight acquisition programs and provides the mechanism for early T&E involvement in the acquisition process. The CBRND T&E Executive provides the T&E infrastructure investment strategy and coordinates investment planning and T&E capabilities validation among the Joint Service Community to ensure that program needs are met. The CBRND T&E Executive oversees the T&E processes to ensure end to end feedback loops to support to the Warfighter.

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

	FY 2014	FY 2015	FY 2016
Title: 1) JRO MGT	10.046	9.443	9.696

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 6		R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>		Project (Number/Name) MS6 / <i>RDT&E MGT SUPPORT</i>	
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
<p><i>FY 2014 Accomplishments:</i> Implemented CBRN Defense medical and non-medical capabilities development. This consisted of representing the Services and COCOMs in JCIDS by acting as their proponent for coordinating and integrating CBRND operational capabilities. Chaired the CWMD Working Group for the Protection Functional Capabilities Board (FCB). Served as the Joint Staff focal point for CBRN reports, assessments, meetings, agreements, concepts and studies, Advanced Technology Demonstrations (ATDs), and Joint Capability Technology Demonstrations (JCTDs). Led the CBDP Enterprise Program Objective Memorandum (POM) development. Prepared various JCIDS documents, including Analysis of Alternatives (AoAs), Information System Initial Capability Documents (IS ICDs), Capability Development Documents (CDDs), and Capability Production Documents (CPDs).</p> <p><i>FY 2015 Plans:</i> Will implement CBRN Defense medical and non-medical capabilities development by representing the Services and COCOMs in JCIDS and acting as their proponent for coordinating and integrating CBRND operational capabilities. Will chair the CWMD Working Group for the Protection Functional Capabilities Board (FCB). Will serve as the Joint Staff focal point for CBRN reports, assessments, meetings, agreements, concepts and studies, ATDs, and JCTDs. Will lead the CBDP Enterprise POM development. Will prepare various JCIDS documents, including AoAs, IS ICDs, CDDs, and CPDs.</p> <p><i>FY 2016 Plans:</i> Will implement CBRN Defense medical and non-medical capabilities development by representing the Services and COCOMs in JCIDS and acting as their proponent for coordinating and integrating CBRND operational capabilities. Will chair the CWMD Working Group for the Protection Functional Capabilities Board (FCB). Will serve as the Joint Staff focal point for CBRN reports, assessments, meetings, agreements, concepts and studies, ATDs, and JCTDs. Will lead the CBDP Enterprise POM development. Will prepare various JCIDS documents, including AoAs, IS ICDs, CDDs, and CPDs.</p>					
<p><i>Title:</i> 2) JTIWG</p> <p><i>FY 2014 Accomplishments:</i> Continued T&E Executive mission support to ensure credible testing; T&E Early Involvement; T&E Studies; evaluation and decision support for CBDP systems; supported the Director Operational T&E (DOT&E) for OSD T&E Oversight; supported the Assistant to the Secretary of Defense (NCB) in infrastructure planning; provided input to the Program Objective Memorandum (POM) process; and established T&E Standards to support the White House Subcommittee on Standards and other interagency groups. Continued direct support of the Joint Requirements Office (JRO) Integrated Concept Teams (ICTs) and Integrated Product Teams (IPTs) provided technical assistance to structure acquisition programs, planned for Analysis of Alternatives, and developed test scopes. Continued early involvement of the Operational Test Agencies (OTAs) and other T&E organizations in T&E infrastructure planning, development, and validation.</p>			5.888	6.043	5.924

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>	Project (Number/Name) MS6 / <i>RDT&E MGT SUPPORT</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>Continued development of threat test support documentation to support DT and OT in which an operational threat must be realistically presented.</p> <p>Continued direct support to the Joint Program Executive Office for Chemical Biological Defense (JPEO-CBD). Programs supported include Joint Biological Tactical Detection System (JBTDSD); Joint Biological Point Detector System (JBPDS); Joint Chemical Agent Detector (JCAD) integration into Stryker Joint Nuclear, Biological, and Chemical Reconnaissance System; Next Generation Chemical Detector (NGCD) Increments 1 through 4; Uniform Individual Protection Ensemble (UIPE); Dismounted Reconnaissance Sets, Kits, and Outfits (DR-SKO); Joint Expeditionary Collective Protection (JECPP); Next Generation Diagnostic Systems (NGDS); Decontamination Family of Systems (DFoS); Joint Effects Model (JEM); Joint Warning and Reporting Network (JWARN); Contaminated Human Remains Pouch (CHRP); Common Analytical System (CALS); all variants of Joint Service Aircrew Mask (JSAM); and other activities including Joint United States Force Korea (USFK) Portal and Integrated Threat Recognition (JUPITR) Advanced Technology Demonstration (ATD), Able Response 14, and Chemical Demilitarization.</p> <p>Continued support to JPEO-CBD, Joint Science Technology Office (JSTO), and West Desert Test Center (WDTCC) for specific test methodology and test technology needs; technology transition planning for T&E methodologies, resources and infrastructure; and participation in scientific review panels.</p> <p>Continued to provide guidance to improve T&E Master Plans (TEMPs) for acquisition programs; approval of TEMP; development of threat support documentation; and validation of T&E Capabilities and associated standards.</p> <p>Continued supporting OTAs in coordination of Lead OTA assignment, integration of test planning, issue resolution, and facilitation of OSD approval of test documents.</p> <p>Continued to lead the International T&E methodology development and standardization efforts to support the Australia, Canadian, UK, and US Memorandum of Understanding (MOU) and other international partnering agreements.</p> <p>Provided T&E infrastructure input to the POM process and support the Services, JRO, PAIO, and NCB in development and defense of POM and Budget submissions.</p> <p>FY 2015 Plans:</p> <p>Continue T&E Executive mission support to ensure credible testing; T&E Early Involvement; T&E Studies; evaluation and decision support for CDBP systems; support the DOT&E for OSD T&E Oversight; and support the NCB in infrastructure planning; input to the POM process; and establishing T&E Standards to support the White House Subcommittee on Standards and other interagency groups.</p> <p>Continue direct support of the JRO ICTs and IPTs providing technical assistance to structure acquisition programs, plan for Analysis of Alternatives, and develop test scopes.</p> <p>Continue early involvement of the OTAs and other T&E organizations in T&E infrastructure planning, development, and validation.</p> <p>Continue development of threat test support documentation to support DT and OT in which an operational threat must be realistically presented.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>	Project (Number/Name) MS6 / <i>RDT&E MGT SUPPORT</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p>Continue direct support to the JPEO-CBD. Anticipated programs supported include JBTDS; JCAD integration into Stryker Joint Nuclear, Biological, and Chemical Reconnaissance System; NGCD Increments 1 through 4; UIPE; JECF; NGDS; DFoS; JEM; JWARN; CHRP; CALS; all variants of JSAM; and other activities including JUPITR ATD, Able Response 15, and Chemical Demilitarization.</p> <p>Continue support to JPEO-CBD, JSTO, and WDTC for specific test methodology and test technology needs; technology transition planning for T&E methodologies, resources and infrastructure; and participation in scientific review panels.</p> <p>Continue to provide guidance to improve TEMPs for acquisition programs; approval of TEMPs; development of threat support documentation; and validation of T&E Capabilities and associated standards.</p> <p>Continue supporting OTAs in coordination of Lead OTA assignment, integration of test planning, issue resolution, and facilitation of OSD approval of test documents.</p> <p>Continue to lead the International T&E methodology development and standardization efforts to support the Australia, Canadian, UK, and US MOU and other international partnering agreements.</p> <p>Provide T&E infrastructure input to the POM process and support the Services, JRO, PAIO, and NCB in development and defense of POM and Budget submissions.</p> <p>FY 2016 Plans:</p> <p>Continue T&E Executive mission support to ensure credible testing; T&E Early Involvement; T&E Studies; evaluation and decision support for CDBP systems; support the DOT&E for OSD T&E Oversight; and support the NCB in infrastructure planning; input to the POM process; and establishing T&E Standards to support the White House Subcommittee on Standards and other interagency groups.</p> <p>Continue direct support of the JRO ICTs and IPTs providing technical assistance to structure acquisition programs, plan for Analysis of Alternatives, and develop test scopes.</p> <p>Continue early involvement of the OTAs and other T&E organizations in T&E infrastructure planning, development, and validation.</p> <p>Continue development of threat test support documentation to support DT and OT in which an operational threat must be realistically presented.</p> <p>Continue direct support to the JPEO-CBD. Anticipated programs supported include JBTDS; NGCD Increments 1 through 4; UIPE; JECF; NGDS; DFoS; JEM; JWARN; CALS; all variants of JSAM; and other activities including JUPITR ATD and Able Response 16.</p> <p>Continued support to JPEO-CBD, JSTO, and WDTC for specific test methodology and test technology needs; technology transition planning for T&E methodologies, resources and infrastructure; and participation in scientific review panels.</p> <p>Continue to provide guidance to improve TEMPs for acquisition programs; approval of TEMPs; development of threat support documentation; and validation of T&E Capabilities and associated standards.</p> <p>Continue supporting OTAs in coordination of Lead OTA assignment, integration of test planning, issue resolution, and facilitation of OSD approval of test documents.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605384BP / CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)	Project (Number/Name) MS6 / RDT&E MGT SUPPORT		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continue to lead the International T&E methodology development and standardization efforts to support the Australia, Canadian, UK, and US MOU and other international partnering agreements. Provide T&E infrastructure input to the POM process and support the Services, JRO, PAIO, and NCB in development and defense of POM and Budget submissions.				
Title: 3) OSD MGT FY 2014 Accomplishments: Performed program reviews/assessments, provided programmatic PPBE oversight/analysis, and provided congressional issue analysis and support. Supported financial management services provided by DTRA, such as funding distribution and execution reporting. FY 2015 Plans: Perform program reviews/assessments, provide programmatic PPBE oversight/analysis, and provide congressional issue analysis and support. Support financial management services provided by DTRA, such as funding distribution and execution reporting. FY 2016 Plans: Perform program reviews/assessments, provide programmatic PPBE oversight/analysis, and provide congressional issue analysis and support. Support financial management services provided by DTRA, such as funding distribution and execution reporting.		9.586	6.571	9.246
Title: 4) PAIO MGT FY 2014 Accomplishments: Developed assessments to support RDA Planning. Provided analytic programmatic support for development of program guidance, the Program, Budget and Execution Reviews, and the President's Budget submissions. Responded to specialized evaluation studies throughout the PPBE process. Provided JSCBIS database management. FY 2015 Plans: Develop assessments to support RDA Planning. Provide analytic programmatic support for development of program guidance, the Program, Budget and Execution Reviews, and the President's Budget submissions. Respond to specialized evaluation studies throughout the PPBE process. Provide JSCBIS database management. FY 2016 Plans: Develop assessments to support RDA Planning. Provide analytic programmatic support for development of program guidance, the Program, Budget and Execution Reviews, and the President's Budget submissions. Respond to specialized evaluation studies throughout the PPBE process. Provide JSCBIS database management.		5.738	6.333	6.545
Title: 5) SBIR/STTR FY 2015 Plans:		-	0.392	-

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>	Project (Number/Name) MS6 / <i>RDT&E MGT SUPPORT</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
SBIR/STTR - FY15 - Small Business Innovative Research.				
Accomplishments/Planned Programs Subtotals		31.258	28.782	31.411
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy N/A				
E. Performance Metrics N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605384BP / CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)				Project (Number/Name) O49 / JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
O49: JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM	-	2.995	3.979	4.111	-	4.111	3.934	4.018	4.019	4.135	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The objectives of the Joint Concept Development and Experimentation (JCDE) program are to support the Joint Requirements Office to develop, coordinate, and execute CBRND studies, experiments, analyses and architecture, in order to develop future operational concepts and support the efficient and effective generation of CBRN requirements.

Specific lines of effort across the Future Years Defense Program (FYDP) include: qualitatively characterizing emerging CBRN threats and operational risks to the Joint Force; conducting innovative approaches to deal with technical studies; analyzing Concepts of Operations for employing and developing capabilities; and analyzing specific issues that contribute to POM development.

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

	FY 2014	FY 2015	FY 2016
Title: 1) JCDE	2.995	3.933	4.111
FY 2014 Accomplishments: Conducted JCDE analysis. Performed Advanced Threat Analysis. Performed Elimination Experiment to establish gaps and requirements in that mission area. Produced the new Joint Concept to Prevent the Transfer or Use of WMD to replace the outdated CWMD Joint Integrating Concept for CWMD (CWMD JIC). Conducted Operational Risk Analysis for Advanced Toxins, Encapsulation Threats, Emerging Infectious Diseases, Anti-Material Agents, and three classes of Non Traditional Agents (NTAs) which have hitherto not been considered for formal requirements. Conducted concept-of-use experiments for Mass Casualty Decontamination. Conducted comprehensive quantitative risk analysis for near-to-far term impacts of chemical and biological agents on four key vignettes: ground force in the attack, ground force in the defense, maritime and amphibious operations, and air and base operations in order to inform and form a basis for CBDDP investment strategies. Completed four complete operational architectures required for JCIDS documents.			
FY 2015 Plans: Will continue JCDE analysis. Will continue to perform Advanced Threat Analysis with several more categories of threat. Will determine best representative agents for consideration in requirements and testing. Will conduct detailed quantitative analyses to determine detection and challenge levels from key representative solid, dusty, liquid, viral, and bacterial threats. Will conduct			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (RDT&E MGT SUPPORT)</i>	Project (Number/Name) O49 / <i>JOINT CONCEPT DEVELOPMENT AND EXPERIMENTATION PROGRAM</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
more detailed operational risk analyses to support CBDP leadership decisions. Will complete biosurveillance architecture. Will complete a new Concept for CBRN Defense to replace the final portion of the 2007 CWMD JIC.			
FY 2016 Plans: Will continue JCDE analysis. Will continue to perform Advanced Threat Analysis with several more categories of threat. Will update best representative agents for consideration in requirements and testing. Will conduct detailed quantitative analyses to determine detection and challenge levels from key representative threats determined in the FY15 Advanced Threat Studies. Will update detailed operational risk analyses to support CBDP leadership decisions.			
Title: 2) SBIR/STTR		-	0.046
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals		2.995	3.979
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
N/A			
E. Performance Metrics			
N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 6: RDT&E Management Support					R-1 Program Element (Number/Name) PE 0605502BP / SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	14.967	-	-	-	-	-	-	-	-	-	14.967
SB6: SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	-	14.967	-	-	-	-	-	-	-	-	-	14.967

A. Mission Description and Budget Item Justification

The overall objective of the CBD SBIR program is to improve the transition or transfer of innovative CBD technologies between DoD components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment.

B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	14.967	-	-	-	-
Total Adjustments	14.967	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	14.967	-			
• Other Adjustments	-	-	-	-	-

Change Summary Explanation

Funding: FY13 - Funding transferred and applied to SBIR program (+\$13,096K).

Schedule: N/A

Technical: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 6					R-1 Program Element (Number/Name) PE 0605502BP / SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)				Project (Number/Name) SB6 / SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
SB6: SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)	-	14.967	-	-	-	-	-	-	-	-	-	14.967
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The SBIR Program is a Congressionally mandated program established to increase the participation of small business in federal research and development (R&D). Currently, each participating government agency must reserve 2.5% of its extramural R&D for SBIR awards to competing small businesses. The goal of the SBIR Program is to invest in the innovative capabilities of the small business community to help meet government R&D objectives while allowing small companies to develop technologies and products which they can then commercialize through sales back to the government or in the private sector.

The Small Business Technology Transfer (STTR) Program like SBIR, is a Government-wide program, mandated by the Small Business Research and Development Enhancement Act of 1992, PL 102-564. STTR was established in FY94 as a three-year pilot program. In early 1996, the General Accounting Office (GAO) conducted a comprehensive review of the Government-wide STTR Program to determine the effectiveness of the pilot program. Upon review of the GAO report, Congress voted to reauthorize the STTR Program to the year 2000, consistent with the authorization period for the SBIR Program.

STTR was established as a companion program to the SBIR Program and is executed in essentially the same manner; however, there are several distinct differences. The STTR Program provides a mechanism for participation by university, Federally-Funded Research and Development Centers (FFRDCs), and other non-profit research institutions. Specifically, the STTR Program is designed to provide an incentive for small companies and research at academic institutions and non-profit research and development institutions to work together to move emerging technical ideas from the laboratory to the marketplace to foster high-tech economic development and to advance U.S. economic competitiveness. Each STTR proposal must be submitted by a team which includes a small business (as the prime contractor for contracting purposes) and at least one research institution, which have entered into a Cooperative Research and Development Agreement for the purposes of the STTR effort. Furthermore, the project must be divided up such that the small business performs at least 40% of the work and the research institution(s) performs at least 30% of the work. The remainder of the work may be performed by either party or a third party. The budget is separate from the SBIR budget and is significantly smaller (0.15% of the extramural R&D budget vs. 2.5% for the SBIR Program).

The DoD has consolidated management and oversight of the CBDP into a single office within the OSD. The Army was designated as the Executive Agent for coordination and integration of the Chemical and Biological Defense (CBD) program. The executive agent for the SBIR/STTR portion of the program is the Army Research Office-Washington.

The overall objective of the CBD SBIR/STTR program is to improve the transition or transfer of innovative CBD technologies between DoD components and the private sector for mutual benefit. The CBD program includes those technology efforts that maximize a strong defensive posture in a biological or chemical environment using

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605502BP / <i>SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</i>	Project (Number/Name) SB6 / <i>SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)</i>	
passive and active means as deterrents. These technologies include chemical and biological detection; information assessment, which includes identification, modeling, and intelligence; contamination avoidance; and protection of both individual soldiers and equipment.			
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Title: 1) SBIR/STTR		14.967	-
FY 2014 Accomplishments: SBIR/STTR			
Accomplishments/Planned Programs Subtotals		14.967	-
C. Other Program Funding Summary (\$ in Millions) N/A			
Remarks			
D. Acquisition Strategy N/A			
E. Performance Metrics N/A			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	-	12.873	28.496	33.561	-	33.561	33.358	28.935	41.443	39.113	Continuing	Continuing
CA7: CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	-	-	0.500	4.837	-	4.837	4.854	4.817	4.870	4.986	Continuing	Continuing
CM7: HOMELAND DEFENSE (OP SYS DEV)	-	1.798	2.006	1.915	-	1.915	1.935	1.948	1.958	1.783	Continuing	Continuing
IP7: INDIVIDUAL PROTECTION (OP SYS DEV)	-	0.494	2.501	3.214	-	3.214	1.485	1.457	1.777	1.620	Continuing	Continuing
IS7: INFORMATION SYSTEMS (OP SYS DEV)	-	6.442	4.091	7.703	-	7.703	9.557	12.407	13.519	12.767	Continuing	Continuing
MB7: MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)	-	0.493	13.414	11.801	-	11.801	10.420	3.137	13.943	12.496	Continuing	Continuing
TE7: TEST & EVALUATION (OP SYS DEV)	-	3.646	5.984	4.091	-	4.091	5.107	5.169	5.376	5.461	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element supports developmental efforts to upgrade systems in the Department of Defense (DoD) Chemical Biological Defense Program that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

Efforts in this program element support the upgrade of fielded CB defense equipment against emerging chemical threat agents and toxic industrial chemicals. Specifically this program includes: (1) the upgrade and modernization of information systems; (2) the Software Support Activity (SSA); (3) the upgrade and modernization of medical systems; and (4) revitalization and technical upgrade of existing instrumentation and equipment at Dugway Proving Ground (DPG).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Chemical and Biological Defense Program	Date: February 2015
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0607384BP I <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	13.026	28.496	35.738	-	35.738
Current President's Budget	12.873	28.496	33.561	-	33.561
Total Adjustments	-0.153	-	-2.177	-	-2.177
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.001	-			
• SBIR/STTR Transfer	-0.152	-			
• Other Adjustments	-	-	-2.177	-	-2.177

Change Summary Explanation

Funding: N/A

Schedule: N/A

Technical: N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) CA7 / CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
CA7: CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	-	-	0.500	4.837	-	4.837	4.854	4.817	4.870	4.986	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides the technology upgrade and refresh effort for the Chemical Biological Radiological Nuclear Dismounted Reconnaissance Systems (CBRN DRS) with emerging technologies and capabilities which will address and mitigate equipment obsolescence.

The CBRN Dismounted Reconnaissance Systems (CBRN DRS) consists of portable, commercial and government off-the-shelf equipment which provides personnel protection from current and emerging CBRN hazards through detection, identification, sample collection, decontamination, marking, and hazard reporting for CBRN threats. The system supports Dismounted Reconnaissance, Surveillance, and CBRN Site Assessment missions which enables more detailed and near real-time CBRN information flow for the Warfighter. The program will address emerging CBRN threat requirements in order to provide an enhanced capability for the future.

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

	FY 2014	FY 2015	FY 2016
Title: 1) CBRN DRS	-	0.491	3.337
FY 2015 Plans: Initiate market analyses on emerging technologies for potential upgrades to the system. Initiate obsolescence management activities for existing fielded components.			
FY 2016 Plans: Continue market analyses on emerging technologies for potential upgrades to the system. Continue obsolescence management activities for existing fielding components.			
Title: 2) CBRN DRS	-	-	1.500
FY 2016 Plans: Initiate testing of potential candidates (10 components at approximately \$100,000 each)			
Title: 3) SBIR/STTR	-	0.009	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	-	0.500	4.837

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) CA7 / <i>CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV</i>
<p><u>C. Other Program Funding Summary (\$ in Millions)</u> N/A</p> <p><u>Remarks</u></p> <p><u>D. Acquisition Strategy</u> CBRN DISMOUNTED RECONNAISSANCE SYSTEMS</p> <p>The Chemical Biological Radiological Nuclear Dismounted Reconnaissance Systems (CBRN DRS) program uses a government-off-the-shelf (GOTS)/commercial-off-the-shelf (COTS) non-developmental item (NDI) single step acquisition approach to full capability. This strategy employs an NDI acquisition concept to establish a simplified management framework to translate mission needs and emerging technology capabilities into a stable, affordable, and well-managed acquisition program. CBRN DRS systems will be produced using a workshare approach between Organic assets and Contractor workforce.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>						Project (Number/Name) CA7 / <i>CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV</i>			
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CBRN DRS - CBRN DRS - HW C - Product Development	MIPR	TBD :	0.000	-		-		1.000	Mar 2016	-		1.000	Continuing	Continuing	-
Subtotal			0.000	-		-		1.000		-		1.000	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CBRN DRS - CBRN DRS - ES C - Market Analysis	MIPR	TBD :	0.000	-		0.491	Mar 2015	1.350	Dec 2015	-		1.350	Continuing	Continuing	-
CBRN DRS - ES C - Obsolescence Management	MIPR	TBD :	0.000	-		-		0.950	Dec 2015	-		0.950	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.009		-		-		-	Continuing	Continuing	-
Subtotal			0.000	-		0.500		2.300		-		2.300	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CBRN DRS - CBRN DRS - OTE S - Candidate Testing	MIPR	Various :	0.000	-		-		0.500	Mar 2016	-		0.500	Continuing	Continuing	-
Subtotal			0.000	-		-		0.500		-		0.500	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CA7 / CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV
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Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** CBRN DRS - CBRN DRS - PM/MS S - Program Management and Systems Engineering Support	MIPR	JPM NBC Contamination Avoidance (JPM NBC CA) : JPEO, Aberdeen Proving Ground, MD	0.000	-		-		1.037	Dec 2015	-		1.037	Continuing	Continuing	-
Subtotal			0.000	-		-		1.037		-		1.037	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		0.500		4.837		-		4.837	-	-	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CA7 / CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** CBRN DRS - Test components to replace obsolete items and insert new technologies																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CA7 / CONTAMINATION AVOIDANCE OPERATIONAL SYS DEV	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** CBRN DRS - Test components to replace obsolete items and insert new technologies	2	2015	4	2020

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) CM7 / HOMELAND DEFENSE (OP SYS DEV)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
CM7: HOMELAND DEFENSE (OP SYS DEV)	-	1.798	2.006	1.915	-	1.915	1.935	1.948	1.958	1.783	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

The Weapons of Mass Destruction Civil Support Team (WMD CST) Program supports the fielded system upgrade and ongoing assessment and acquisition of commercial off-the-shelf (COTS) and government off-the-shelf (GOTS) analytical detection, protection, decontamination and sampling equipment for survey in order to expand/enhance the operational capabilities of the (57) WMD CST Teams.

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

	FY 2014	FY 2015	FY 2016
Title: 1) WMD CST - Component Test and Evaluation Description: General system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system. This element also includes costs of the detailed planning, conduct, support, data reduction, and reports from such testing, as well as hardware items that are consumed or planned to be consumed in the conduct of such operations. FY 2014 Accomplishments: Initiated test and evaluation of GC Mass Spectrometer (HAPSITE). FY 2015 Plans: Completes test and evaluation of GC Mass Spectrometer and validates critical reagents in support of fielded capabilities within the Analytical Laboratory System (ALS). FY 2016 Plans: Provides system-related test activities, including costs of specially fabricated hardware to obtain or validate engineering data on the performance of the system. This element also includes costs of the detailed planning, conduct, support, data reduction, and reports from such testing, as well as hardware items that are consumed or planned to be consumed in the conduct of such operations.	1.128	1.273	1.115
Title: 2) WMD CST - System Engineering and Program Management Description: System engineering and technical control, as well as the business management of the system/program.	0.670	0.716	0.800

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) CM7 / <i>HOMELAND DEFENSE (OP SYS DEV)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
<p><i>FY 2014 Accomplishments:</i> Provided System Engineering, technical control, and business management support of the COTS Life Cycle Management Program.</p> <p><i>FY 2015 Plans:</i> Provides system engineering and technical control, as well as the business management of the system/program. It encompasses the overall planning, direction, and control of the definition, development, and production of the system, including functions of logistics engineering and integrated logistics support (ILS) management (e.g., maintenance support, facilities, personnel, training, testing, and activation of the system).</p> <p><i>FY 2016 Plans:</i> Provides system engineering and technical control, as well as the business management of the system/program. It encompasses the overall planning, direction, and control of the definition, development, and production of the system, including functions of logistics engineering and integrated logistics support (ILS) management (e.g., maintenance support, facilities, personnel, training, testing, and activation of the system).</p>			
<p><i>Title:</i> 3) SBIR/STTR</p> <p><i>FY 2015 Plans:</i> SBIR/STTR - FY15 - Small Business Innovative Research.</p>		-	0.017
Accomplishments/Planned Programs Subtotals		1.798	2.006
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
WMD - CIVIL SUPPORT TEAMS (WMD CST)			
<p>The Weapons of Mass Destruction Civil Support Team Program (WMD-CST) is a COTS based program that supports the evaluation of advancements in CBRN commercial off the shelf (COTS)/government-off-the-shelf (GOTS) equipment against the current technology baseline of equipment fielded to the (57) WMD CST Teams. As such, the program establishes a time phased modernization plan to integrate and incorporate proven advancements in commercially available technology into the CST operating mission set based on highest priority capability requirements and availability of resources.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) CM7 / HOMELAND DEFENSE (OP SYS DEV)
E. Performance Metrics N/A		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)						Project (Number/Name) CM7 / HOMELAND DEFENSE (OP SYS DEV)			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** WMD CST - ES C - SEPM	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.373	Mar 2014	0.378	Mar 2015	0.400	Mar 2016	-		0.400	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.017		-		-		-	Continuing	Continuing	-
Subtotal			0.000	0.373		0.395		0.400		-		0.400	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** WMD CST - OTHT C - CBRN COTS Component	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	1.128	Mar 2014	1.273	Mar 2015	1.115	Mar 2016	-		1.115	Continuing	Continuing	-
Subtotal			0.000	1.128		1.273		1.115		-		1.115	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** WMD CST - PM/MS SB - CBRN COTS	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.297	Mar 2014	0.338	Mar 2015	0.400	Mar 2016	-		0.400	Continuing	Continuing	-
Subtotal			0.000	0.297		0.338		0.400		-		0.400	-	-	-
Project Cost Totals			0.000	1.798		2.006		1.915		-		1.915	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program							Date: February 2015			
Appropriation/Budget Activity 0400 / 7			R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>			Project (Number/Name) CM7 / <i>HOMELAND DEFENSE (OP SYS DEV)</i>				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) CM7 / <i>HOMELAND DEFENSE (OP SYS DEV)</i>	

FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
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

** WMD CST - Upgrade Fielded Systems																												
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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) CM7 / <i>HOMELAND DEFENSE (OP SYS DEV)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** WMD CST - Upgrade Fielded Systems	2	2014	2	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) IP7 / INDIVIDUAL PROTECTION (OP SYS DEV)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
IP7: INDIVIDUAL PROTECTION (OP SYS DEV)	-	0.494	2.501	3.214	-	3.214	1.485	1.457	1.777	1.620	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for filter modernization and enhancements against Toxic Industrial Chemicals (TICs) and Toxic Industrial Materials (TIMs). These upgrades will be provided for fielded Protection systems to enhance respiratory and ocular protection. They are currently being developed by the Joint Science and Technology Office (JSTO) as a synthetic nano-structured material focused on TIC removal and expected to transition to the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) in FY15.

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

	FY 2014	FY 2015	FY 2016
Title: 1) JSGPM Advanced Respiratory Protection Initiative (ARPI)	0.494	2.452	3.214
FY 2014 Accomplishments: Initiated developmental filter enhancement efforts on Cobalt-Zinc, zirconium hydroxide, Argentum (Silver), TEDA (Triethylene diamine)(CoZZAT)technology for integration into JSGPM filters to increase protection against TICs and TIMs.			
FY 2015 Plans: Build final prototypes for CoZZAT product qualification.			
FY 2016 Plans: Complete CoZZAT prototype development and conduct Product Qualification Testing (PQT). Begin developing the second technology transition effort, Metal Organic Framework (MOF) Media, an engineered media that is a porous crystalline compound made up of metal ions and organic bridging molecules (ligands) for targeted removal of chemicals. It is currently being developed by JSTO as a synthetic nano-structured material focused on TIC removal.			
Title: 2) SBIR/STTR	-	0.049	-
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.			
Accomplishments/Planned Programs Subtotals	0.494	2.501	3.214

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program									Date: February 2015		
Appropriation/Budget Activity 0400 / 7				R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) IP7 / INDIVIDUAL PROTECTION (OP SYS DEV)			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• JI0003: JOINT SERVICE GENERAL PURPOSE MASK (JSGPM)	85.343	61.131	60.777	-	60.777	55.118	48.982	-	-	-	311.351
Remarks											
D. Acquisition Strategy											
JS GENERAL PURPOSE MASK (JSGPM)											
The JSGPM Advanced Respiratory Protection Initiative (ARPI) effort is using the M61 filter contracts awarded to 3M and Avon to develop improved filters for the JSGPM. There is a continual technology refreshment CLIN that allows for filter development tasks to be awarded under this contract. The tasks can be competed between the two awardees or award 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. There are multiple technologies being explored by DTRA, thus, this is a continual product improvement effort to enhance filtration. The JSGPM ARPI effort will investigate alternative designs and modifications to ZZAT (Zirconium hydroxide, Zinc, Argentum (Silver), Triethylene di-amine (TEDA)) 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.											
E. Performance Metrics											
N/A											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) IP7 / INDIVIDUAL PROTECTION (OP SYS DEV)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSGPM - HW C - System Filter Development	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.149	Jun 2014	-		-		-		-	Continuing	Continuing	-
HW C - Filter Prototypes #1	C/CPFF	AVON Protection Systems Inc. : Cadillac, MI	0.000	-		1.795	Jan 2015	0.625	Jan 2016	-		0.625	Continuing	Continuing	-
HW C - Filter Prototypes #2	C/CPFF	3M Canada : Brockville Ontario, CN	0.000	-		-		0.600	Jan 2016	-		0.600	Continuing	Continuing	-
Subtotal			0.000	0.149		1.795		1.225		-		1.225	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSGPM - ES C - System Filter Bed Design Analysis	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.270	Jun 2014	0.100	Dec 2014	0.550	Dec 2015	-		0.550	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.049		-		-		-	Continuing	Continuing	-
Subtotal			0.000	0.270		0.149		0.550		-		0.550	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSGPM - DTE C - System Filters	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	-		0.100	Jan 2015	0.725	Jan 2016	-		0.725	Continuing	Continuing	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)						Project (Number/Name) IP7 / INDIVIDUAL PROTECTION (OP SYS DEV)			
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
Subtotal			0.000	-		0.100		0.725		-		0.725	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JSGPM - JSGPM - PM/MS C - Program Management and Technical Support	MIPR	Edgewood Chemical Biological Center (ECBC) : Aberdeen Proving Ground, MD	0.000	0.075	Feb 2014	0.457	Jan 2015	0.714	Jan 2016	-		0.714	Continuing	Continuing	-
Subtotal			0.000	0.075		0.457		0.714		-		0.714	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.494		2.501		3.214		-		3.214	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) IP7 / <i>INDIVIDUAL PROTECTION (OP SYS DEV)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) IP7 / <i>INDIVIDUAL PROTECTION (OP SYS DEV)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JSGPM - Bed Design Analysis (CoZZAT)	1	2014	2	2015
JSGPM - TD Contract Award (CoZZAT)	2	2015	2	2015
JSGPM - Prototype Development (CoZZAT)	2	2015	2	2016
JSGPM - Product Qualification Testing (CoZZAT)	2	2016	1	2017
JSGPM - ECP Production (CoZZAT)	2	2017	2	2017
JSGPM - Bed Design Analysis (MOF)	2	2016	4	2016
JSGPM - Prototype Development (MOF)	3	2016	1	2018
JSGPM - Prototype Testing (MOF)	2	2018	1	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
IS7: INFORMATION SYSTEMS (OP SYS DEV)	-	6.442	4.091	7.703	-	7.703	9.557	12.407	13.519	12.767	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for the upgrade and modernization of fielded Information Systems including the Joint Effects Model (JEM) and the Joint Warning and Reporting Network (JWARN). This project also provides for the Software Support Activity (SSA).

Efforts included in this project are: (1) Joint Effects Model (JEM); (2) the Joint Warning and Reporting Network (JWARN); and (3) Software Support Activity (SSA).

JEM and JWARN utilize the Joint Capabilities Integration and Development System (JCIDS) Manual prescribed Agile 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.

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. MSB is followed by a series of supporting Build Decisions (BDs), delegated to Joint Project Manager Information Systems, associated with each RDP as they are released. The supporting BDs will ensure incorporation of mature technology and development efforts culminating in incremental deliveries of capability to Joint and Service Command and Control (C2) architectures. Instead of a single Milestone C decision and fielding event for one increment, the program will return to the MDA for more frequent fielding decisions, as often as annually, as portions of capability are determined suitable and operationally effective. These multiple fielding efforts are based on providing capabilities with the most value to the operators based on Warfighter priorities/needs, maturation of the technology being incorporated and available resources supporting the effort.

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

The Software Support Activity (SSA) is a Chem-Bio Defense user developmental support and service organization to facilitate net-centric interoperability of systems in acquisition for the Warfighter. The SSA provides the CBRN Warfighter with Joint Service solutions for Integrated Architectures, Data Management/Modeling, Information Assurance (IA), Interoperability Certifications, Verification, Validation and Accreditation (VV&A) to support interoperable and integrated net-centric, service-oriented

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)		
solutions for CBRN systems. The SSA emphasizes development of reference implementations to guide Government and industry system and software developers to ensure that their products meet common interoperability standards. The latest technologies/products include the definition of a Common CBRN Sensor Integration Standard (CCSI) and the CBRN Data Model. These technologies and direct enablers for the development of CBRN integrated sensor networks and the dissemination of CBRN information across all users. The SSA directly supports Chemical and Biological Defense Program (CBDP) initiatives by providing common service oriented architectures and frameworks for the collection and dissemination of Bio-Surveillance and other critical CBRN information.					
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Title: 1) JEM Command and Control (C2) Modernization Efforts			0.646	0.322	0.986
FY 2014 Accomplishments: Updated fielded JEM software due to changing Army, Navy, Air Force, Marine Corps, SOCOM, and National Guard C2 host architectures, systems, and standards in order to maintain interoperability and avert cyber threats and vulnerabilities to host C2 systems. Perform test and evaluation of updated JEM software baseline.					
FY 2015 Plans: Continue to update field JEM software due to changing Army, Navy, Air Force, Marine Corps, SOCOM, and National Guard C2 host architectures, systems, and standards in order to maintain interoperability and avert cyber threats and vulnerabilities to host C2 systems. Perform test and evaluation of updated JEM software baseline.					
FY 2016 Plans: Continue to update fielded JEM Increment 1 software due to changing Army, Navy, Air Force, Marine Corps, SOCOM, and National Guard C2 host architectures, systems, and standards in order to maintain interoperability and avert cyber threats and vulnerabilities to host C2 systems. Perform test and evaluation of updated JEM Increment 1 baselines.					
Title: 2) JEM Pre-Planned Product Improvement (P3I)			1.130	1.053	1.914
FY 2014 Accomplishments: Tested and integrated previously fielded JEM software with science and technology upgrades and model enhancements to improve JEM accuracy and precision. Improve JEM architecture and overall performance through software updates and deficiency resolution.					
FY 2015 Plans: Continue to develop, test, and integrate previously fielded JEM software with science and technology upgrades and model enhancements to improve JEM accuracy and precision. Improve JEM architecture and overall performance through software updates and deficiency resolution.					
FY 2016 Plans: Test and integrate fielded JEM Increment 1 and Increment 2 software with science and technology upgrades and model enhancements to improve JEM accuracy and precision. Improve JEM Increment 1 and Increment 2 architecture and overall					

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
performance through software updates and deficiency resolution. Both Increment 1 and Increment 2 software will be supported until all service C2 systems with Increment 1 software are fielded with Increment 2 software.				
Title: 3) JWARN System Modernization/Update Development FY 2014 Accomplishments: Conducted engineering and development efforts to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems while utilizing the IT BOX construct and Agile Software development processes. FY 2015 Plans: Continue engineering and development efforts to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems while utilizing the IT BOX construct and Agile Software development processes. FY 2016 Plans: Continue engineering and development efforts to upgrade existing, operational JWARN Systems in order to maintain interoperability, efficiency and functionality within the targeted C2 systems while utilizing the IT BOX construct and Agile Software development processes.		2.617	1.015	2.767
Title: 4) JWARN IT BOX Program Management Support FY 2014 Accomplishments: Conducted JWARN program financial management, scheduling, planning and reporting support to modernization effort under the IT BOX construct and Agile Software development processes. FY 2015 Plans: Continue JWARN program financial management, scheduling, planning and reporting support to modernization effort under the IT BOX construct and Agile Software development processes. FY 2016 Plans: Continue JWARN program financial management, scheduling, planning and reporting support to modernization effort under the IT BOX construct and Agile Software development processes.		0.337	0.227	0.499
Title: 5) JWARN IT BOX Test & Evaluation (T&E) FY 2014 Accomplishments:		0.507	0.227	0.331

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Conducted required governmental developmental and operational testing on JWARN software updates and modernization efforts under the IT BOX construct and Agile Software testing processes. FY 2015 Plans: Continue required governmental developmental and operational testing on JWARN software updates and modernization efforts under the IT BOX construct and Agile Software testing processes. FY 2016 Plans: Continue required governmental developmental and operational testing on JWARN software updates and modernization efforts under the IT BOX construct and Agile Software testing processes.					
Title: 6) SSA Policies, Standards and Guidelines FY 2014 Accomplishments: Supported programs in Interoperability and Supportability (I&S) certification, Information Support Plan (ISP), and Data and Service Exposure Verification and Registration. Registered systems in the Army Portfolio Management Solution/Army Information Technology Registry (APMS/AITR). FY 2015 Plans: Support programs in the Interoperability and Supportability (I&S) certification, Information Support Plan (ISP), and Data and Service Exposure Verification and Registration. Update existing programs and register new programs in the Army Portfolio Management Solution/Army Information Technology Registry (APMS/AITR). FY 2016 Plans: Continue to support programs in the Interoperability and Supportability (I&S) certification, Information Support Plan (ISP), and Data and Service Exposure Verification and Registration. Update existing programs and register new programs in the Army Portfolio Management Solution/Army Information Technology Registry (APMS/AITR).			0.252	0.266	0.257
Title: 7) SSA Integrated Architecture FY 2014 Accomplishments: Provided and updated program of record integrated architectures and provide Net-Centric Policy implementation assistance. Continue to support CCSI updates. Continue to provide CCSI reference implementation. Supported the enterprise tools and common capabilities to ensure relevance across CBRN programs. FY 2015 Plans:			0.251	0.247	0.251

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program			Date: February 2015		
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)		
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2014	FY 2015	FY 2016
Provide and update program of record integrated architectures and provide Net-Centric Policy implementation assistance. Continue to support CCSI updates. Continue to provide CCSI reference implementation. Support the enterprise tools and common capabilities to ensure relevance across CBRN programs. FY 2016 Plans: Continue to provide and update program of record integrated architectures and provide Net-Centric Policy implementation assistance. Continue to support CCSI updates. Continue to provide CCSI reference implementation. Support the enterprise tools and common capabilities to ensure relevance across CBRN programs.					
Title: 8) SSA Chemical, Biological, Radiological, Nuclear (CBRN) Data Model FY 2014 Accomplishments: Achieved a mandated net-centric environment by providing enabling tools which include the CBRN Data Model and Data Dictionary, which define Common CBRN semantics and syntax and the CBRN Extensible Markup Language (XML) schemas that define reusable XML types for information exchange throughout the enterprise. FY 2015 Plans: Achieve a mandated net-centric environment by providing enabling tools which include the CBRN Data Model and Data Dictionary, which define Common CBRN semantics and syntax and the CBRN Extensible Markup Language (XML) schemas that define reusable XML types for information exchange throughout the enterprise. FY 2016 Plans: Achieve a mandated net-centric environment by providing enabling tools which include the CBRN Data Model and Data Dictionary, which define Common CBRN semantics and syntax and the CBRN Extensible Markup Language (XML) schemas that define reusable XML types for information exchange throughout the enterprise.			0.267	0.253	0.251
Title: 9) SSA Information Assurance FY 2014 Accomplishments: Maintained proper Information Assurance accreditation of any system within the CBDP portfolio throughout its life-cycle. This includes periodic re-accreditation of JPEO CBDP systems. FY 2015 Plans: Maintain proper Information Assurance accreditation of any system within the CBDP portfolio throughout its life-cycle. This includes periodic re-accreditation of JPEO CBDP systems. FY 2016 Plans:			0.435	0.434	0.447

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) IS7 / <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Continue to maintain proper Information Assurance accreditation of any system within the CBDP portfolio throughout its life-cycle. This includes periodic re-accreditation of JPEO CBDP systems.			
Title: 10) SBIR/STTR		-	0.047
FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.			-
Accomplishments/Planned Programs Subtotals		6.442	4.091
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
JOINT EFFECTS MODEL (JEM)			
<p>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.</p> <p>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.</p> <p>The current contractor for JEM 2.0 will provide all capabilities defined in the Requirement Definition Package 1 (RDP-1) document produced by the Joint Requirements Office (JRO). 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 FY18 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 FY18 will be responsible 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.</p> <p>The JEM IS ICD describes the notional implementation plan for fielding of future JEM capabilities among four separate JEM Requirement Definition Packages (RDPs). RDP-1 contains the baseline capabilities for software and was released in June of 2014. RDP-2 will be released after the completion of RDP-1. This RDP will incorporate emerging capabilities that the Joint Science and Technology Office determines has reached a sufficient enough maturity for incorporation into JEM, such as ability to model new agents. Requirements to integrate baseline capabilities into a version that can be fielded on service C2 systems will be released in RDP-3.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) IS7 / <i>INFORMATION SYSTEMS (OP SYS DEV)</i>
<p>RDP-3 will be released following RDP-1 but prior to RDP-2, to rapidly allow baseline capabilities to be incorporated into C2 systems. RDP-4 is a notional package that would allow the Science and Technology community a venue to use the JEM program to develop a version of the product for S&T use. Capabilities that are only required for the Science and Technology community and not for operational users would be implemented in RDP-4. Capabilities in RDP-4 would not be required to go to Operational Test, as they would not be fielded to operational users.</p> <p>RDP 1 - Baseline Capabilities: There are 5 planned Capability Drops (CD) within RDP 1. RDP 2 - Emerging Capabilities: There are 5 planned Capability Drops (CD) within RDP 2. RDP 3 - C2 Integration: There are 8 planned Capability Drops (CD) within RDP 3 tied to all the various Strategic and Service C2 Systems RDP 4 - Analytical Support: There are 2 planned Capability Drops (CD) within RDP 4.</p> <p>After an over-arching MS B with the MDA, each RDP will have an associated Build Decision. Each CD will have an associated fielding decision.</p> <p>JOINT WARNING & REPORTING NETWORK (JWARN)</p> <p>JWARN Increment 2 utilizes the JROC's "IT Box" construct for software requirements management and development. The intent is to provide the next generation of capability with current and future technologies, as stated in the IS ICD, in less time and away from an incremental delivery approach. This effort is being executed under a Cost-Plus-Award Term Incentive structure to gain maximum benefit to the Government in maintaining the fielded baseline and future software capability development and was awarded under a full and open competition Request for Proposal (RFP). The JWARN Program will procure a Sensor Connectivity Capability (SCC) (hardware materiel solution) in order to facilitate the transfer of CBRN sensor information from legacy CBRN sensors to DoD networks. This solution will be external to the CBRN Sensors and Service-identified network transmission device(s).</p> <p>SOFTWARE SUPPORT ACTIVITY (SSA)</p> <p>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). Phase 1a identifies CBDP programs that deal with data or software, and have an IT component. 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. Phase 2 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.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JEM - SW S - JEM Inc. 1 Modernization	C/CPAF	Northrop Grumman Corp. : San Diego, CA	3.821	1.776	Mar 2014	1.375	Mar 2015	2.900	Mar 2016	-		2.900	Continuing	Continuing	-
** JWARN - SW GFPR - JWARN Inc. 1 Modernization	C/CPAF	Northrop Grumman Corp. : Winter Park, FL	5.898	2.280	Mar 2014	0.902	Mar 2015	2.477	Mar 2016	-		2.477	Continuing	Continuing	-
** SSA - SW S - Development Services	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	1.378	0.441	Nov 2013	0.438	Nov 2014	0.460	Nov 2015	-		0.460	Continuing	Continuing	-
Subtotal			11.097	4.497		2.715		5.837		-		5.837	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JWARN - ES S - JWARN Inc.1 Modernization	MIPR	Various :	1.933	0.337	Nov 2013	0.113	Nov 2014	0.424	Nov 2015	-		0.424	Continuing	Continuing	-
** SSA - TD/D C - Information Assurance Activities	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	2.021	0.289	Nov 2013	0.293	Nov 2014	0.285	Nov 2015	-		0.285	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR- SBIR/STTR	PO	TBD :	0.000	-		0.047		-		-		-	Continuing	Continuing	-
Subtotal			3.954	0.626		0.453		0.709		-		0.709	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)					
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JWARN - DTE SB - Developmental testing	MIPR	Various :	2.780	0.507	Nov 2013	0.227	Nov 2014	0.501	Nov 2015	-		0.501	Continuing	Continuing	-
** SSA - OTHT S - Integration Verification and Valuation (IV&V)	MIPR	Space and Naval Warfare (SPAWAR) Systems Center : San Diego, CA	1.474	0.475	Nov 2013	0.469	Nov 2014	0.461	Nov 2015	-		0.461	Continuing	Continuing	-
Subtotal			4.254	0.982		0.696		0.962		-		0.962	-	-	-
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JWARN - PM/MS S - Program management	MIPR	Various :	0.545	0.337	Mar 2014	0.227	Mar 2015	0.195	Mar 2016	-		0.195	Continuing	Continuing	-
Subtotal			0.545	0.337		0.227		0.195		-		0.195	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			19.850	6.442		4.091		7.703		-		7.703	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) IS7 / <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** JEM - Production and Deployment (GCCS-M)																												
JEM - Operational Systems Development																												
JEM - Service C2 Systems Modernization & Upgrades																												
JEM - MS B																												
JEM - BD 1																												
JEM - RDP 2																												
JEM - BD 2																												
JEM - FD 1																												
JEM - RDP 3																												
JEM - IOC Standalone																												
JEM - BD 3																												
JEM - FD 2																												
JEM - RDP 4																												
JEM - FD 3																												
JEM - FD 4																												
JEM - Gov't DT / IT / V&V																												
** JWARN - Operational Assessment (OA) - Army Command Post Web																												
JWARN - FOT&E - Army Command Post Web (NIE 14.1)																												
JWARN - Production and Deployment																												
JWARN - Service C2 Systems Modernization and Upgrades																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) IS7 / INFORMATION SYSTEMS (OP SYS DEV)
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
JWARN - Baseline Critical Design Review (Software)																												
JWARN - RDP 1																												
JWARN - RDP 2																												
JWARN - TEMP (Software)																												
JWARN - MS B																												
JWARN - BD 1																												
JWARN - BD 2																												
JWARN - Initial Multi-Service Operational Testing (MOT&E)																												
JWARN - RDP 3																												
JWARN - FD 1																												
JWARN - IOC for RDP 1																												
JWARN - BD 3																												
JWARN - FD 2																												
JWARN - IOC for RDP 2																												
JWARN - FD 3																												
JWARN - IOC for RDP 3																												
JWARN - Gov't DT / IT / UFEs / OAs / FOTs																												
** SSA - Provide Information Assurance Site Compliance Testing																												
SSA - Provide CM Services for Common User Products and Services																												
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) IS7 / <i>INFORMATION SYSTEMS (OP SYS DEV)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.																												
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface																												
SSA - Sustain CCSI, including investigation, as an industry standard																												
SSA - Sustain Common Components products, process and services																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) IS7 / <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JEM - Production and Deployment (GCCS-M)	1	2014	3	2014
JEM - Operational Systems Development	1	2014	4	2017
JEM - Service C2 Systems Modernization & Upgrades	1	2014	2	2017
JEM - MS B	4	2014	4	2014
JEM - BD 1	1	2015	1	2015
JEM - RDP 2	1	2015	1	2015
JEM - BD 2	2	2015	2	2015
JEM - FD 1	4	2015	4	2015
JEM - RDP 3	4	2015	4	2015
JEM - IOC Standalone	1	2016	1	2016
JEM - BD 3	2	2016	2	2016
JEM - FD 2	4	2016	4	2016
JEM - RDP 4	1	2017	1	2017
JEM - FD 3	4	2017	4	2017
JEM - FD 4	4	2018	4	2018
JEM - Gov't DT / IT / V&V	3	2014	4	2020
** JWARN - Operational Assessment (OA) - Army Command Post Web	1	2014	4	2014
JWARN - FOT&E - Army Command Post Web (NIE 14.1)	1	2014	1	2015
JWARN - Production and Deployment	1	2014	4	2015
JWARN - Service C2 Systems Modernization and Upgrades	1	2014	4	2016
JWARN - Baseline Critical Design Review (Software)	3	2014	1	2015
JWARN - RDP 1	2	2015	2	2015

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program				Date: February 2015	
Appropriation/Budget Activity 0400 / 7		R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>		Project (Number/Name) IS7 / <i>INFORMATION SYSTEMS (OP SYS DEV)</i>	
		Start		End	
Events	Quarter	Year	Quarter	Year	
JWARN - RDP 2	2	2015	2	2015	
JWARN - TEMP (Software)	3	2015	3	2015	
JWARN - MS B	3	2015	3	2015	
JWARN - BD 1	3	2015	3	2015	
JWARN - BD 2	1	2016	1	2016	
JWARN - Initial Multi-Service Operational Testing (MOT&E)	4	2015	2	2016	
JWARN - RDP 3	3	2016	3	2016	
JWARN - FD 1	4	2016	4	2016	
JWARN - IOC for RDP 1	1	2017	1	2017	
JWARN - BD 3	2	2017	2	2017	
JWARN - FD 2	4	2017	4	2017	
JWARN - IOC for RDP 2	4	2017	4	2017	
JWARN - FD 3	4	2018	4	2018	
JWARN - IOC for RDP 3	2	2019	2	2019	
JWARN - Gov't DT / IT / UFEs / OAs / FOTs	3	2015	4	2020	
** SSA - Provide Information Assurance Site Compliance Testing	1	2014	4	2018	
SSA - Provide CM Services for Common User Products and Services	1	2014	4	2020	
SSA - Provide Information Assurance Certification/Acceptance products/services, including compliance testing	1	2014	4	2020	
SSA - Provide Modeling, Simulation, VV&A, Integration/Test support and interoperability demonstrations.	1	2014	4	2020	
SSA - Provide CBRN Interface Standards, including reference implementations, e.g. Common CBRN Sensor Interface	1	2014	4	2020	
SSA - Sustain CCSI, including investigation, as an industry standard	1	2014	4	2020	
SSA - Sustain Common Components products, process and services	1	2014	4	2020	

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) MB7 / MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
MB7: MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)	-	0.493	13.414	11.801	-	11.801	10.420	3.137	13.943	12.496	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides for the upgrade and modernization of fielded Medical Biological defense equipment/systems including the Joint Biological Agent Identification and Diagnostic System (JBAIDS) and Next Generation Diagnostic Systems (NGDS) suite.

JBAIDS is a commercial off-the-shelf development/production effort started in August 2003 that focused on rapid development and fielding efforts to deliver a critical capability to identify bacterial and viral agents in environmental surveillance and clinical specimen sample types. By 2005, 16 biological warfare (BW) agent surveillance detection kits were fielded along with the first JBAIDS in vitro diagnostic (IVD) assay cleared by the U.S. Food and Drug Administration (FDA). JBAIDS currently has seven IVD kits cleared by the FDA, JBAIDS achieved full operational capability (340 systems delivered all Services) in July 2011. JBAIDS efforts in 2012-2016 will focus on adding surveillance food and water pathogen detection assays as well as laptop retrofit and fielding. Also, the development team will focus on completing Pre-Emergency Use Authorization (Pre-EUA's) packages annually for FDA review. The operational development RDT&E funds will be used to oversee the configuration management of the system to include the conduct of annual software security information assurance (IA) updates on fielded software and monitor analyzer/laptop parts obsolescence.

The NGDS is an evolutionary acquisition family of systems to provide increments of capability over time across many echelons of the Combat Health Support System. The mission of the NGDS is to provide Chemical, Biological and Radiological (CBR) threat and infectious disease identification and 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 (NGDS Inc 1) will significantly improve diagnostic capability for deployable combat health support units (Role 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 Inc 1 program has a streamlined MS A to MS C - Limited Deployment acquisition strategy. BA7 funds will be used to complete the development of assays initiated during the Technology Maturation and Risk Reduction (TMRR) phase and needed for JBAIDS replacement as well as fund the development of three objective assays (Burkholderia, Alpha Virus, and Orthopox).

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

	FY 2014	FY 2015	FY 2016
Title: 1) Joint Biological Agent Identification and Diagnostic System (JBAIDS)	0.197	0.400	0.200

FY 2014 Accomplishments:

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Continued sustainment contract - Contractor Logistics Support (CLS), refurbishments, software updates, Federal Information Security Management Act (FISMA). FY 2015 Plans: Continue sustainment contract - CLS, refurbishments, software updates, FISMA. FY 2016 Plans: Continue sustainment contract - CLS, refurbishments, software updates, Department of Defense Information Assurance Risk Management Framework (DIARMF).				
Title: 2) JBAIDS FY 2014 Accomplishments: Submitted Pre-EUA packages to the FDA. FY 2015 Plans: Continue submissions of Pre-EUA packages to the FDA. FY 2016 Plans: Continue submissions of Pre-EUA packages to the FDA.		0.163	0.200	0.130
Title: 3) JBAIDS FY 2015 Plans: Initiate and complete laptop replacement and fielding efforts.		-	2.517	-
Title: 4) JBAIDS FY 2014 Accomplishments: Completed addition of Food and Water pathogen detection assays to the JBAIDS capabilities.		0.033	-	-
Title: 5) JBAIDS FY 2014 Accomplishments: Maintained the Defense Logistics Agency Electronic-Cataloging capability. FY 2015 Plans: Maintain the Defense Logistics Agency Electronic-Cataloging capability. FY 2016 Plans: Maintain the Defense Logistics Agency Electronic-Cataloging capability.		0.100	0.100	0.100
Title: 6) NGDS - Increment 1		-	4.000	9.371

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) MB7 / <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
FY 2015 Plans: Continue development and FDA clearance of Plague, Tularemia and Q-Fever IVD assays initiated with BA4 funds.			
FY 2016 Plans: Complete development of Plague, Tularemia, and Q-Fever IVD assays.			
Title: 7) NGDS - Increment 1 FY 2015 Plans: Initiate Assay optimization for pan-Burkholderia IVD panel, Alpha virus and orthopox IVD panel. FY 2016 Plans: Continue development for pan-Burkholderia IVD panel, Alpha virus and orthopox IVD panel.		-	1.321
Title: 8) NGDS - Increment 1 FY 2015 Plans: Initiate development and Testing of 22 Environmental Assays, completion will be funded from CALS.		-	4.648
Title: 9) SBIR/STTR FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.		-	0.228
Accomplishments/Planned Programs Subtotals		0.493	13.414
C. Other Program Funding Summary (\$ in Millions) N/A Remarks D. Acquisition Strategy JOINT BIO AGENT IDENT AND DIAG SYSTEM (JBAIDS) The original Equipment Manufacturer (OEM) was selected to design and manufacture additional surveillance assay kits to detect food and water pathogens, along with diagnostic kits to detect additional threat agents. The program plans to conduct the annual JBAIDS Federal Information Security Management Act (FISMA) software compliance certification in addition to any logistics sustainment issues associated with parts obsolescence. Additionally, the JBAIDS program office continues to partner with the US Army Medical Institute of Infectious Diseases (USAMRIID), other DoD and US Government laboratories to develop FDA Pre-Emergency Use Authorization (EUA) packages for biological warfare agents (BWA's) that could be used as biological warfare threats to DoD military forces.			

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) MB7 / <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>
<p>NEXT GENERATION DIAGNOSTICS SYSTEM (NGDS)</p> <p>The term "Role" is used to describe the stratification of the four tiers in which medical support is organized, on a progressive basis, to conduct treatment, evaluation, resupply, and functions essential to the maintenance of the health of the force. Role 3 support is normally provided at Division or Service equivalent level and includes specialist laboratory resources. The NGDS Inc 1 program has a streamlined MS A to MS C - Limited Deployment acquisition strategy. The NGDS Inc 1 is intended to replace the legacy Joint Biological Agent Identification and Diagnostic System (JBAIDS) beginning in FY17. NGDS Increment 2 (NGDS Inc 2) will complement NGDS Inc 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.</p> <p>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.</p> <p>MB7 funds will support development, testing, and FDA approval of additional assays after system fielding.</p> <p><u>E. Performance Metrics</u> N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) MB7 / MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)					
Product Development (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** NGDS - Inc 1 - HW C - Assay Development	C/CPFF	TBD :	0.000	-		5.969	Jun 2015	10.088	Dec 2015	-		10.088	Continuing	Continuing	-
Subtotal			0.000	-		5.969		10.088		-		10.088	-	-	-
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JBAIDS - TD/D SB - Software Update & Parts Obsolescence	C/FFP	TBD :	0.612	-		2.517	Mar 2015	-		-		-	Continuing	Continuing	-
** NGDS - ES S - Engineering Support	MIPR	Various :	0.000	-		0.350	Jun 2015	0.350	Jun 2016	-		0.350	Continuing	Continuing	-
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.228		-		-		-	Continuing	Continuing	-
Subtotal			0.612	-		3.095		0.350		-		0.350	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JBAIDS - OTHT S - EUA packages	MIPR	US Army Medical Research Institute of Infectious Disease (USAMRIID) : Fort Detrick, MD	0.452	0.196	Mar 2014	0.200	Mar 2015	0.130	Mar 2016	-		0.130	Continuing	Continuing	-
** NGDS - DTE S - Operational Assessment/ MOT&E	MIPR	Various :	0.000	-		3.300	Jun 2015	0.746	Jan 2016	-		0.746	Continuing	Continuing	-
Subtotal			0.452	0.196		3.500		0.876		-		0.876	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) MB7 / MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)					
Management Services (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** JBAIDS - PM/MS S - Project Management	MIPR	Various :	1.419	0.100	Jan 2014	0.100	Jan 2015	0.100	Jan 2016	-		0.100	Continuing	Continuing	-
PM/MS S - Sustainment contract: CLS, software updates	PO	Various :	0.000	0.197	Jan 2014	0.400	Jan 2015	0.200	Jan 2016	-		0.200	Continuing	Continuing	-
** NGDS - PM/MS S - Program Management Support	Allot	JPM Medical Countermeasure Systems (JPM MCS) : Fort Detrick, MD	0.000	-		0.350	Jun 2015	0.187	Jan 2016	-		0.187	Continuing	Continuing	-
Subtotal			1.419	0.297		0.850		0.487		-		0.487	-	-	-
			Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			2.483	0.493		13.414		11.801		-		11.801	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program **Date:** February 2015

Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) MB7 / <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>
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	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** JBAIDS - Pre-Emergency Use Authorization Packages																												
JBAIDS - Surveillance Assays (Food & Water)																												
JBAIDS - Defense Logistics Agency Electronic-Cataloging																												
JBAIDS - Contractor Logistics Support, System-Sustainment, Analyzer Refurbishment, FISMA/DIARMF																												
JBAIDS - Laptop replacement																												
** NGDS - Increment 1 Environmental Assay Development																												
NGDS - NGDS Inc 1 follow on IVD assay development (Plague, Tularemia, Q-Fever)																												
NGDS - NGDS Inc 1 follow on IVD assay Development (Burkholderia, Alpha Virus, Orthopox)																												
NGDS - Increment 2 follow on Assay Development																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) MB7 / <i>MEDICAL BIOLOGICAL DEFENSE (OP SYS DEV)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** JBAIDS - Pre-Emergency Use Authorization Packages	1	2014	4	2020
JBAIDS - Surveillance Assays (Food & Water)	1	2014	3	2015
JBAIDS - Defense Logistics Agency Electronic-Cataloging	1	2014	4	2020
JBAIDS - Contractor Logistics Support, System-Sustainment, Analyzer Refurbishment, FISMA/DIARMF	1	2014	4	2020
JBAIDS - Laptop replacement	2	2015	4	2015
** NGDS - Increment 1 Environmental Assay Development	1	2015	4	2015
NGDS - NGDS Inc 1 follow on IVD assay development (Plague, Tularemia, Q-Fever)	3	2015	4	2016
NGDS - NGDS Inc 1 follow on IVD assay Development (Burkholderia, Alpha Virus, Orthopox)	4	2015	4	2017
NGDS - Increment 2 follow on Assay Development	4	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program										Date: February 2015		
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)				Project (Number/Name) TE7 / TEST & EVALUATION (OP SYS DEV)			
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
TE7: TEST & EVALUATION (OP SYS DEV)	-	3.646	5.984	4.091	-	4.091	5.107	5.169	5.376	5.461	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project provides revitalization and technology upgrades of existing instrumentation and equipment at West Desert Test Center (WDTC), located at Dugway Proving Ground (DPG), a Major Range and Test Facility Base (MRTFB), in support of their Chemical and Biological (CB) test mission. Included in these efforts are (1) the Life Sciences Test Facility (LSTF) at the WDTC, which is the only U.S. laboratory equipped to test for aerosolized bio-safety level-3 (BSL-3) agents, (2) Major Test Chambers, (3) the CB Test Grid, and (4) the Combined Chemical Test Facility.

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

	FY 2014	FY 2015	FY 2016
Title: 1) WDTC - MRTFB - Life Sciences Test Facility FY 2014 Accomplishments: Continued to provide instrumentation and equipment upgrades to the Life Sciences Test Facility (LSTF) at the WDTC, in support of the CB Defense mission. Upgrades and technology enhancements included: (1) Coupled Mass Spec-PCR genotyping system and bundled analysis software to be used to determine identity of all bacterial and viral constituents in biological samples; (2) Referee instrumentation aimed at characterizing bio-Non-Traditional Agent (NTA) (advanced bio threat) and other simulant samples; (3) Immunological identification system; and (4) Enhanced simulant development capability. FY 2015 Plans: Continues to provide instrumentation and equipment upgrades to LSTF at the WDTC, in support of the CB Defense mission. Provides for BSL-3 biological laboratory equipment for the LSTF Annex which is scheduled for completion in FY15. This equipment is required to re-establish full capability of the LSTF upon completion of the Annex. FY 2016 Plans: Continues to provide instrumentation and equipment to LSTF at the WDTC, in support of the CB Defense mission. Continues to provide for BSL-3 biological laboratory equipment for the LSTF Annex. Also provides for enhanced laboratory referee capability and enhancement of the biological decontamination capability.	1.036	2.410	1.221
Title: 2) WDTC - MRTFB - Major Test Chambers FY 2014 Accomplishments: Continued to provide for modernization of existing instrumentation and equipment in the major test chambers at WDTC, in support of the CB Defense mission. These consist of the following: (1) the Material Test Facility (MTF), which is a unique test chamber where real-world decontamination operations can be tested; (2) Building 4165, which houses updated surety test facilities and	0.630	0.641	0.521

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) TE7 / <i>TEST & EVALUATION (OP SYS DEV)</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
laboratories used for the testing of protective material, decontamination technologies, and detection systems with chemical agents and simulants; and (3) Building 3445 chambers support filter and collective protection testing. Modernization in the chambers included: (a) Continue development of an aerosol generation and sampling capability; and (b) Characterization of improved and/or articulated testing fixtures; and (c) Continuous enhancement of Toxic Industrial Chemical (TIC) detection.				
FY 2015 Plans: Continues to provide for modernization of existing instrumentation and equipment in the major test chambers at WDTC, in support of the CB Defense mission. These chambers consist of the following: (1) the MTF, which is a unique test chamber where real-world decontamination operations can be tested; (2) Building 4165, which houses updated surety test facilities and laboratories used for the testing of protective material, decontamination technologies, and detection systems with chemical agents and simulants; and (3) Building 3445 chambers support filter and collective protection testing. Modernization in the chambers includes: (a) Continue enhancements of an aerosol generation and sampling capability; (b) Continue development of the agent fate aerosol capability; (c) Upgrades to agent surety monitor and analytical instrumentation; (d) Continue Small Item Decontamination (SID) recirculating bath upgrade; (e) Upgrade to the large scale filtration fixture to allow toxic agents and systems other than single-pass filtration to be tested; (f) Characterization of improved and/or articulated testing fixtures; (g) Continuous enhancement of TIC detection; and (h) Non-Traditional Agent (NTA) test and detection capability.				
FY 2016 Plans: Provides for modernization of existing instrumentation and equipment in the major test chambers at WDTC, in support of the CB Defense mission. These chambers consist of the following: (1) the MTF, which is a unique test chamber where real-world decontamination operations can be tested; (2) Building 4165, which houses updated surety test facilities and laboratories used for the testing of protective material, decontamination technologies, and detection systems with chemical agents and simulants; and (3) Building 3445 chambers support filter and collective protection testing. Modernization in the chambers includes: (a) Continue enhancements of an aerosol generation and sampling capability; (b) Continue development of the agent fate aerosol capability; (c) Continue upgrades to agent surety monitor and analytical instrumentation; (d) Continuous enhancement of TIC detection; and (e) NTA test and detection capability.				
Title: 3) WDTC - MRTFB - CB Test Grid		0.750	0.764	0.621
FY 2014 Accomplishments: Continued to enhance existing instrumentation and equipment at multiple test grids (Target S, Downwind, Tower Outdoor Test Grids, etc.) at WDTC, in support of the CB Defense mission. DPG's vast area combined with its remote location allow for all sizes of CB and explosive test events, including large scale Toxic Industrial Chemical (TIC) release capability, and are supported by state of the art meteorological and referee capability. Continuing modernization efforts included: (1) Development of agent to simulant correlation, dissemination equipment, and monitoring systems for additional field simulants; (2) Required upgrades to point and standoff field referee systems; (3) Upgrade of communications and data analysis capabilities at command posts; (4)				

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015		
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)	Project (Number/Name) TE7 / TEST & EVALUATION (OP SYS DEV)		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Enhanced aerosol dissemination systems; (5) Upgraded high speed cameras; and (6) Development of in house capability to calibrate infrared (IR) cameras to reduce cost and turnaround time. FY 2015 Plans: Continue to enhance existing instrumentation and equipment at multiple test grids (Target S, Downwind, Tower Outdoor Test Grids, etc.) at WDTC, in support of the CB Defense mission. DPG's vast area combined with its remote location allow for all sizes of CB and explosive test events, including large scale TIC release capability, and are supported by state of the art meteorological and referee capability. Continuing modernization efforts will include: (1) Development of agent to simulant correlation, dissemination equipment, and monitoring systems for additional field simulants; (2) Required upgrades to point and standoff field referee systems; (3) Upgrade of communications and data analysis capabilities at command posts; (4) Enhanced aerosol dissemination systems; (5) Upgrade high speed cameras; and (6) Development of in-house capability to calibrate IR cameras to reduce cost and turnaround time. Enhancements to Test Grid provides near real time data analysis and rapid test adaptation to minimize costs and increase effectiveness of testing. FY 2016 Plans: Enhances existing instrumentation and equipment at multiple test grids (Target S, Downwind, Tower Outdoor Test Grids, etc.) at WDTC, in support of the CB Defense mission. DPG's vast area combined with its remote location allow for all sizes of CB and explosive test events, including large scale TIC release capability, and are supported by state of the art meteorological and referee capability. Continuing modernization efforts will include: (1) Continued upgrades to point and standoff field referee systems; (2) Development of agent to simulant correlation, dissemination equipment, and monitoring systems for additional field simulants; (3) Upgrade of grid communications and data analysis capabilities; (4) Enhanced aerosol dissemination systems; (5) Upgrade high speed cameras. Enhancements to Test Grid provides near real time data analysis and rapid test adaptation to minimize costs and increase the effectiveness of field testing.				
Title: 4) WDTC - MRTFB - Combined Chemical Test Facility FY 2014 Accomplishments: Provided for continued revitalization and upgrade of existing instrumentation and equipment at the Combined Chemical Test Facility (CCTF) at WDTC in support of their CB test mission. The CCTF tests the capability of detectors, decontaminants, and protective systems to defend against toxic chemical agents. This project upgraded current technology to include: (1) Characterization of new and upgraded test fixtures; (2) Upgrade control of systems for swatch, protective component, and detection testing test fixtures; (3) Continued upgrade of CB Navy Safari instrumentation to hardened components compatible with a marine environment; (4) Validated low volatility swatch test capability; (5) Enhancements to agent referees and analytical instrumentation; and (6) Expanded filter test capability to include additional toxic industrial chemicals and simulants, and additional types of filtration systems. FY 2015 Plans:		1.230	2.125	1.728

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Exhibit R-2A, RDT&E Project Justification: PB 2016 Chemical and Biological Defense Program		Date: February 2015	
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) TE7 / <i>TEST & EVALUATION (OP SYS DEV)</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015
Provide for continued revitalization and upgrade of existing instrumentation and equipment at the CCTF at WDTC in support of their chemical test mission. The CCTF tests the capability of detectors, decontaminants, and protective systems to defend against toxic chemical agents. Initiates replacement of chemical laboratory fume hoods and hood controllers throughout the chemical labs. Modernization results in improved test fixtures which reduce risk to personnel and testing results. FY 2016 Plans: Provide for continued revitalization and upgrade of existing instrumentation and equipment at the CCTF at WDTC in support of their chemical test mission. The CCTF tests the capability of detectors, decontaminants, and protective systems to defend against toxic chemical agents. Modernization results in improved test fixtures which reduce risk to personnel and provide improved test capabilities.			
Title: 5) SBIR/STTR FY 2015 Plans: SBIR/STTR - FY15 - Small Business Innovative Research.		-	0.044
Accomplishments/Planned Programs Subtotals		3.646	5.984
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
T&E RANGE INSTRUMENT/TECH UPGRADE (T&E UPGRADE)			
Test and evaluation Range Instrumentation/Technology Upgrades is a continuing project. It provides for technical upgrades to WDTC capabilities for Chemical and Biological testing of DoD CB materiel, weapons, and weapons systems from concept through production.			
E. Performance Metrics			
N/A			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Chemical and Biological Defense Program												Date: February 2015			
Appropriation/Budget Activity 0400 / 7						R-1 Program Element (Number/Name) PE 0607384BP / CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)						Project (Number/Name) TE7 / TEST & EVALUATION (OP SYS DEV)			
Support (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** ZSBIR - SBIR/STTR - Aggregated from ZSBIR-SBIR/STTR	PO	TBD :	0.000	-		0.044		-		-		-	Continuing	Continuing	-
Subtotal			0.000	-		0.044		-		-		-	-	-	-
Test and Evaluation (\$ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 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
** T&E UPGRAD - OTHT S - Technology Upgrades - WDTC, UT	MIPR	West Desert Test Center : Dugway, UT	7.278	3.646	Mar 2014	5.940	Mar 2015	4.091	Mar 2016	-		4.091	Continuing	Continuing	-
Subtotal			7.278	3.646		5.940		4.091		-		4.091	-	-	-
Project Cost Totals			7.278	3.646		5.984		4.091		-		4.091	-	-	-
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Chemical and Biological Defense Program										Date: February 2015									
Appropriation/Budget Activity 0400 / 7					R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>					Project (Number/Name) TE7 / <i>TEST & EVALUATION (OP SYS DEV)</i>									

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	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
** T&E UPGRAD - LSTF Instrumentation & Equip Upgrades, WDTC																												
T&E UPGRAD - Modernization of Major Test Chambers, WDTC																												
T&E UPGRAD - Enhance Instrumentation & Equipment at Chemical Biological (CB) Test Grids, WDTC																												
T&E UPGRAD - Revitalize & Upgrade Instrumentation & Equipment at Combined Chemical Test Facility, WDTC																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Chemical and Biological Defense Program			Date: February 2015
Appropriation/Budget Activity 0400 / 7	R-1 Program Element (Number/Name) PE 0607384BP / <i>CHEMICAL/BIOLOGICAL DEFENSE (OP SYS DEV)</i>	Project (Number/Name) TE7 / <i>TEST & EVALUATION (OP SYS DEV)</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
** T&E UPGRAD - LSTF Instrumentation & Equip Upgrades, WDTC	1	2014	4	2020
T&E UPGRAD - Modernization of Major Test Chambers, WDTC	1	2014	4	2020
T&E UPGRAD - Enhance Instrumentation & Equipment at Chemical Biological (CB) Test Grids, WDTC	1	2014	4	2020
T&E UPGRAD - Revitalize & Upgrade Instrumentation & Equipment at Combined Chemical Test Facility, WDTC	1	2014	4	2020